

# TEST REPORT

Product Name: Bluetooth headset  
FCC ID: 2BBQJ-E039  
Trademark: N/A  
Model Number: E039  
Prepared For: Shenzhen Cantianshu Information Technology Co.,Ltd  
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Sample Received Date: May. 06, 2024  
Sample tested Date: May. 06, 2024 to May. 07, 2024  
Issue Date: May. 07, 2024  
Report No.: CTB240507017RFX  
Test Standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247  
ANSI C63.10:2013  
Test Results: PASS  
Remark: This is Bluetooth radio test report.

Compiled by:

Reviewed by:

Approved by:

Zhou kui

Arron Liu



Zhou Kui

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Bin Mei / Director

Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "\*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.

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*(Note: N/A means not applicable)*



1. VERSION

| Report No.      | Issue Date    | Description | Approved |
|-----------------|---------------|-------------|----------|
| CTB240507017RFX | May. 07, 2024 | Original    | Valid    |

## 2. TEST SUMMARY

The Product has been tested according to the following specifications:

| Test Item  | Test Requirement  | Test method      | Result |
|--|---|------------------|--------|
| <b>AC Power Line Conducted Emission</b>              | 47 CFR Part 15 Subpart C Section 15.207                                     | ANSI C63.10-2013 | PASS   |
| <b>Radiated Spurious emissions</b>                   | 47 CFR Part 15 Subpart C Section 15.205/15.209                              | ANSI C63.10-2013 | PASS   |
| <b>Band edge and RF Conducted Spurious Emissions</b> | 47 CFR Part 15 Subpart C Section 15.247(d)/15.205(a)                        | ANSI C63.10-2013 | PASS   |
| <b>Conducted Peak Output Power</b>                   | 47 CFR Part 15 Subpart C Section 15.247 (b)(1)                              | ANSI C63.10-2013 | PASS   |
| <b>20dB Occupied Bandwidth</b>                       | 47 CFR Part 15 Subpart C Section 15.247 (a)(1)                              | ANSI C63.10-2013 | PASS   |
| <b>Carrier Frequencies Separation</b>                | 47 CFR Part 15 Subpart C Section 15.247 (a)(1)                              | ANSI C63.10-2013 | PASS   |
| <b>Hopping Channel Number</b>                        | 47 CFR Part 15 Subpart C Section 15.247 (b)                                 | ANSI C63.10-2013 | PASS   |
| <b>Dwell Time</b>                                    | 47 CFR Part 15 Subpart C Section 15.247 (a)(1)                              | ANSI C63.10-2013 | PASS   |
| <b>Pseudorandom Frequency Hopping Sequence</b>       | 47 CFR Part 15 Subpart C Section 15.247(a)&TCB Exclusion List (7 July 2002) | ANSI C63.10-2013 | PASS   |
| <b>Antenna Requirement</b>                           | 47 CFR Part 15 Subpart C Section 15.203/15.247 (b)                          | /                | PASS   |
| <b>RF Exposure Evaluation</b>                        | 47 CFR Part 15 Subpart C Section 15.247 (i)/1.1310/2.1093                   | KDB447498D01v06  | PASS   |

Remark:

Test according to ANSI C63.10-2013.

### 3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

| Item   | Uncertainty        |
|--|--------------------|
| Occupancy bandwidth                                | 54.3kHz            |
| Conducted output power Above 1G                    | 0.9dB              |
| Conducted output power below 1G                    | 0.9dB              |
| Power Spectral Density , Conduction                | 0.9dB              |
| Conduction spurious emissions                      | 2.0dB              |
| Out of band emission                               | 2.0dB              |
| 3m chamber Radiated spurious emission(9KHz-30MHz)  | 4.8dB              |
| 3m chamber Radiated spurious emission(30MHz-1GHz)  | 4.6dB              |
| 3m chamber Radiated spurious emission(1GHz-18GHz)  | 5.1dB              |
| 3m chamber Radiated spurious emission(18GHz-40GHz) | 3.4dB              |
| humidity uncertainty                               | 5.5%               |
| Temperature uncertainty                            | 0.63°C             |
| frequency  | 1×10 <sup>-7</sup> |
| Conducted Emission (150KHz-30MHz)                  | 3.2 dB             |
| Radiated Emission(30MHz ~ 1000MHz)                 | 4.8 dB             |
| Radiated Emission(1GHz ~6GHz)                      | 4.9 dB             |

**4. PRODUCT INFORMATION AND TEST SETUP**

4.1 Product Information

Model(s): E039  
 Model Description: N/A  
 Bluetooth Version: Bluetooth 5.3  
 Hardware Version: V1.0  
 Software Version: V1.0  
 Operation Frequency: Bluetooth: 2402-2480MHz  
 Max. RF output power: Bluetooth: 3.099dBm  
 Type of Modulation: Bluetooth: GFSK,  $\pi/4$  DQPSK, 8DPSK  
 Antenna installation: Bluetooth: Chip antenna  
 Antenna Gain: Bluetooth: 1.7dBi  
 Ratings: DC 5V charging from adapter  
 DC 3.7V by battery

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

| Item | Equipment | Mfr/Brand | Model/Type No. | Series No. | Note |
|------|-----------|-----------|----------------|------------|------|
| 1    | Adapter   | JIYIN     | JY-05100C      | /          | /    |

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

#### 4.4 Channel List

| CH | Frequency (MHz) | CH | Frequency (MHz) | CH | Frequency (MHz) | CH | Frequency (MHz) |
|----|-----------------|----|-----------------|----|-----------------|----|-----------------|
| 0  | 2402            | 1  | 2403            | 2  | 2404            | 3  | 2405            |
| 4  | 2406            | 5  | 2407            | 6  | 2408            | 7  | 2409            |
| 8  | 2410            | 9  | 2411            | 10 | 2412            | 11 | 2413            |
| 12 | 2414            | 13 | 2415            | 14 | 2416            | 15 | 2417            |
| 16 | 2418            | 17 | 2419            | 18 | 2420            | 19 | 2421            |
| 20 | 2422            | 21 | 2423            | 22 | 2424            | 23 | 2425            |
| 24 | 2426            | 25 | 2427            | 26 | 2428            | 27 | 2429            |
| 28 | 2430            | 29 | 2431            | 30 | 2432            | 31 | 2433            |
| 32 | 2434            | 33 | 2435            | 34 | 2436            | 35 | 2437            |
| 36 | 2438            | 37 | 2439            | 38 | 2440            | 39 | 2441            |
| 40 | 2442            | 41 | 2443            | 42 | 2444            | 43 | 2445            |
| 44 | 2446            | 45 | 2447            | 46 | 2448            | 47 | 2449            |
| 48 | 2450            | 49 | 2451            | 50 | 2452            | 51 | 2453            |
| 52 | 2454            | 53 | 2455            | 54 | 2456            | 55 | 2457            |
| 56 | 2458            | 57 | 2459            | 58 | 2460            | 59 | 2461            |
| 60 | 2462            | 61 | 2463            | 62 | 2464            | 63 | 2465            |
| 64 | 2466            | 65 | 2467            | 66 | 2468            | 67 | 2469            |
| 68 | 2470            | 69 | 2471            | 70 | 2472            | 71 | 2473            |
| 72 | 2474            | 73 | 2475            | 74 | 2476            | 75 | 2477            |
| 76 | 2478            | 77 | 2479            | 78 | 2480            | 79 | /               |

#### 4.5 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

| Test mode                                    | Low channel | Middle channel | High channel |
|--|-------------|----------------|--------------|
| Transmitting<br>(GFSK, $\pi/4$ DQPSK, 8DPSK) | 2402MHz     | 2441MHz        | 2480MHz      |
| Receiving<br>(GFSK, $\pi/4$ DQPSK, 8DPSK)    | 2402MHz     | 2441MHz        | 2480MHz      |

#### 4.6 Test Environment

|                                   |      |
|-----------------------------------|------|
| Humidity(%):                      | 54   |
| Atmospheric Pressure(kPa):        | 101  |
| Normal Voltage(DC):               | 3.7V |
| Normal Temperature( $^{\circ}$ C) | 23   |
| Low Temperature( $^{\circ}$ C)    | 0    |
| High Temperature( $^{\circ}$ C)   | 40   |



## 5. TEST FACILITY AND TEST INSTRUMENT USED

### 5.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1&2F., Building A, No. 26, Xinh Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

### 5.2 Test Instrument Used

| No. | Equipment                                 | Manufacturer | Type No.                  | Serial No.   | Firmware Version           | Calibrated until |
|-----|---|--------------|---------------------------|--------------|----------------------------|------------------|
| 1   | Spectrum Analyzer                         | Agilent      | N9020A                    | MY52090073   | A.14.16                    | 2024.07.05       |
| 2   | Power Sensor                              | Agilent      | U2021XA                   | MY56120032   | /                          | 2024.07.05       |
| 3   | Power Sensor                              | Agilent      | U2021XA                   | MY56120034   | /                          | 2024.07.05       |
| 4   | Communication test set                    | R&S          | CMW500                    | 108058       | V3.5.80                    | 2024.07.05       |
| 5   | Spectrum Analyzer                         | KEYSIGHT     | N9020A                    | MY51289897   | A.14.16                    | 2024.07.05       |
| 6   | Signal Generator                          | Agilent      | N5181A                    | MY50140365   | A.01.60                    | 2024.07.05       |
| 7   | Vector signal generator                   | Agilent      | N5182A                    | MY47420195   | A.01.87                    | 2024.07.05       |
| 8   | Communication test set                    | Agilent      | E5515C                    | MY50102567   | B.19.07<br>(E1962B)        | 2024.07.06       |
| 9   | 2.4 GHz Filter                            | Shenxiang    | MSF2400-24<br>83.5MS-1154 | 20181015001  | /                          | 2024.07.05       |
| 10  | 5 GHz Filter                              | Shenxiang    | MSF5150-58<br>50MS-1155   | 20181015001  | /                          | 2024.07.06       |
| 11  | Filter                                    | Xingbo       | XBLBQ-DZA<br>120          | 190821-1-1   | /                          | 2024.07.06       |
| 12  | BT&WI-FI Automatic test software          | Microwave    | MTS8000                   | Ver. 2.0.0.0 | /                          | /                |
| 13  | Rohde & Schwarz SFU Broadcast Test System | R&S          | SFU                       | 101017       | /                          | 2024.10.30       |
| 14  | Temperature humidity chamber              | Hongjing     | TH-80CH                   | DG-15174     | /                          | 2024.07.05       |
| 15  | 234G Automatic test software              | Microwave    | MTS8200                   | Ver. 2.0.0.0 | /                          | /                |
| 16  | 966 chamber                               | C.R.T.       | 966                       | /            | /                          | 2024.08.11       |
| 17  | Receiver                                  | R&S          | ESPI                      | 100362       | RF_ATTEN_7<br>(104489/003) | 2024.07.05       |
| 18  | Amplifier                                 | HP           | 8447E                     | 2945A02747   | /                          | 2024.07.05       |
| 19  | Amplifier                                 | Agilent      | 8449B                     | 3008A01838   | /                          | 2024.07.05       |
| 20  | TRILOG Broadband Antenna                  | Schwarzbeck  | VULB 9168                 | 00869        | /                          | 2024.07.08       |

|    |                                      |             |            |            |   |            |
|----|--------------------------------------|-------------|------------|------------|---|------------|
| 21 | Double Ridged Broadband Horn Antenna | Schwarzbeck | BBHA9120D  | 01911      | / | 2024.07.08 |
| 22 | EMI test software                    | Fala        | EZ-EMC     | FA-03A2 RE | / | /          |
| 23 | Loop Antenna                         | Schwarzbeck | FMZB 1519B | 1519B-224  | / | 2024.07.08 |
| 24 | loop antenna                         | ZHINAN      | ZN30900A   | GTS534     | / | /          |
| 25 | 40G Horn antenna                     | A/H/System  | SAS-574    | 588        | / | 2024.10.30 |
| 26 | Amplifier                            | AEROFLEX    | Aeroflex   | 097        | / | 2024.07.05 |

### Continuous disturbance

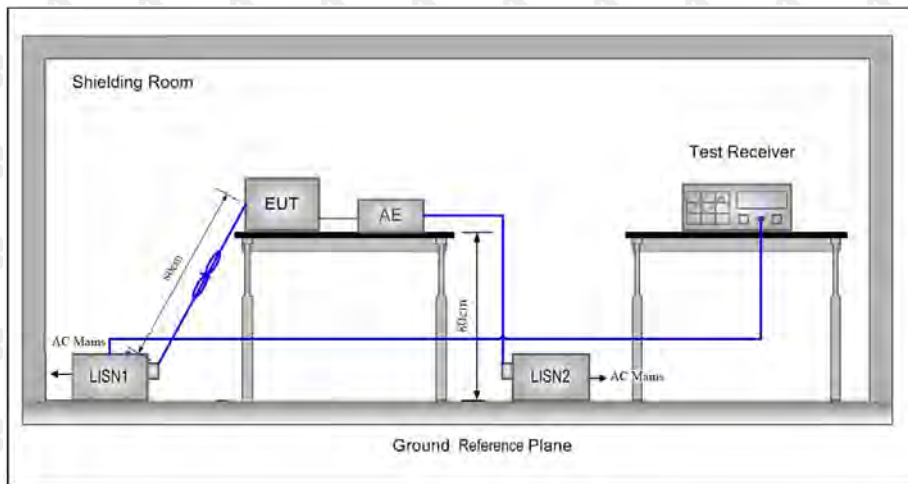
| No. | Equipment              | Manufacturer  | Model No.          | Serial No. | Firmware Version | Calibrated until |
|-----|------------------------|---------------|--------------------|------------|------------------|------------------|
| 1   | LISN                   | ROHDE&SCHWARZ | ESH3-Z5            | 100318     | /                | 2024.07.05       |
| 2   | Pulse limiter          | ROHDE&SCHWARZ | ESH3Z2             | 357881052  | /                | 2024.07.05       |
| 3   | EMI TEST RECEIVER      | ROHDE&SCHWARZ | ESCI               | 100428/003 | V4.42.SP3        | 2024.07.05       |
| 4   | Coaxial cable          | ZDECL         | Z302S-NJ-SM AJ-12M | 18091905   | /                | 2024.07.05       |
| 5   | ISN                    | Schwarzbeck   | NTFM8158           | 183        | /                | 2024.07.05       |
| 6   | Communication test set | Agilent       | E5515C             | MY50102567 | B.19.07 (E1962B) | 2024.07.05       |
| 7   | Communication test set | R&S           | CMW500             | 108058     | V3.5.80          | 2024.07.05       |
| 8   | EZ-EMC                 | Frad          | EMC-con3A1.1       | /          | /                | /                |

### Radiated emission

| No. | Equipment                            | Manufacturer  | Model No.              | Serial No. | Firmware Version | Calibrated until |
|-----|--------------------------------------|---------------|------------------------|------------|------------------|------------------|
| 1   | Double Ridged Broadband Horn Antenna | Schwarzbeck   | BBHA 9120 D            | 01911      | /                | 2024.07.08       |
| 2   | TRILOG Broadband Antenna             | Schwarzbeck   | VULB 9168              | 00869      | /                | 2024.07.08       |
| 3   | Amplifier                            | Agilent       | 8449B                  | 3008A01838 | /                | 2024.07.05       |
| 4   | Amplifier                            | HP            | 8447E                  | 2945A02747 | /                | 2024.07.05       |
| 5   | EMI TEST RECEIVER                    | ROHDE&SCHWARZ | ESCI                   | 100428/003 | V4.42.SP3        | 2024.07.05       |
| 6   | Coaxial cable                        | ETS           | RFC-SNS-100-N MS-80 NI | /          | /                | 2024.07.05       |
| 7   | Coaxial cable                        | ETS           | RFC-SNS-100-N MS-20 NI | /          | /                | 2024.07.05       |
| 8   | Coaxial cable                        | ETS           | RFC-SNS-100-S MS-20 NI | /          | /                | 2024.07.05       |
| 9   | Coaxial cable                        | ETS           | RFC-NNS-100-NMS-300 NI | /          | /                | 2024.07.05       |
| 10  | Communication test set               | Agilent       | E5515C                 | MY50102567 | B.19.07 (E1962B) | 2024.07.05       |
| 11  | Communication test set               | R&S           | CMW500                 | 108058     | V3.5.80          | 2024.07.05       |
| 12  | EZ-EMC                               | Frad          | EMC-con3A1.1           | /          | /                | /                |

## 6. AC POWER LINE CONDUCTED EMISSION

### 6.1 Block Diagram Of Test Setup



### 6.2 Limit

| Table 4 – AC power-line conducted emissions limits |                              |                            |
|--|------------------------------|----------------------------|
| Frequency (MHz)                                    | Conducted limit (dB $\mu$ V) |                            |
|  | Quasi-peak                   | Average                    |
| 0.15 - 0.5   | 66 to 56 <sup>Note 1</sup>   | 56 to 46 <sup>Note 1</sup> |
| 0.5 - 5  | 56                           | 46                         |
| 5 - 30   | 60                           | 50                         |

**Note 1:** The level decreases linearly with the logarithm of the frequency.

\* Decreasing linearly with the logarithm of the frequency

### 6.3 Test procedure

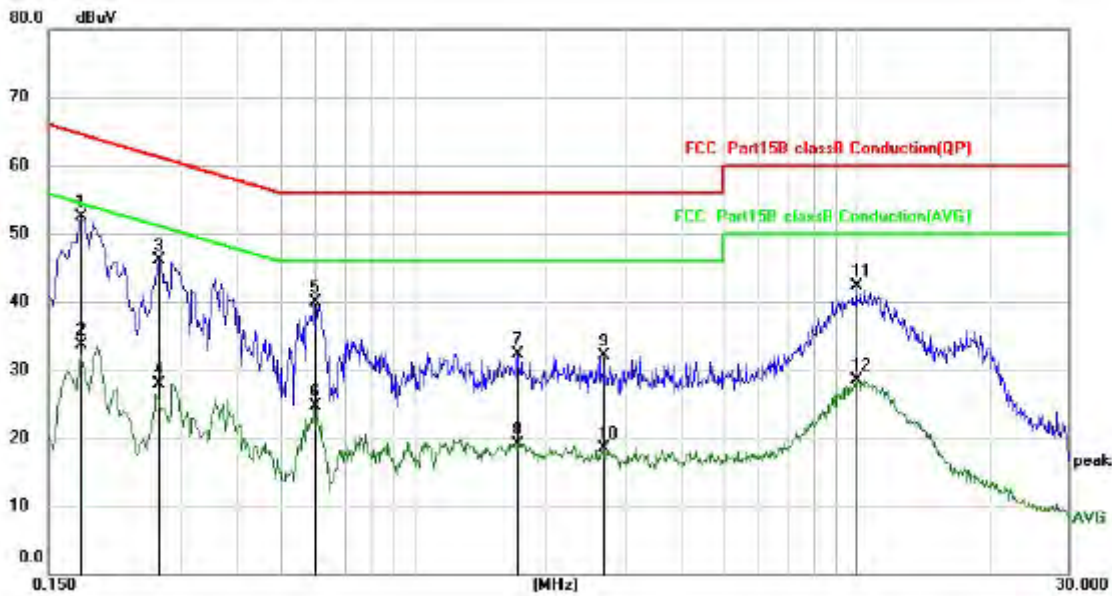
- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50 $\Omega$ /50 $\mu$ H + 5 $\Omega$  linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane.

This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.
- 6) All modes were tested at AC 120V and 240V, only the worst result of AC 120V 60Hz was reported.
- 7) If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.

6.4 Test Result

L: Worst case-GFSK(low channel)

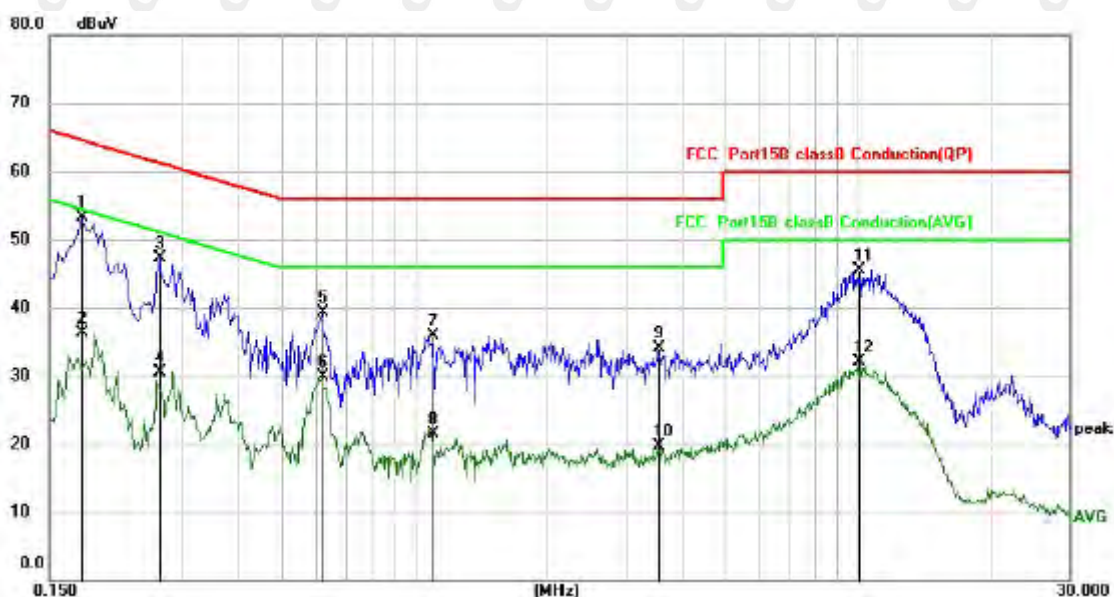


| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1   | *   | 0.1780       | 42.63                    | 9.95                    | 52.58                    | 64.58         | -12.00     | QP       |
| 2   |     | 0.1780       | 23.69                    | 9.95                    | 33.64                    | 54.58         | -20.94     | AVG      |
| 3   |     | 0.2660       | 36.15                    | 9.96                    | 46.11                    | 61.24         | -15.13     | QP       |
| 4   |     | 0.2660       | 17.95                    | 9.96                    | 27.91                    | 51.24         | -23.33     | AVG      |
| 5   |     | 0.5980       | 29.97                    | 10.00                   | 39.97                    | 56.00         | -16.03     | QP       |
| 6   |     | 0.5980       | 14.77                    | 10.00                   | 24.77                    | 46.00         | -21.23     | AVG      |
| 7   |     | 1.7220       | 22.27                    | 10.07                   | 32.34                    | 56.00         | -23.66     | QP       |
| 8   |     | 1.7220       | 9.08                     | 10.07                   | 19.15                    | 46.00         | -26.85     | AVG      |
| 9   |     | 2.6900       | 22.01                    | 10.16                   | 32.17                    | 56.00         | -23.83     | QP       |
| 10  |     | 2.6900       | 8.36                     | 10.16                   | 18.52                    | 46.00         | -27.48     | AVG      |
| 11  |     | 9.9900       | 31.73                    | 10.58                   | 42.31                    | 60.00         | -17.69     | QP       |
| 12  |     | 9.9900       | 18.00                    | 10.58                   | 28.58                    | 50.00         | -21.42     | AVG      |

Remark:

Factor = Cable loss + LISN factor, Margin = Measurement – Limit

**N: Worst case-GFSK(low channel)**



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1   | *   | 0.1780       | 43.27                    | 9.95                    | 53.22                    | 64.58         | -11.36     | QP       |
| 2   |     | 0.1780       | 26.32                    | 9.95                    | 36.27                    | 54.58         | -18.31     | AVG      |
| 3   |     | 0.2660       | 37.27                    | 9.96                    | 47.23                    | 61.24         | -14.01     | QP       |
| 4   |     | 0.2660       | 20.46                    | 9.96                    | 30.42                    | 51.24         | -20.82     | AVG      |
| 5   |     | 0.6180       | 29.38                    | 10.01                   | 39.39                    | 56.00         | -16.61     | QP       |
| 6   |     | 0.6180       | 19.97                    | 10.01                   | 29.98                    | 46.00         | -16.02     | AVG      |
| 7   |     | 1.0940       | 25.80                    | 10.02                   | 35.82                    | 56.00         | -20.18     | QP       |
| 8   |     | 1.0940       | 11.54                    | 10.02                   | 21.56                    | 46.00         | -24.44     | AVG      |
| 9   |     | 3.5540       | 23.82                    | 10.24                   | 34.06                    | 56.00         | -21.94     | QP       |
| 10  |     | 3.5540       | 9.51                     | 10.24                   | 19.75                    | 46.00         | -26.25     | AVG      |
| 11  |     | 10.0539      | 34.83                    | 10.58                   | 45.41                    | 60.00         | -14.59     | QP       |
| 12  |     | 10.0539      | 21.57                    | 10.58                   | 32.15                    | 50.00         | -17.85     | AVG      |

Remark:

Factor = Cable loss + LISN factor, Margin = Measurement – Limit

## 7. RADIATED SPURIOUS EMISSION

### 7.1 Block Diagram Of Test Setup

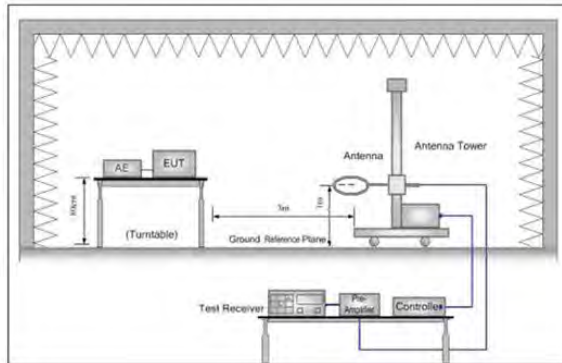


Figure 1. Below 30MHz

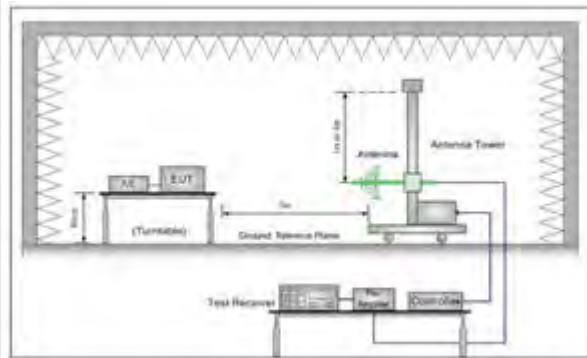


Figure 2. 30MHz to 1GHz

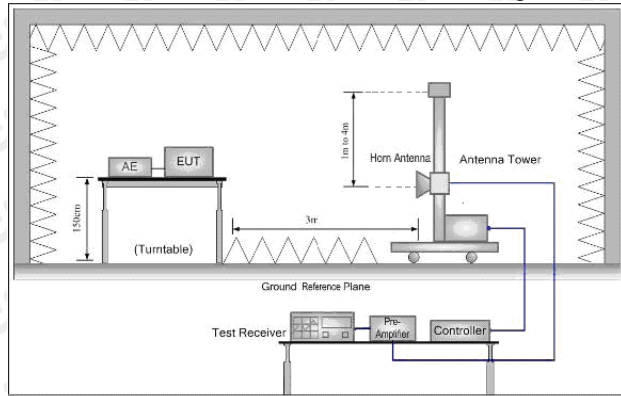


Figure 3. Above 1GHz

### 7.2 Limit

Spurious Emissions:

| Frequency         | Field strength (microvolt/meter) | Limit (dB $\mu$ V/m ) | Remark     | Measurement distance (m) |
|-------------------|----------------------------------|-----------------------|------------|--------------------------|
| 0.009MHz-0.490MHz | 2400/F(kHz)                      | -                     | -          | 300                      |
| 0.490MHz-1.705MHz | 24000/F(kHz)                     | -                     | -          | 30                       |
| 1.705MHz-30MHz    | 30                               | -                     | -          | 30                       |
| 30MHz-88MHz       | 100                              | 40.0                  | Quasi-peak | 3                        |
| 88MHz-216MHz      | 150                              | 43.5                  | Quasi-peak | 3                        |
| 216MHz-960MHz     | 200                              | 46.0                  | Quasi-peak | 3                        |
| 960MHz-1GHz       | 500                              | 54.0                  | Quasi-peak | 3                        |
| Above 1GHz        | 500                              | 54.0                  | Average    | 3                        |

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

7.3 Test procedure

**Below 1GHz test procedure as below:**

- a.The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d.For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f.If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**Above 1GHz test procedure as below:**

- g.Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter( Above 18GHz the distance is 1 meter and table is 1.5 meter).
- h.Test the EUT in the lowest channel ,the middle channel ,the Highest channel
- i.Repeat above procedures until all frequencies measured was complete.
- j. Full battery is used during test

Receiver set:

| Frequency         | Detector   | RBW     | VBW    | Remark     |
|-------------------|------------|---------|--------|------------|
| 0.009MHz-0.090MHz | Peak       | 10kHz   | 30KHz  | Peak       |
| 0.009MHz-0.090MHz | Average    | 10kHz   | 30KHz  | Average    |
| 0.090MHz-0.110MHz | Quasi-peak | 10kHz   | 30KHz  | Quasi-peak |
| 0.110MHz-0.490MHz | Peak       | 10kHz   | 30KHz  | Peak       |
| 0.110MHz-0.490MHz | Average    | 10kHz   | 30KHz  | Average    |
| 0.490MHz -30MHz   | Quasi-peak | 10kHz   | 30kHz  | Quasi-peak |
| 30MHz-1GHz        | Quasi-peak | 120 kHz | 300KHz | Quasi-peak |
| Above 1GHz        | Peak       | 1MHz    | 3MHz   | Peak       |
|                   | Peak       | 1MHz    | 10Hz   | Average    |



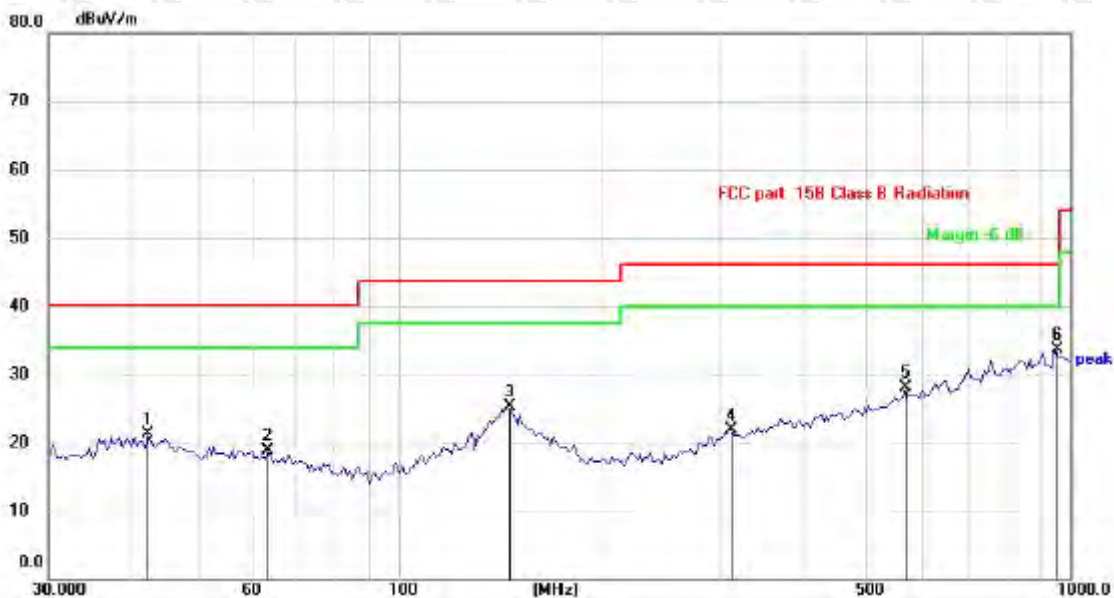
7.4 Test Result

**Left ear:**

Below 1GHz Test Results:

Antenna polarity: H

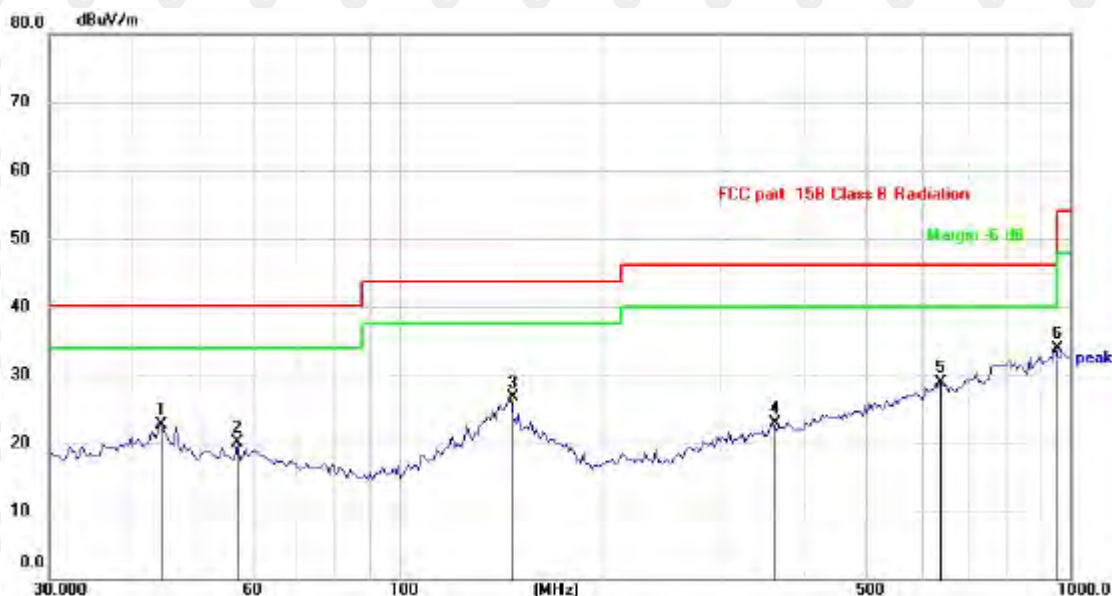
Worst case-GFSK(low channel)



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dB/m | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|---------------|------------|----------|
| 1   |     | 42.2281      | 26.54                    | -5.19                   | 21.35                      | 40.00         | -18.65     | QP       |
| 2   |     | 63.7588      | 26.12                    | -7.23                   | 18.89                      | 40.00         | -21.11     | QP       |
| 3   |     | 145.3506     | 29.13                    | -3.74                   | 25.39                      | 43.50         | -18.11     | QP       |
| 4   |     | 311.6326     | 26.26                    | -4.44                   | 21.82                      | 46.00         | -24.18     | QP       |
| 5   |     | 570.6100     | 26.27                    | 1.87                    | 28.14                      | 46.00         | -17.86     | QP       |
| 6   | *   | 948.7610     | 26.38                    | 7.36                    | 33.74                      | 46.00         | -12.26     | QP       |

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Measurement- Limit

Antenna polarity: V  
 Worst case-GFSK(low channel)



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dB/m | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|---------------|------------|----------|
| 1   |     | 43.7352      | 28.20                    | -5.47                   | 22.73                      | 40.00         | -17.27     | QP       |
| 2   |     | 57.3923      | 26.89                    | -6.71                   | 20.18                      | 40.00         | -19.82     | QP       |
| 3   |     | 146.6304     | 30.19                    | -3.58                   | 26.61                      | 43.50         | -16.89     | QP       |
| 4   |     | 361.7139     | 26.08                    | -3.14                   | 22.94                      | 46.00         | -23.06     | QP       |
| 5   |     | 639.4888     | 25.54                    | 3.39                    | 28.93                      | 46.00         | -17.07     | QP       |
| 6   | *   | 948.7610     | 26.57                    | 7.36                    | 33.93                      | 46.00         | -12.07     | QP       |

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Measurement- Limit

**Right ear:**

Below 1GHz Test Results:

Antenna polarity: H

Worst case-GFSK(low channel)

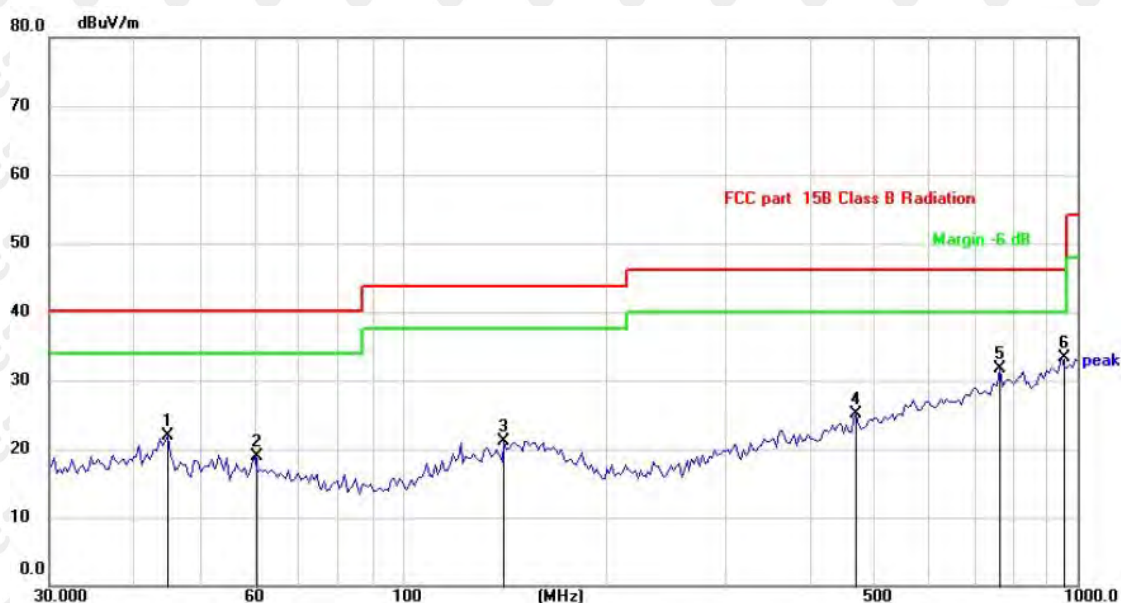
80.0 dBuV/m



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dB/m | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|---------------|------------|----------|
| 1   |     | 41.1320      | 25.43                    | -4.98                   | 20.45                      | 40.00         | -19.55     | QP       |
| 2   |     | 62.6507      | 25.34                    | -7.08                   | 18.26                      | 40.00         | -21.74     | QP       |
| 3   |     | 157.2829     | 25.75                    | -3.43                   | 22.32                      | 43.50         | -21.18     | QP       |
| 4   |     | 325.5958     | 27.14                    | -4.08                   | 23.06                      | 46.00         | -22.94     | QP       |
| 5   |     | 522.7180     | 26.02                    | 0.63                    | 26.65                      | 46.00         | -19.35     | QP       |
| 6   | *   | 839.1818     | 25.72                    | 6.60                    | 32.32                      | 46.00         | -13.68     | QP       |

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Measurement- Limit

Antenna polarity: V  
 Worst case-GFSK(low channel)



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dB/m | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|---------------|------------|----------|
| 1   |     | 44.9006      | 27.55                    | -5.69                   | 21.86                      | 40.00         | -18.14     | QP       |
| 2   |     | 60.4919      | 25.77                    | -6.79                   | 18.98                      | 40.00         | -21.02     | QP       |
| 3   |     | 141.5777     | 25.27                    | -4.20                   | 21.07                      | 43.50         | -22.43     | QP       |
| 4   |     | 470.5232     | 25.65                    | -0.61                   | 25.04                      | 46.00         | -20.96     | QP       |
| 5   |     | 768.7481     | 25.89                    | 5.84                    | 31.73                      | 46.00         | -14.27     | QP       |
| 6   | *   | 948.7610     | 26.01                    | 7.36                    | 33.37                      | 46.00         | -12.63     | QP       |

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Measurement- Limit

**Left ear:**

Above 1 GHz Test Results:

CH Low (2402MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|----------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)         | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4804      | 57.63          | -3.65  | 53.98          | 74.00    | -20.02 | peak          |
| 4804      | 48.73          | -3.65  | 45.08          | 54.00    | -8.92  | AVG           |
| 7206      | 61.29          | -0.95  | 60.34          | 74.00    | -13.66 | peak          |
| 7206      | 41.31          | -0.95  | 40.36          | 54.00    | -13.64 | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|----------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)         | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4804      | 56.62          | -3.65  | 52.97          | 74.00    | -21.03 | peak          |
| 4804      | 48.76          | -3.65  | 45.11          | 54.00    | -8.89  | AVG           |
| 7206      | 59.37          | -0.95  | 58.42          | 74.00    | -15.58 | peak          |
| 7206      | 42.97          | -0.95  | 42.02          | 54.00    | -11.98 | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

CH Middle (2441MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|----------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBµV)         | (dB)   | (dBµV/m)       | (dBµV/m) | (dB)   |               |
| 4882.00   | 58.72          | -3.54  | 55.18          | 74.00    | -18.82 | peak          |
| 4882.00   | 47.68          | -3.54  | 44.14          | 54.00    | -9.86  | AVG           |
| 7323.00   | 57.56          | -0.81  | 56.75          | 74.00    | -17.25 | peak          |
| 7323.00   | 44.12          | -0.81  | 43.31          | 54.00    | -10.69 | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|----------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBµV)         | (dB)   | (dBµV/m)       | (dBµV/m) | (dB)   |               |
| 4882.00   | 57.01          | -3.54  | 53.47          | 74.00    | -20.53 | peak          |
| 4882.00   | 48.65          | -3.54  | 45.11          | 54.00    | -8.89  | AVG           |
| 7323.00   | 56.77          | -0.81  | 55.96          | 74.00    | -18.04 | peak          |
| 7323.00   | 42.79          | -0.81  | 41.98          | 54.00    | -12.02 | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

CH High (2480MHz)  
Horizontal:

| Frequency<br>(MHz) | Reading Result<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Detector Type |
|--------------------|--------------------------------|----------------|----------------------------------|--------------------------|----------------|---------------|
| 4960               | 57.34                          | -3.43          | 53.91                            | 74.00                    | -20.09         | peak          |
| 4960               | 47.56                          | -3.44          | 44.12                            | 54.00                    | -9.88          | AVG           |
| 7440               | 58.68                          | -0.77          | 57.91                            | 74.00                    | -16.09         | peak          |
| 7440               | 41.60                          | -0.77          | 40.83                            | 54.00                    | -13.17         | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency<br>(MHz) | Reading Result<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Detector Type |
|--------------------|--------------------------------|----------------|----------------------------------|--------------------------|----------------|---------------|
| 4960               | 59.03                          | -3.43          | 55.60                            | 74.00                    | -18.40         | peak          |
| 4960               | 47.42                          | -3.44          | 43.98                            | 54.00                    | -10.02         | AVG           |
| 7440               | 58.75                          | -0.77          | 57.98                            | 74.00                    | -16.02         | peak          |
| 7440               | 41.04                          | -0.77          | 40.27                            | 54.00                    | -13.73         | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report

**Restricted bands around fundamental frequency (Radiated)**

hopping  
 Operation Mode: TX CH Low (2402MHz)  
 Horizontal (Worst case-GFSK)

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2310.00   | 57.92         | -5.81  | 52.11          | 74.00    | -21.89 | peak          |
| 2310.00   | /             | -5.81  | /              | 54.00    | /      | AVG           |
| 2390.00   | 55.51         | -5.84  | 49.67          | 74.00    | -24.33 | peak          |
| 2390.00   | /             | -5.84  | /              | 54.00    | /      | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2310.00   | 57.50         | -5.81  | 51.69          | 74.00    | -22.31 | peak          |
| 2310.00   | /             | -5.81  | /              | 54.00    | /      | AVG           |
| 2390.00   | 55.84         | -5.84  | 50.00          | 74.00    | -24.00 | peak          |
| 2390.00   | /             | -5.84  | /              | 54.00    | /      | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

When the peak value is smaller than the AVG limit, AVG is not reflected.



Operation Mode: TX CH High (2480MHz)  
Horizontal (Worst case-GFSK)

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50   | 54.93         | -5.81  | 49.12          | 74.00    | -24.88 | peak          |
| 2483.50   | /             | -5.81  | /              | 54.00    | /      | AVG           |
| 2500.00   | 53.39         | -6.06  | 47.33          | 74.00    | -26.67 | peak          |
| 2500.00   | /             | -6.06  | /              | 54.00    | /      | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50   | 56.09         | -5.81  | 50.28          | 74.00    | -23.72 | peak          |
| 2483.50   | /             | -5.81  | /              | 54.00    | /      | AVG           |
| 2500.00   | 53.87         | -6.06  | 47.81          | 74.00    | -26.19 | peak          |
| 2500.00   | /             | -6.06  | /              | 54.00    | /      | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

When the peak value is smaller than the AVG limit, AVG is not reflected.

NO hopping

Operation Mode: TX CH Low (2402MHz)  
Horizontal (Worst case-GFSK)

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2310.00            | 56.78                   | -5.81          | 50.97                      | 74.00              | -23.03         | peak          |
| 2310.00            | /                       | -5.81          | /                          | 54.00              | /              | AVG           |
| 2390.00            | 53.50                   | -5.84          | 47.66                      | 74.00              | -26.34         | peak          |
| 2390.00            | /                       | -5.84          | /                          | 54.00              | /              | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2310.00            | 54.11                   | -5.81          | 48.30                      | 74.00              | -25.70         | peak          |
| 2310.00            | /                       | -5.81          | /                          | 54.00              | /              | AVG           |
| 2390.00            | 52.74                   | -5.84          | 46.90                      | 74.00              | -27.10         | peak          |
| 2390.00            | /                       | -5.84          | /                          | 54.00              | /              | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

When the peak value is smaller than the AVG limit, AVG is not reflected.

Operation Mode: TX CH High (2480MHz)  
Horizontal (Worst case-GFSK)

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2483.50            | 55.75                   | -5.81          | 49.94                      | 74.00              | -24.06         | peak          |
| 2483.50            | /                       | -5.81          | /                          | 54.00              | /              | AVG           |
| 2500.00            | 55.94                   | -6.06          | 49.88                      | 74.00              | -24.12         | peak          |
| 2500.00            | /                       | -6.06          | /                          | 54.00              | /              | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2483.50            | 56.31                   | -5.81          | 50.50                      | 74.00              | -23.50         | peak          |
| 2483.50            | /                       | -5.81          | /                          | 54.00              | /              | AVG           |
| 2500.00            | 54.99                   | -6.06          | 48.93                      | 74.00              | -25.07         | peak          |
| 2500.00            | /                       | -6.06          | /                          | 54.00              | /              | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

When the peak value is smaller than the AVG limit, AVG is not reflected.

Right ear:  
Above 1 GHz Test Results:

CH Low (2402MHz)  
Horizontal:

| Frequency<br>(MHz) | Reading Result<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|--------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 4804               | 56.64                    | -3.65          | 52.99                      | 74.00              | -21.01         | peak          |
| 4804               | 49.31                    | -3.65          | 45.66                      | 54.00              | -8.34          | AVG           |
| 7206               | 60.93                    | -0.95          | 59.98                      | 74.00              | -14.02         | peak          |
| 7206               | 42.10                    | -0.95          | 41.15                      | 54.00              | -12.85         | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency<br>(MHz) | Reading Result<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|--------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 4804               | 56.69                    | -3.65          | 53.04                      | 74.00              | -20.96         | peak          |
| 4804               | 48.93                    | -3.65          | 45.28                      | 54.00              | -8.72          | AVG           |
| 7206               | 59.72                    | -0.95          | 58.77                      | 74.00              | -15.23         | peak          |
| 7206               | 40.52                    | -0.95          | 39.57                      | 54.00              | -14.43         | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

CH Middle (2441MHz)

Horizontal:

| Frequency | Reading Result | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|----------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)         | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4882.00   | 58.97          | -3.54  | 55.43          | 74.00    | -18.57 | peak          |
| 4882.00   | 47.97          | -3.54  | 44.43          | 54.00    | -9.57  | AVG           |
| 7323.00   | 56.62          | -0.81  | 55.81          | 74.00    | -18.19 | peak          |
| 7323.00   | 43.57          | -0.81  | 42.76          | 54.00    | -11.24 | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency | Reading Result | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|----------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)         | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 4882.00   | 56.90          | -3.54  | 53.36          | 74.00    | -20.64 | peak          |
| 4882.00   | 49.58          | -3.54  | 46.04          | 54.00    | -7.96  | AVG           |
| 7323.00   | 57.64          | -0.81  | 56.83          | 74.00    | -17.17 | peak          |
| 7323.00   | 41.23          | -0.81  | 40.42          | 54.00    | -13.58 | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

CH High (2480MHz)  
Horizontal:

| Frequency<br>(MHz) | Reading Result<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|--------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 4960               | 57.48                    | -3.43          | 54.05                      | 74.00              | -19.95         | peak          |
| 4960               | 48.97                    | -3.44          | 45.53                      | 54.00              | -8.47          | AVG           |
| 7440               | 59.95                    | -0.77          | 59.18                      | 74.00              | -14.82         | peak          |
| 7440               | 41.39                    | -0.77          | 40.62                      | 54.00              | -13.38         | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency<br>(MHz) | Reading Result<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|--------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 4960               | 57.64                    | -3.43          | 54.21                      | 74.00              | -19.79         | peak          |
| 4960               | 49.88                    | -3.44          | 46.44                      | 54.00              | -7.56          | AVG           |
| 7440               | 60.52                    | -0.77          | 59.75                      | 74.00              | -14.25         | peak          |
| 7440               | 39.84                    | -0.77          | 39.07                      | 54.00              | -14.93         | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report

**Restricted bands around fundamental frequency (Radiated)**

hopping

Operation Mode: TX CH Low (2402MHz)

Horizontal (Worst case-GFSK)

| Frequency<br>(MHz) | Meter Reading<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Detector<br>Type |
|--------------------|-------------------------------|----------------|----------------------------------|--------------------------|----------------|------------------|
| 2310.00            | 56.95                         | -5.81          | 51.14                            | 74.00                    | -22.86         | peak             |
| 2310.00            | /                             | -5.81          | /                                | 54.00                    | /              | AVG              |
| 2390.00            | 55.13                         | -5.84          | 49.29                            | 74.00                    | -24.71         | peak             |
| 2390.00            | /                             | -5.84          | /                                | 54.00                    | /              | AVG              |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency<br>(MHz) | Meter Reading<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Detector<br>Type |
|--------------------|-------------------------------|----------------|----------------------------------|--------------------------|----------------|------------------|
| 2310.00            | 55.90                         | -5.81          | 50.09                            | 74.00                    | -23.91         | peak             |
| 2310.00            | /                             | -5.81          | /                                | 54.00                    | /              | AVG              |
| 2390.00            | 55.41                         | -5.84          | 49.57                            | 74.00                    | -24.43         | peak             |
| 2390.00            | /                             | -5.84          | /                                | 54.00                    | /              | AVG              |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

When the peak value is smaller than the AVG limit, AVG is not reflected.

Operation Mode: TX CH High (2480MHz)  
Horizontal (Worst case-GFSK)

| Frequency | Meter Reading | Factor | Emission Level | Limits         | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------------|--------|---------------|
| (MHz)     | (dB $\mu$ V)  | (dB)   | (dB $\mu$ V/m) | (dB $\mu$ V/m) | (dB)   |               |
| 2483.50   | 55.44         | -5.81  | 49.63          | 74.00          | -24.37 | peak          |
| 2483.50   | /             | -5.81  | /              | 54.00          | /      | AVG           |
| 2500.00   | 53.67         | -6.06  | 47.61          | 74.00          | -26.39 | peak          |
| 2500.00   | /             | -6.06  | /              | 54.00          | /      | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits         | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------------|--------|---------------|
| (MHz)     | (dB $\mu$ V)  | (dB)   | (dB $\mu$ V/m) | (dB $\mu$ V/m) | (dB)   |               |
| 2483.50   | 57.62         | -5.81  | 51.81          | 74.00          | -22.19 | peak          |
| 2483.50   | /             | -5.81  | /              | 54.00          | /      | AVG           |
| 2500.00   | 54.42         | -6.06  | 48.36          | 74.00          | -25.64 | peak          |
| 2500.00   | /             | -6.06  | /              | 54.00          | /      | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

When the peak value is smaller than the AVG limit, AVG is not reflected.



NO hopping

Operation Mode: TX CH Low (2402MHz)  
Horizontal (Worst case-GFSK)

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2310.00            | 55.21                   | -5.81          | 49.40                      | 74.00              | -24.60         | peak          |
| 2310.00            | /                       | -5.81          | /                          | 54.00              | /              | AVG           |
| 2390.00            | 55.74                   | -5.84          | 49.90                      | 74.00              | -24.10         | peak          |
| 2390.00            | /                       | -5.84          | /                          | 54.00              | /              | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency<br>(MHz) | Meter Reading<br>(dBμV) | Factor<br>(dB) | Emission Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector Type |
|--------------------|-------------------------|----------------|----------------------------|--------------------|----------------|---------------|
| 2310.00            | 54.23                   | -5.81          | 48.42                      | 74.00              | -25.58         | peak          |
| 2310.00            | /                       | -5.81          | /                          | 54.00              | /              | AVG           |
| 2390.00            | 55.50                   | -5.84          | 49.66                      | 74.00              | -24.34         | peak          |
| 2390.00            | /                       | -5.84          | /                          | 54.00              | /              | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

When the peak value is smaller than the AVG limit, AVG is not reflected.

Operation Mode: TX CH High (2480MHz)  
Horizontal (Worst case-GFSK)

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50   | 56.63         | -5.81  | 50.82          | 74.00    | -23.18 | peak          |
| 2483.50   | /             | -5.81  | /              | 54.00    | /      | AVG           |
| 2500.00   | 54.95         | -6.06  | 48.89          | 74.00    | -25.11 | peak          |
| 2500.00   | /             | -6.06  | /              | 54.00    | /      | AVG           |

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

| Frequency | Meter Reading | Factor | Emission Level | Limits   | Margin | Detector Type |
|-----------|---------------|--------|----------------|----------|--------|---------------|
| (MHz)     | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |               |
| 2483.50   | 55.91         | -5.81  | 50.10          | 74.00    | -23.90 | peak          |
| 2483.50   | /             | -5.81  | /              | 54.00    | /      | AVG           |
| 2500.00   | 55.06         | -6.06  | 49.00          | 74.00    | -25.00 | peak          |
| 2500.00   | /             | -6.06  | /              | 54.00    | /      | AVG           |

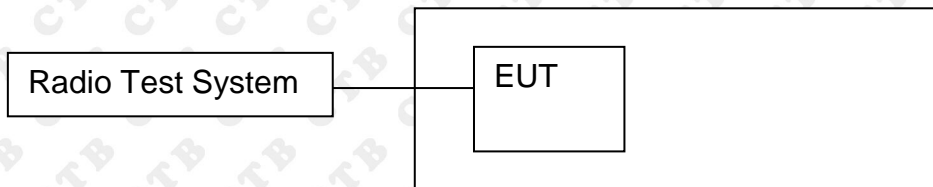
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

When the peak value is smaller than the AVG limit, AVG is not reflected.

## 8. BAND EDGE AND RF CONDUCTED SPURIOUS EMISSIONS

### 8.1 Block Diagram Of Test Setup



### 8.2 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### 8.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:

Below 30MHz:

RBW = 100kHz, VBW = 300kHz, Sweep = auto

Detector function = peak, Trace = max hold

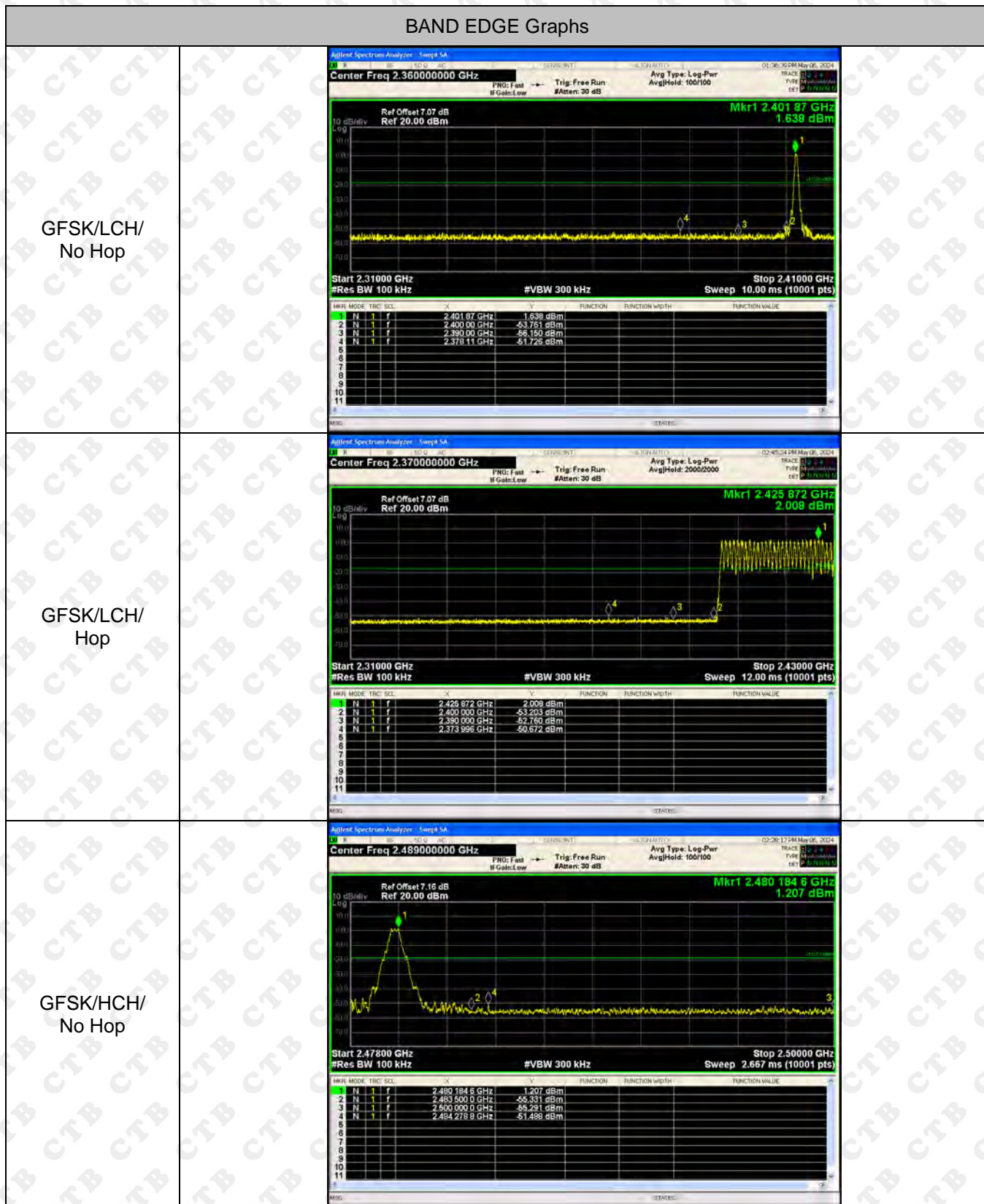
Above 30MHz:

RBW = 100KHz, VBW = 300KHz, Sweep = auto

Detector function = peak, Trace = max hold

## 8.4 Test Result

Left ear:



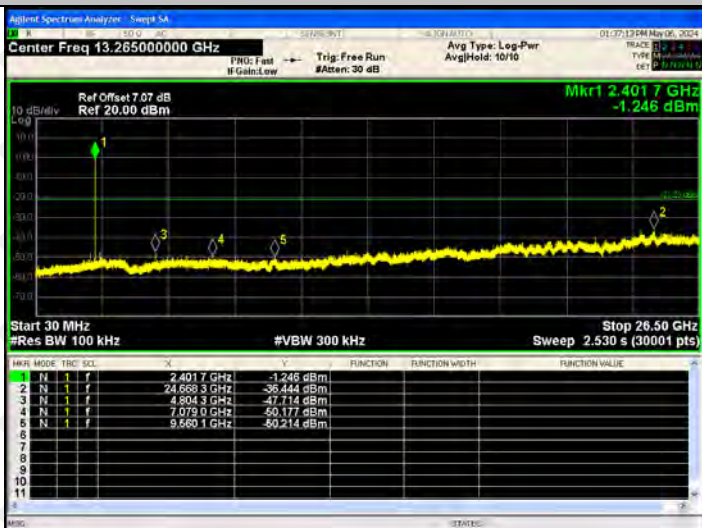
| <p>GFSK/HCH/<br/>Hop</p>                       | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.468750000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.44086875 GHz<br/>1.810 dBm</p> <p>Start 2.43750 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 6.000 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.44086875 GHz</td> <td>1.810 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.48350000 GHz</td> <td>-53.588 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.49000000 GHz</td> <td>-53.591 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.48864375 GHz</td> <td>-50.950 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR | MODE | TRC            | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.44086875 GHz | 1.810 dBm |  |  |  | 2 | N | 1 | f | 2.48350000 GHz | -53.588 dBm |  |  |  | 3 | N | 1 | f | 2.49000000 GHz | -53.591 dBm |  |  |  | 4 | N | 1 | f | 2.48864375 GHz | -50.950 dBm |  |  |  |
|--|---|-----|------|----------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|----------------|-----------|--|--|--|---|---|---|---|----------------|-------------|--|--|--|---|---|---|---|----------------|-------------|--|--|--|---|---|---|---|----------------|-------------|--|--|--|
| MKR  | MODE  | TRC | SCL  | X              | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 1  | N   | 1   | f    | 2.44086875 GHz | 1.810 dBm   |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 2  | N   | 1   | f    | 2.48350000 GHz | -53.588 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 3  | N   | 1   | f    | 2.49000000 GHz | -53.591 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 4  | N   | 1   | f    | 2.48864375 GHz | -50.950 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| <p><math>\pi/4</math>DQPSK/LCH/<br/>No Hop</p> | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.360000000 GHz</p> <p>Ref Offset 7.07 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.402000 GHz<br/>0.573 dBm</p> <p>Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.41000 GHz Sweep 10.00 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.402000 GHz</td> <td>0.573 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.400000 GHz</td> <td>-55.800 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.399000 GHz</td> <td>-55.735 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.35369 GHz</td> <td>-52.047 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>            | MKR | MODE | TRC            | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.402000 GHz   | 0.573 dBm |  |  |  | 2 | N | 1 | f | 2.400000 GHz   | -55.800 dBm |  |  |  | 3 | N | 1 | f | 2.399000 GHz   | -55.735 dBm |  |  |  | 4 | N | 1 | f | 2.35369 GHz    | -52.047 dBm |  |  |  |
| MKR  | MODE  | TRC | SCL  | X              | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 1  | N   | 1   | f    | 2.402000 GHz   | 0.573 dBm   |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 2  | N   | 1   | f    | 2.400000 GHz   | -55.800 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 3  | N   | 1   | f    | 2.399000 GHz   | -55.735 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 4  | N   | 1   | f    | 2.35369 GHz    | -52.047 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| <p><math>\pi/4</math>DQPSK/LCH/<br/>Hop</p>    | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.370000000 GHz</p> <p>Ref Offset 7.07 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.414868 GHz<br/>1.843 dBm</p> <p>Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.43000 GHz Sweep 12.00 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.414868 GHz</td> <td>1.843 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.400000 GHz</td> <td>-52.656 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.350000 GHz</td> <td>-53.561 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.370338 GHz</td> <td>-50.787 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>           | MKR | MODE | TRC            | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.414868 GHz   | 1.843 dBm |  |  |  | 2 | N | 1 | f | 2.400000 GHz   | -52.656 dBm |  |  |  | 3 | N | 1 | f | 2.350000 GHz   | -53.561 dBm |  |  |  | 4 | N | 1 | f | 2.370338 GHz   | -50.787 dBm |  |  |  |
| MKR  | MODE  | TRC | SCL  | X              | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 1  | N   | 1   | f    | 2.414868 GHz   | 1.843 dBm   |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 2  | N   | 1   | f    | 2.400000 GHz   | -52.656 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 3  | N   | 1   | f    | 2.350000 GHz   | -53.561 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |
| 4  | N   | 1   | f    | 2.370338 GHz   | -50.787 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |   |   |   |   |                |             |  |  |  |

| <p><math>\pi/4</math>DQPSK/HCH/<br/>No Hop</p> | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.489000000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.4801758 GHz<br/>0.778 dBm</p> <p>Start 2.47800 GHz<br/>#Res BW 100 kHz</p> <p>#VBW 300 kHz<br/>Sweep 2.667 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4801758 GHz</td> <td>0.778 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4835000 GHz</td> <td>-56.832 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4900000 GHz</td> <td>-55.481 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4959830 GHz</td> <td>-51.489 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>   | MKR | MODE | TRC            | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.4801758 GHz  | 0.778 dBm |  |  |  | 2 | N | 1 | f | 2.4835000 GHz | -56.832 dBm |  |  |  | 3 | N | 1 | f | 2.4900000 GHz | -55.481 dBm |  |  |  | 4 | N | 1 | f | 2.4959830 GHz | -51.489 dBm |  |  |  |
|--|--|-----|------|----------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|----------------|-----------|--|--|--|---|---|---|---|---------------|-------------|--|--|--|---|---|---|---|---------------|-------------|--|--|--|---|---|---|---|---------------|-------------|--|--|--|
| MKR  | MODE   | TRC | SCL  | X              | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 1  | N  | 1   | f    | 2.4801758 GHz  | 0.778 dBm   |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 2  | N  | 1   | f    | 2.4835000 GHz  | -56.832 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 3  | N  | 1   | f    | 2.4900000 GHz  | -55.481 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 4  | N  | 1   | f    | 2.4959830 GHz  | -51.489 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| <p><math>\pi/4</math>DQPSK/HCH/<br/>Hop</p>    | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.468750000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.44586875 GHz<br/>1.474 dBm</p> <p>Start 2.43750 GHz<br/>#Res BW 100 kHz</p> <p>#VBW 300 kHz<br/>Sweep 6.000 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.44586875 GHz</td> <td>1.474 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4635000 GHz</td> <td>-53.293 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.5000000 GHz</td> <td>-53.089 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4939250 GHz</td> <td>-50.393 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR | MODE | TRC            | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.44586875 GHz | 1.474 dBm |  |  |  | 2 | N | 1 | f | 2.4635000 GHz | -53.293 dBm |  |  |  | 3 | N | 1 | f | 2.5000000 GHz | -53.089 dBm |  |  |  | 4 | N | 1 | f | 2.4939250 GHz | -50.393 dBm |  |  |  |
| MKR  | MODE   | TRC | SCL  | X              | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 1  | N  | 1   | f    | 2.44586875 GHz | 1.474 dBm   |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 2  | N  | 1   | f    | 2.4635000 GHz  | -53.293 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 3  | N  | 1   | f    | 2.5000000 GHz  | -53.089 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 4  | N  | 1   | f    | 2.4939250 GHz  | -50.393 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| <p>8DPSK/LCH/No<br/>Hop</p>                    | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.360000000 GHz</p> <p>Ref Offset 7.07 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.40219 GHz<br/>1.939 dBm</p> <p>Start 2.31000 GHz<br/>#Res BW 100 kHz</p> <p>#VBW 300 kHz<br/>Sweep 10.00 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.40219 GHz</td> <td>1.939 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.40000 GHz</td> <td>-52.666 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.39000 GHz</td> <td>-54.274 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.35780 GHz</td> <td>-51.122 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>             | MKR | MODE | TRC            | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.40219 GHz    | 1.939 dBm |  |  |  | 2 | N | 1 | f | 2.40000 GHz   | -52.666 dBm |  |  |  | 3 | N | 1 | f | 2.39000 GHz   | -54.274 dBm |  |  |  | 4 | N | 1 | f | 2.35780 GHz   | -51.122 dBm |  |  |  |
| MKR  | MODE   | TRC | SCL  | X              | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 1  | N  | 1   | f    | 2.40219 GHz    | 1.939 dBm   |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 2  | N  | 1   | f    | 2.40000 GHz    | -52.666 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 3  | N  | 1   | f    | 2.39000 GHz    | -54.274 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |
| 4  | N  | 1   | f    | 2.35780 GHz    | -51.122 dBm |          |                |                |                |                |   |   |   |   |                |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |

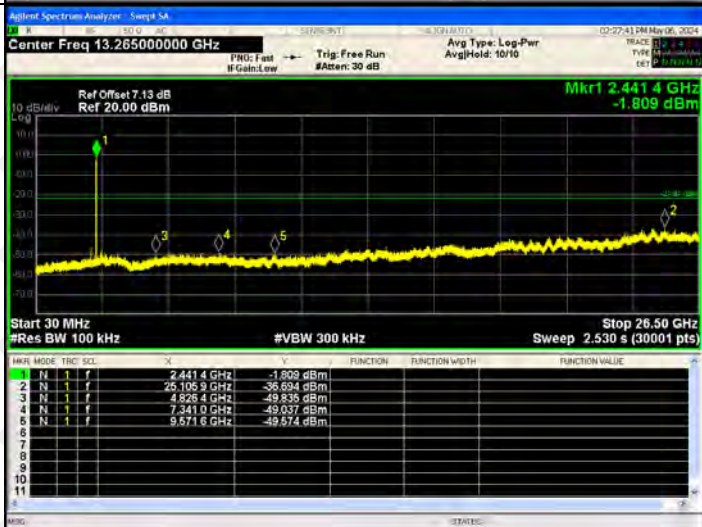
| <p>8DPSK /LCH/Hop</p>    | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Center Freq 2.37000000 GHz</p> <p>Ref Offset 7.67 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.414 184 GHz<br/>1.817 dBm</p> <p>Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.43000 GHz Sweep 12.00 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.414 184 GHz</td> <td>1.817 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.400 000 GHz</td> <td>-52.861 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.390 000 GHz</td> <td>-54.288 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.374 716 GHz</td> <td>-51.029 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>                | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.414 184 GHz    | 1.817 dBm |  |  |  | 2 | N | 1 | f | 2.400 000 GHz    | -52.861 dBm |  |  |  | 3 | N | 1 | f | 2.390 000 GHz    | -54.288 dBm |  |  |  | 4 | N | 1 | f | 2.374 716 GHz    | -51.029 dBm |  |  |  |
|--------------------------|--|-----|------|------------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|------------------|-----------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|
| MKR                      | MODE   | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1                        | N  | 1   | f    | 2.414 184 GHz    | 1.817 dBm   |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2                        | N  | 1   | f    | 2.400 000 GHz    | -52.861 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3                        | N  | 1   | f    | 2.390 000 GHz    | -54.288 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4                        | N  | 1   | f    | 2.374 716 GHz    | -51.029 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| <p>8DPSK /HCH/No Hop</p> | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Center Freq 2.48900000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.480 046 0 GHz<br/>0.938 dBm</p> <p>Start 2.47800 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 2.657 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.480 046 0 GHz</td> <td>0.938 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.483 500 0 GHz</td> <td>-54.667 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.500 000 0 GHz</td> <td>-55.514 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.488 377 4 GHz</td> <td>-49.878 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>      | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.480 046 0 GHz  | 0.938 dBm |  |  |  | 2 | N | 1 | f | 2.483 500 0 GHz  | -54.667 dBm |  |  |  | 3 | N | 1 | f | 2.500 000 0 GHz  | -55.514 dBm |  |  |  | 4 | N | 1 | f | 2.488 377 4 GHz  | -49.878 dBm |  |  |  |
| MKR                      | MODE   | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1                        | N  | 1   | f    | 2.480 046 0 GHz  | 0.938 dBm   |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2                        | N  | 1   | f    | 2.483 500 0 GHz  | -54.667 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3                        | N  | 1   | f    | 2.500 000 0 GHz  | -55.514 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4                        | N  | 1   | f    | 2.488 377 4 GHz  | -49.878 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| <p>8DPSK /HCH/Hop</p>    | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Center Freq 2.46875000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.443 025 00 GHz<br/>1.403 dBm</p> <p>Start 2.43750 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 6.000 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.443 025 00 GHz</td> <td>1.403 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.483 500 00 GHz</td> <td>-52.808 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.500 000 00 GHz</td> <td>-52.114 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.485 100 00 GHz</td> <td>-50.621 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.443 025 00 GHz | 1.403 dBm |  |  |  | 2 | N | 1 | f | 2.483 500 00 GHz | -52.808 dBm |  |  |  | 3 | N | 1 | f | 2.500 000 00 GHz | -52.114 dBm |  |  |  | 4 | N | 1 | f | 2.485 100 00 GHz | -50.621 dBm |  |  |  |
| MKR                      | MODE   | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1                        | N  | 1   | f    | 2.443 025 00 GHz | 1.403 dBm   |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2                        | N  | 1   | f    | 2.483 500 00 GHz | -52.808 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3                        | N  | 1   | f    | 2.500 000 00 GHz | -52.114 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4                        | N  | 1   | f    | 2.485 100 00 GHz | -50.621 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |

RF Conducted Spurious Emissions Graphs

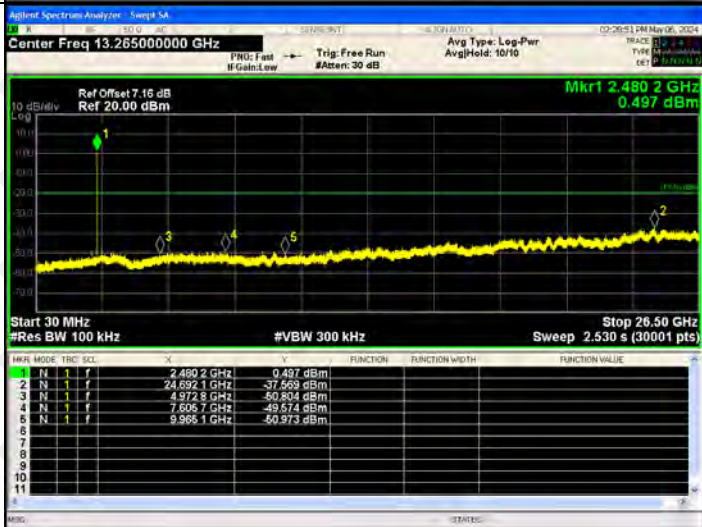
GFSK/LCH



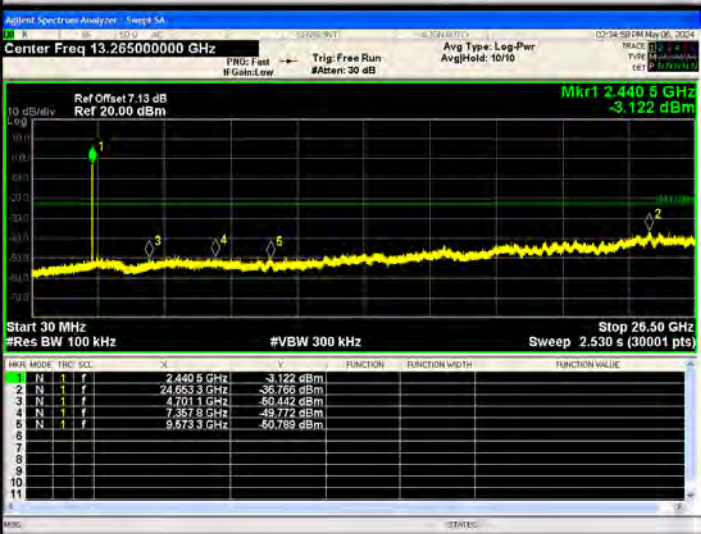
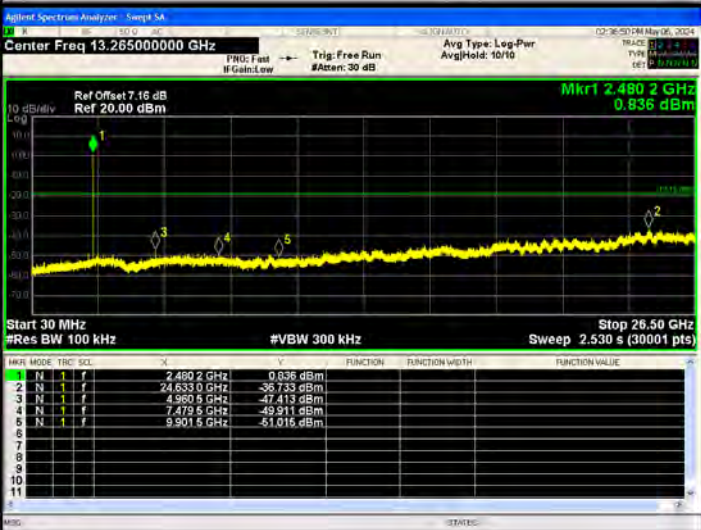
GFSK/MCH

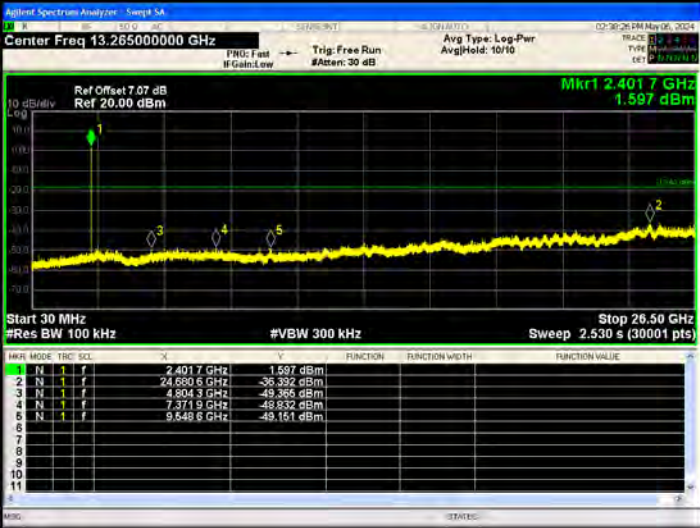
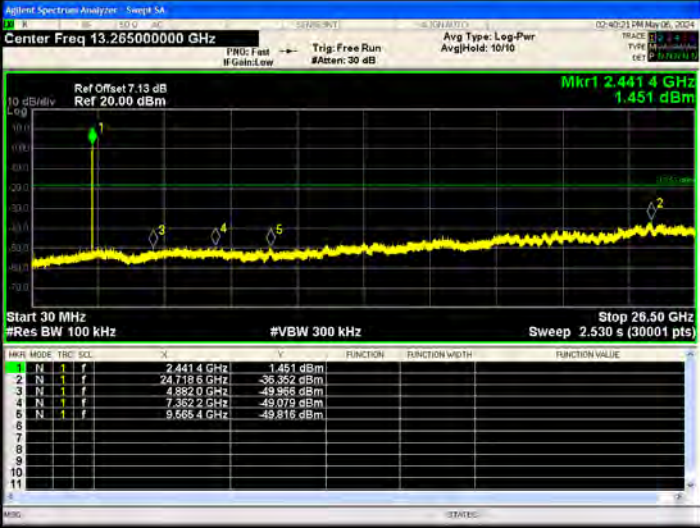
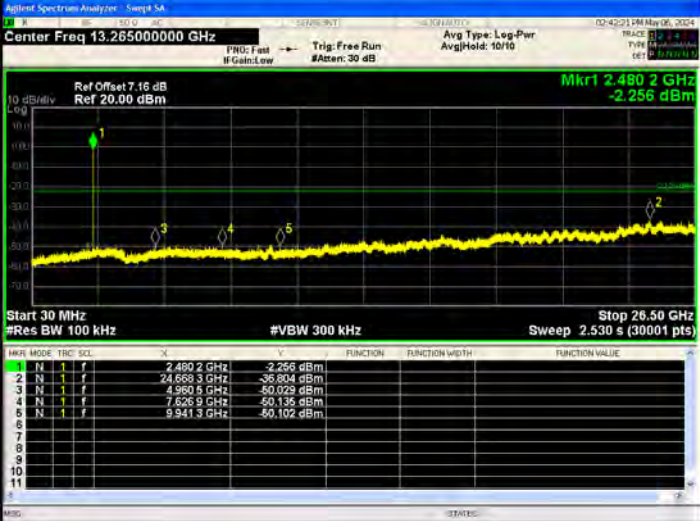


GFSK/HCH





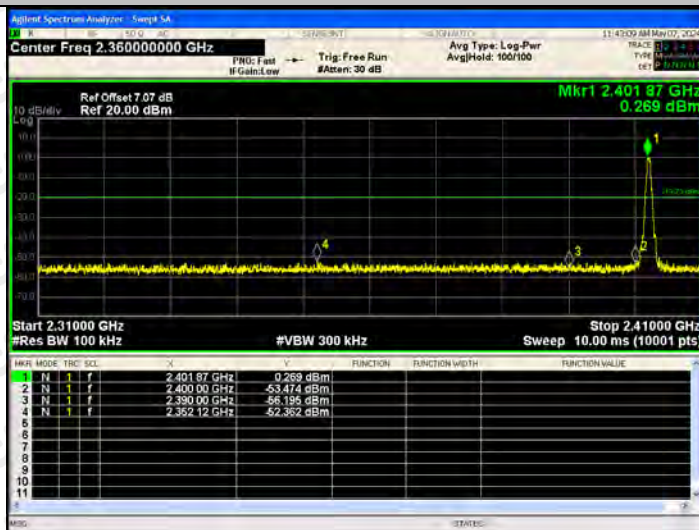
| <p><math>\pi/4</math>DQPSK /LCH</p> |  <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCAL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4017 GHz</td> <td>-2.289 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>25.0999 GHz</td> <td>-35.578 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>4.8043 GHz</td> <td>-49.650 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>7.1354 GHz</td> <td>-49.507 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>N</td> <td>1</td> <td>f</td> <td>9.6574 GHz</td> <td>-50.005 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>  | MKR  | MODE | TRIG        | SCAL        | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.4017 GHz | -2.289 dBm |  |  |  | 2 | N | 1 | f | 25.0999 GHz | -35.578 dBm |  |  |  | 3 | N | 1 | f | 4.8043 GHz | -49.650 dBm |  |  |  | 4 | N | 1 | f | 7.1354 GHz | -49.507 dBm |  |  |  | 5 | N | 1 | f | 9.6574 GHz | -50.005 dBm |  |  |  |
|-------------------------------------|---|------|------|-------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|------------|------------|--|--|--|---|---|---|---|-------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|
| MKR                                 | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 1                                   | N   | 1    | f    | 2.4017 GHz  | -2.289 dBm  |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 2                                   | N   | 1    | f    | 25.0999 GHz | -35.578 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 3                                   | N   | 1    | f    | 4.8043 GHz  | -49.650 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 4                                   | N   | 1    | f    | 7.1354 GHz  | -49.507 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 5                                   | N   | 1    | f    | 9.6574 GHz  | -50.005 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| <p><math>\pi/4</math>DQPSK/MCH</p>  |  <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCAL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4405 GHz</td> <td>-3.122 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>24.6533 GHz</td> <td>-36.756 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>4.7011 GHz</td> <td>-50.442 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>7.3578 GHz</td> <td>-49.772 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>N</td> <td>1</td> <td>f</td> <td>9.6733 GHz</td> <td>-50.789 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR  | MODE | TRIG        | SCAL        | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.4405 GHz | -3.122 dBm |  |  |  | 2 | N | 1 | f | 24.6533 GHz | -36.756 dBm |  |  |  | 3 | N | 1 | f | 4.7011 GHz | -50.442 dBm |  |  |  | 4 | N | 1 | f | 7.3578 GHz | -49.772 dBm |  |  |  | 5 | N | 1 | f | 9.6733 GHz | -50.789 dBm |  |  |  |
| MKR                                 | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 1                                   | N   | 1    | f    | 2.4405 GHz  | -3.122 dBm  |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 2                                   | N   | 1    | f    | 24.6533 GHz | -36.756 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 3                                   | N   | 1    | f    | 4.7011 GHz  | -50.442 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 4                                   | N   | 1    | f    | 7.3578 GHz  | -49.772 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 5                                   | N   | 1    | f    | 9.6733 GHz  | -50.789 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
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| MKR                                 | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 1                                   | N   | 1    | f    | 2.4802 GHz  | 0.836 dBm   |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 2                                   | N   | 1    | f    | 24.6330 GHz | -36.733 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 3                                   | N   | 1    | f    | 4.9805 GHz  | -47.413 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 4                                   | N   | 1    | f    | 7.4725 GHz  | -49.211 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 5                                   | N   | 1    | f    | 9.9015 GHz  | -51.016 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |

| <p>8DPSK /LCH</p> |  <table border="1" data-bbox="592 611 1294 768"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCAL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4017 GHz</td> <td>1.597 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>24.6806 GHz</td> <td>-36.352 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>4.8043 GHz</td> <td>-49.326 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>7.3719 GHz</td> <td>-48.832 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>N</td> <td>1</td> <td>f</td> <td>9.6486 GHz</td> <td>-49.151 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>      | MKR  | MODE | TRIG        | SCAL        | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.4017 GHz | 1.597 dBm  |  |  |  | 2 | N | 1 | f | 24.6806 GHz | -36.352 dBm |  |  |  | 3 | N | 1 | f | 4.8043 GHz | -49.326 dBm |  |  |  | 4 | N | 1 | f | 7.3719 GHz | -48.832 dBm |  |  |  | 5 | N | 1 | f | 9.6486 GHz | -49.151 dBm |  |  |  |
|-------------------|---|------|------|-------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|------------|------------|--|--|--|---|---|---|---|-------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|
| MKR               | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 1                 | N   | 1    | f    | 2.4017 GHz  | 1.597 dBm   |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 2                 | N   | 1    | f    | 24.6806 GHz | -36.352 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 3                 | N   | 1    | f    | 4.8043 GHz  | -49.326 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 4                 | N   | 1    | f    | 7.3719 GHz  | -48.832 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 5                 | N   | 1    | f    | 9.6486 GHz  | -49.151 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
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| MKR               | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 1                 | N   | 1    | f    | 2.4414 GHz  | 1.451 dBm   |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 2                 | N   | 1    | f    | 24.7186 GHz | -36.352 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 3                 | N   | 1    | f    | 4.8820 GHz  | -49.356 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 4                 | N   | 1    | f    | 7.3822 GHz  | -49.079 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 5                 | N   | 1    | f    | 9.6684 GHz  | -49.816 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| <p>8DPSK /HCH</p> |  <table border="1" data-bbox="592 1664 1294 1821"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCAL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4802 GHz</td> <td>-2.256 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>24.6683 GHz</td> <td>-36.804 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>4.9805 GHz</td> <td>-50.029 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>7.6269 GHz</td> <td>-50.136 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>N</td> <td>1</td> <td>f</td> <td>9.9413 GHz</td> <td>-50.102 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR  | MODE | TRIG        | SCAL        | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.4802 GHz | -2.256 dBm |  |  |  | 2 | N | 1 | f | 24.6683 GHz | -36.804 dBm |  |  |  | 3 | N | 1 | f | 4.9805 GHz | -50.029 dBm |  |  |  | 4 | N | 1 | f | 7.6269 GHz | -50.136 dBm |  |  |  | 5 | N | 1 | f | 9.9413 GHz | -50.102 dBm |  |  |  |
| MKR               | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 1                 | N   | 1    | f    | 2.4802 GHz  | -2.256 dBm  |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 2                 | N   | 1    | f    | 24.6683 GHz | -36.804 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 3                 | N   | 1    | f    | 4.9805 GHz  | -50.029 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 4                 | N   | 1    | f    | 7.6269 GHz  | -50.136 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |
| 5                 | N   | 1    | f    | 9.9413 GHz  | -50.102 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |

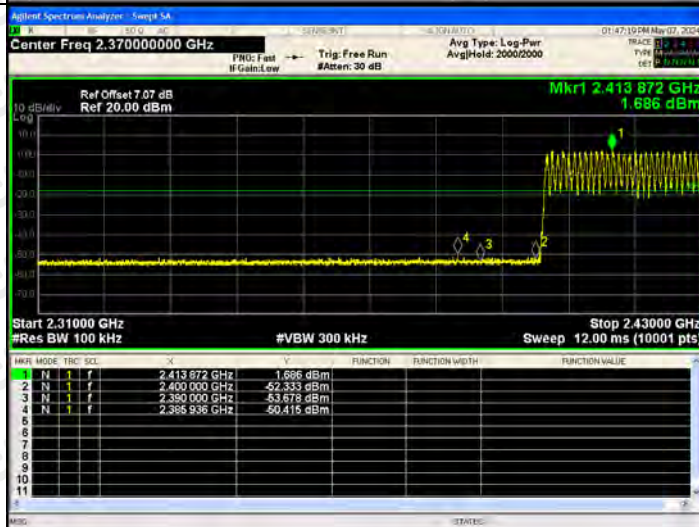
Right ear:

### BAND EDGE Graphs

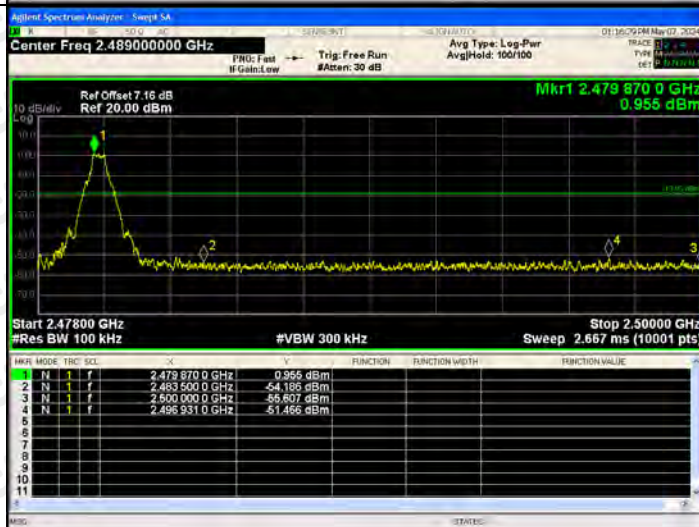
GFSK/LCH/  
No Hop



GFSK/LCH/  
Hop



GFSK/HCH/  
No Hop



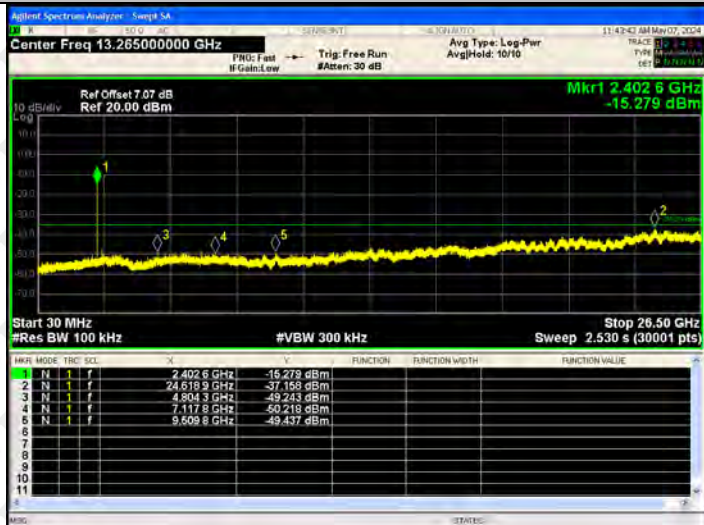
| <p>GFSK/HCH/<br/>Hop</p>                       | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.468750000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.439 037 50 GHz<br/>1.564 dBm</p> <p>Start 2.43750 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 6.000 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.439 037 50 GHz</td> <td>1.564 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.483 500 00 GHz</td> <td>-53.830 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.490 000 00 GHz</td> <td>-53.814 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.496 026 00 GHz</td> <td>-50.204 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.439 037 50 GHz | 1.564 dBm  |  |  |  | 2 | N | 1 | f | 2.483 500 00 GHz | -53.830 dBm |  |  |  | 3 | N | 1 | f | 2.490 000 00 GHz | -53.814 dBm |  |  |  | 4 | N | 1 | f | 2.496 026 00 GHz | -50.204 dBm |  |  |  |
|--|---|-----|------|------------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|------------------|------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|
| MKR  | MODE  | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1  | N   | 1   | f    | 2.439 037 50 GHz | 1.564 dBm   |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2  | N   | 1   | f    | 2.483 500 00 GHz | -53.830 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3  | N   | 1   | f    | 2.490 000 00 GHz | -53.814 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4  | N   | 1   | f    | 2.496 026 00 GHz | -50.204 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| <p><math>\pi/4</math>DQPSK/LCH/<br/>No Hop</p> | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.360000000 GHz</p> <p>Ref Offset 7.07 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.402 03 GHz<br/>-0.336 dBm</p> <p>Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.41000 GHz Sweep 10.00 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.402 03 GHz</td> <td>-0.336 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.400 00 GHz</td> <td>-53.387 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.399 00 GHz</td> <td>-55.806 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.397 89 GHz</td> <td>-51.194 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>                   | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.402 03 GHz     | -0.336 dBm |  |  |  | 2 | N | 1 | f | 2.400 00 GHz     | -53.387 dBm |  |  |  | 3 | N | 1 | f | 2.399 00 GHz     | -55.806 dBm |  |  |  | 4 | N | 1 | f | 2.397 89 GHz     | -51.194 dBm |  |  |  |
| MKR  | MODE  | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1  | N   | 1   | f    | 2.402 03 GHz     | -0.336 dBm  |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2  | N   | 1   | f    | 2.400 00 GHz     | -53.387 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3  | N   | 1   | f    | 2.399 00 GHz     | -55.806 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
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| <p><math>\pi/4</math>DQPSK/LCH/<br/>Hop</p>    | <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.370000000 GHz</p> <p>Ref Offset 7.07 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.412 024 GHz<br/>1.624 dBm</p> <p>Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.43000 GHz Sweep 12.00 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.412 024 GHz</td> <td>1.624 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.400 000 GHz</td> <td>-53.729 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.399 000 GHz</td> <td>-53.487 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.391 838 GHz</td> <td>-50.898 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>                | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.412 024 GHz    | 1.624 dBm  |  |  |  | 2 | N | 1 | f | 2.400 000 GHz    | -53.729 dBm |  |  |  | 3 | N | 1 | f | 2.399 000 GHz    | -53.487 dBm |  |  |  | 4 | N | 1 | f | 2.391 838 GHz    | -50.898 dBm |  |  |  |
| MKR  | MODE  | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1  | N   | 1   | f    | 2.412 024 GHz    | 1.624 dBm   |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2  | N   | 1   | f    | 2.400 000 GHz    | -53.729 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3  | N   | 1   | f    | 2.399 000 GHz    | -53.487 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
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| <p><math>\pi/4</math>DQPSK/HCH/<br/>No Hop</p> | <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.489000000 GHz<br/>Ref Offset 7.16 dB<br/>Ref 20.00 dBm<br/>Mkr1 2.479 867 8 GHz<br/>0.727 dBm<br/>Start 2.47800 GHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Stop 2.50000 GHz<br/>Sweep 2.667 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.479 867 8 GHz</td> <td>0.727 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.483 500 0 GHz</td> <td>-55.362 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.490 000 0 GHz</td> <td>-55.152 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.495 014 8 GHz</td> <td>-51.552 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>      | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.479 867 8 GHz  | 0.727 dBm  |  |  |  | 2 | N | 1 | f | 2.483 500 0 GHz  | -55.362 dBm |  |  |  | 3 | N | 1 | f | 2.490 000 0 GHz  | -55.152 dBm |  |  |  | 4 | N | 1 | f | 2.495 014 8 GHz  | -51.552 dBm |  |  |  |
|--|---|-----|------|------------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|------------------|------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|
| MKR  | MODE  | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1  | N   | 1   | f    | 2.479 867 8 GHz  | 0.727 dBm   |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2  | N   | 1   | f    | 2.483 500 0 GHz  | -55.362 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3  | N   | 1   | f    | 2.490 000 0 GHz  | -55.152 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4  | N   | 1   | f    | 2.495 014 8 GHz  | -51.552 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
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| MKR  | MODE  | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1  | N   | 1   | f    | 2.447 193 75 GHz | 1.242 dBm   |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2  | N   | 1   | f    | 2.483 500 00 GHz | -52.273 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3  | N   | 1   | f    | 2.500 000 00 GHz | -53.039 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4  | N   | 1   | f    | 2.495 906 26 GHz | -50.563 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| <p>8DPSK/LCH/No<br/>Hop</p>                    | <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.360000000 GHz<br/>Ref Offset 7.07 dB<br/>Ref 20.00 dBm<br/>Mkr1 2.402 05 GHz<br/>-0.213 dBm<br/>Start 2.31000 GHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Stop 2.41000 GHz<br/>Sweep 10.00 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.402 05 GHz</td> <td>-0.213 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.400 00 GHz</td> <td>-54.050 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.390 00 GHz</td> <td>-55.636 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.350 95 GHz</td> <td>-52.055 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>                   | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.402 05 GHz     | -0.213 dBm |  |  |  | 2 | N | 1 | f | 2.400 00 GHz     | -54.050 dBm |  |  |  | 3 | N | 1 | f | 2.390 00 GHz     | -55.636 dBm |  |  |  | 4 | N | 1 | f | 2.350 95 GHz     | -52.055 dBm |  |  |  |
| MKR  | MODE  | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1  | N   | 1   | f    | 2.402 05 GHz     | -0.213 dBm  |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2  | N   | 1   | f    | 2.400 00 GHz     | -54.050 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3  | N   | 1   | f    | 2.390 00 GHz     | -55.636 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4  | N   | 1   | f    | 2.350 95 GHz     | -52.055 dBm |          |                |                |                |                |   |   |   |   |                  |            |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |

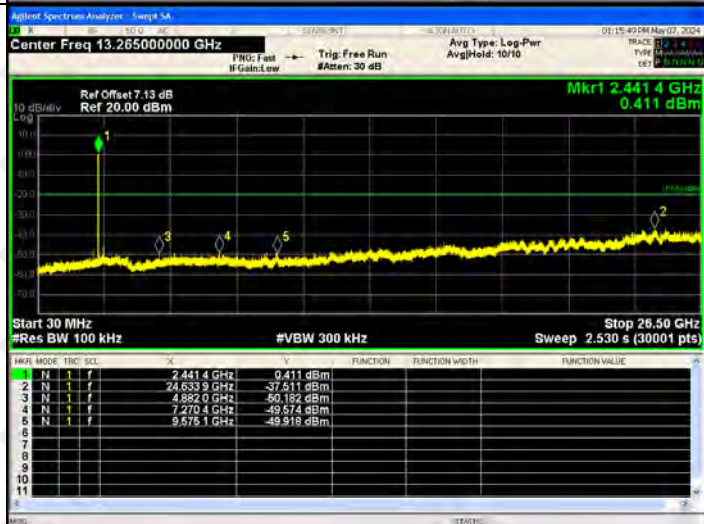
| <p>8DPSK<br/>/LCH/Hop</p> | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Center Freq 2.37000000 GHz</p> <p>Ref Offset 7.67 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.425 188 GHz<br/>1.605 dBm</p> <p>Start 2.31000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.43000 GHz Sweep 12.00 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.425 188 GHz</td> <td>1.605 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.400 000 GHz</td> <td>-53.803 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.390 000 GHz</td> <td>-53.282 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.388 992 GHz</td> <td>-51.280 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>                | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.425 188 GHz    | 1.605 dBm |  |  |  | 2 | N | 1 | f | 2.400 000 GHz    | -53.803 dBm |  |  |  | 3 | N | 1 | f | 2.390 000 GHz    | -53.282 dBm |  |  |  | 4 | N | 1 | f | 2.388 992 GHz    | -51.280 dBm |  |  |  |
|---------------------------|--|-----|------|------------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|------------------|-----------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|---|---|---|---|------------------|-------------|--|--|--|
| MKR                       | MODE   | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1                         | N  | 1   | f    | 2.425 188 GHz    | 1.605 dBm   |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2                         | N  | 1   | f    | 2.400 000 GHz    | -53.803 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3                         | N  | 1   | f    | 2.390 000 GHz    | -53.282 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4                         | N  | 1   | f    | 2.388 992 GHz    | -51.280 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| <p>8DPSK /HCH/No Hop</p>  | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Center Freq 2.48900000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.480 013 0 GHz<br/>0.487 dBm</p> <p>Start 2.47800 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 2.667 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.480 013 0 GHz</td> <td>0.487 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.483 500 0 GHz</td> <td>-54.266 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.500 000 0 GHz</td> <td>-51.223 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.487 352 2 GHz</td> <td>-51.742 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>      | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.480 013 0 GHz  | 0.487 dBm |  |  |  | 2 | N | 1 | f | 2.483 500 0 GHz  | -54.266 dBm |  |  |  | 3 | N | 1 | f | 2.500 000 0 GHz  | -51.223 dBm |  |  |  | 4 | N | 1 | f | 2.487 352 2 GHz  | -51.742 dBm |  |  |  |
| MKR                       | MODE   | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1                         | N  | 1   | f    | 2.480 013 0 GHz  | 0.487 dBm   |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2                         | N  | 1   | f    | 2.483 500 0 GHz  | -54.266 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3                         | N  | 1   | f    | 2.500 000 0 GHz  | -51.223 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4                         | N  | 1   | f    | 2.487 352 2 GHz  | -51.742 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| <p>8DPSK<br/>/HCH/Hop</p> | <p>Agilent Spectrum Analyzer - Sweep 5A</p> <p>Center Freq 2.46875000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.439 875 00 GHz<br/>1.399 dBm</p> <p>Start 2.43750 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 6.000 ms (10001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.439 875 00 GHz</td> <td>1.399 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>2.483 500 00 GHz</td> <td>-54.234 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>2.500 000 00 GHz</td> <td>-53.433 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>2.498 731 25 GHz</td> <td>-50.768 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR | MODE | TRC              | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.439 875 00 GHz | 1.399 dBm |  |  |  | 2 | N | 1 | f | 2.483 500 00 GHz | -54.234 dBm |  |  |  | 3 | N | 1 | f | 2.500 000 00 GHz | -53.433 dBm |  |  |  | 4 | N | 1 | f | 2.498 731 25 GHz | -50.768 dBm |  |  |  |
| MKR                       | MODE   | TRC | SCL  | X                | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 1                         | N  | 1   | f    | 2.439 875 00 GHz | 1.399 dBm   |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 2                         | N  | 1   | f    | 2.483 500 00 GHz | -54.234 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 3                         | N  | 1   | f    | 2.500 000 00 GHz | -53.433 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |
| 4                         | N  | 1   | f    | 2.498 731 25 GHz | -50.768 dBm |          |                |                |                |                |   |   |   |   |                  |           |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |   |   |   |   |                  |             |  |  |  |

RF Conducted Spurious Emissions Graphs

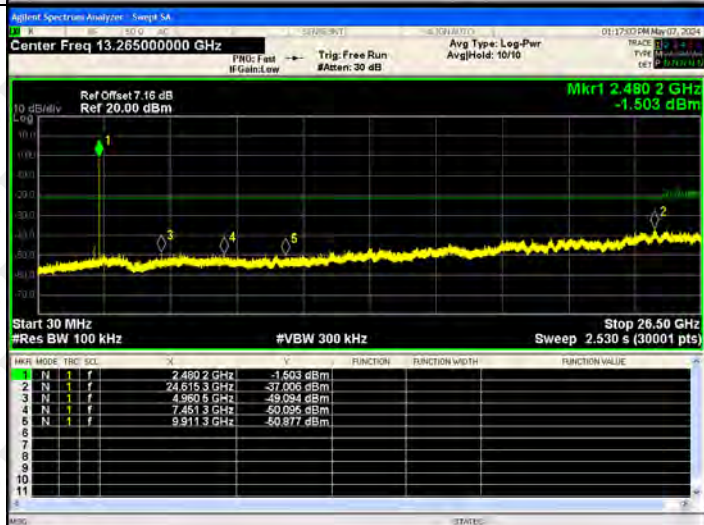
GFSK/LCH



GFSK/MCH



GFSK/HCH



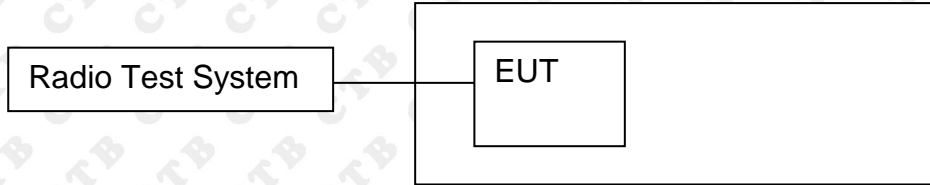
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|-------------------------------------|---|------|------|-------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|------------|------------|--|--|--|---|---|---|---|-------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|---|---|---|---|------------|-------------|--|--|--|--|
| MKR                                 | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 1                                   | N   | 1    | f    | 2.4026 GHz  | -3.644 dBm  |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 2                                   | N   | 1    | f    | 24.6339 GHz | -37.613 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 3                                   | N   | 1    | f    | 4.8043 GHz  | -47.833 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 4                                   | N   | 1    | f    | 7.4045 GHz  | -50.360 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 5                                   | N   | 1    | f    | 9.6001 GHz  | -50.480 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
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| MKR                                 | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 1                                   | N   | 1    | f    | 2.4414 GHz  | 0.109 dBm   |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 2                                   | N   | 1    | f    | 26.7085 GHz | -37.694 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 3                                   | N   | 1    | f    | 4.8820 GHz  | -48.889 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 4                                   | N   | 1    | f    | 7.2369 GHz  | -50.430 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 5                                   | N   | 1    | f    | 9.6830 GHz  | -50.334 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| <p><math>\pi/4</math>DQPSK/HCH</p>  | <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCAL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.4802 GHz</td> <td>-3.264 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>24.6497 GHz</td> <td>-36.577 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>5.0902 GHz</td> <td>-50.727 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>7.4061 GHz</td> <td>-49.930 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>N</td> <td>1</td> <td>f</td> <td>9.9430 GHz</td> <td>-51.486 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR  | MODE | TRIG        | SCAL        | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.4802 GHz | -3.264 dBm |  |  |  | 2 | N | 1 | f | 24.6497 GHz | -36.577 dBm |  |  |  | 3 | N | 1 | f | 5.0902 GHz | -50.727 dBm |  |  |  | 4 | N | 1 | f | 7.4061 GHz | -49.930 dBm |  |  |  | 5 | N | 1 | f | 9.9430 GHz | -51.486 dBm |  |  |  |  |
| MKR                                 | MODE  | TRIG | SCAL | X           | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 1                                   | N   | 1    | f    | 2.4802 GHz  | -3.264 dBm  |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 2                                   | N   | 1    | f    | 24.6497 GHz | -36.577 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 3                                   | N   | 1    | f    | 5.0902 GHz  | -50.727 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 4                                   | N   | 1    | f    | 7.4061 GHz  | -49.930 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |
| 5                                   | N   | 1    | f    | 9.9430 GHz  | -51.486 dBm |          |                |                |                |                |   |   |   |   |            |            |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |   |   |   |   |            |             |  |  |  |  |



| <p>8DPSK /LCH</p> | <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Center Freq 13.265000000 GHz</p> <p>Ref Offset 7.07 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.401 7 GHz<br/>-2.851 dBm</p> <p>Start 30 MHz<br/>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Stop 26.50 GHz<br/>Sweep 2.530 s (30001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCAL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.401 7 GHz</td> <td>-2.851 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>24.678 0 GHz</td> <td>-35.718 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>4.804 3 GHz</td> <td>-43.635 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>7.005 6 GHz</td> <td>-50.691 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>N</td> <td>1</td> <td>f</td> <td>9.445 4 GHz</td> <td>-50.640 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR  | MODE | TRIG         | SCAL        | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.401 7 GHz | -2.851 dBm |  |  |  | 2 | N | 1 | f | 24.678 0 GHz | -35.718 dBm |  |  |  | 3 | N | 1 | f | 4.804 3 GHz | -43.635 dBm |  |  |  | 4 | N | 1 | f | 7.005 6 GHz | -50.691 dBm |  |  |  | 5 | N | 1 | f | 9.445 4 GHz | -50.640 dBm |  |  |  |
|-------------------|---|------|------|--------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|-------------|------------|--|--|--|---|---|---|---|--------------|-------------|--|--|--|---|---|---|---|-------------|-------------|--|--|--|---|---|---|---|-------------|-------------|--|--|--|---|---|---|---|-------------|-------------|--|--|--|
| MKR               | MODE  | TRIG | SCAL | X            | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 1                 | N   | 1    | f    | 2.401 7 GHz  | -2.851 dBm  |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 2                 | N   | 1    | f    | 24.678 0 GHz | -35.718 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 3                 | N   | 1    | f    | 4.804 3 GHz  | -43.635 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 4                 | N   | 1    | f    | 7.005 6 GHz  | -50.691 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 5                 | N   | 1    | f    | 9.445 4 GHz  | -50.640 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| <p>8DPSK /MCH</p> | <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Center Freq 13.265000000 GHz</p> <p>Ref Offset 7.13 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.440 5 GHz<br/>-0.294 dBm</p> <p>Start 30 MHz<br/>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Stop 26.50 GHz<br/>Sweep 2.530 s (30001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCAL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.440 5 GHz</td> <td>-0.294 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>24.641 8 GHz</td> <td>-35.978 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>4.892 0 GHz</td> <td>-43.646 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>7.309 3 GHz</td> <td>-50.218 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>N</td> <td>1</td> <td>f</td> <td>9.698 3 GHz</td> <td>-51.002 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR  | MODE | TRIG         | SCAL        | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.440 5 GHz | -0.294 dBm |  |  |  | 2 | N | 1 | f | 24.641 8 GHz | -35.978 dBm |  |  |  | 3 | N | 1 | f | 4.892 0 GHz | -43.646 dBm |  |  |  | 4 | N | 1 | f | 7.309 3 GHz | -50.218 dBm |  |  |  | 5 | N | 1 | f | 9.698 3 GHz | -51.002 dBm |  |  |  |
| MKR               | MODE  | TRIG | SCAL | X            | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 1                 | N   | 1    | f    | 2.440 5 GHz  | -0.294 dBm  |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 2                 | N   | 1    | f    | 24.641 8 GHz | -35.978 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 3                 | N   | 1    | f    | 4.892 0 GHz  | -43.646 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 4                 | N   | 1    | f    | 7.309 3 GHz  | -50.218 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 5                 | N   | 1    | f    | 9.698 3 GHz  | -51.002 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| <p>8DPSK /HCH</p> | <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Center Freq 13.265000000 GHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.480 2 GHz<br/>-3.738 dBm</p> <p>Start 30 MHz<br/>#Res BW 100 kHz</p> <p>#VBW 300 kHz</p> <p>Stop 26.50 GHz<br/>Sweep 2.530 s (30001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCAL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>2.480 2 GHz</td> <td>-3.738 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>24.649 9 GHz</td> <td>-36.709 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>N</td> <td>1</td> <td>f</td> <td>4.960 5 GHz</td> <td>-50.827 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>N</td> <td>1</td> <td>f</td> <td>7.518 4 GHz</td> <td>-49.921 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>N</td> <td>1</td> <td>f</td> <td>9.940 4 GHz</td> <td>-51.151 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | MKR  | MODE | TRIG         | SCAL        | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.480 2 GHz | -3.738 dBm |  |  |  | 2 | N | 1 | f | 24.649 9 GHz | -36.709 dBm |  |  |  | 3 | N | 1 | f | 4.960 5 GHz | -50.827 dBm |  |  |  | 4 | N | 1 | f | 7.518 4 GHz | -49.921 dBm |  |  |  | 5 | N | 1 | f | 9.940 4 GHz | -51.151 dBm |  |  |  |
| MKR               | MODE  | TRIG | SCAL | X            | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 1                 | N   | 1    | f    | 2.480 2 GHz  | -3.738 dBm  |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 2                 | N   | 1    | f    | 24.649 9 GHz | -36.709 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 3                 | N   | 1    | f    | 4.960 5 GHz  | -50.827 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 4                 | N   | 1    | f    | 7.518 4 GHz  | -49.921 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |
| 5                 | N   | 1    | f    | 9.940 4 GHz  | -51.151 dBm |          |                |                |                |                |   |   |   |   |             |            |  |  |  |   |   |   |   |              |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |   |   |   |   |             |             |  |  |  |

## 9. COUDUCTED PEAK OUTPUT POWER

### 9.1 Block Diagram Of Test Setup



### 9.2 Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

### 9.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 2MHz. VBW = 6MHz. Sweep = auto; Detector Function = Peak.
3. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

## 9.4 Test Result




Left ear:

| Mode                      | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------------------|----------|---------------------------------|-------------|---------|
| EDR mode (GFSK)           | LCH      | 1.695                           | 20.97       | PASS    |
|                           | MCH      | 1.769                           | 20.97       | PASS    |
|                           | HCH      | 1.375                           | 20.97       | PASS    |
| EDR mode ( $\pi/4$ DQPSK) | LCH      | 2.607                           | 20.97       | PASS    |
|                           | MCH      | 2.462                           | 20.97       | PASS    |
|                           | HCH      | 2.192                           | 20.97       | PASS    |
| EDR mode (8DPSK)          | LCH      | 3.099                           | 20.97       | PASS    |
|                           | MCH      | 2.894                           | 20.97       | PASS    |
|                           | HCH      | 2.519                           | 20.97       | PASS    |




Right ear:

| Mode                      | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------------------|----------|---------------------------------|-------------|---------|
| EDR mode (GFSK)           | LCH      | 0.401                           | 20.97       | PASS    |
|                           | MCH      | 1.677                           | 20.97       | PASS    |
|                           | HCH      | 1.033                           | 20.97       | PASS    |
| EDR mode ( $\pi/4$ DQPSK) | LCH      | 2.447                           | 20.97       | PASS    |
|                           | MCH      | 2.278                           | 20.97       | PASS    |
|                           | HCH      | 1.714                           | 20.97       | PASS    |
| EDR mode (8DPSK)          | LCH      | 2.691                           | 20.97       | PASS    |
|                           | MCH      | 2.568                           | 20.97       | PASS    |
|                           | HCH      | 1.976                           | 20.97       | PASS    |

Left ear:  
Test Graph:

| Graphs   |  |
|----------|--|
| GFSK/LCH |    |
| GFSK/MCH |   |
| GFSK/HCH |  |

|                                    |  |
|------------------------------------|--|
| <p><math>\pi/4</math>DQPSK/LCH</p> |  |
| <p><math>\pi/4</math>DQPSK/MCH</p> |  |
| <p><math>\pi/4</math>DQPSK/HCH</p> |  |




|                   |  |
|-------------------|--|
| <p>8DPSK/LCH</p>  |    |
| <p>8DPSK /MCH</p> |   |
| <p>8DPSK /HCH</p> |  |

Right ear:  
Test Graph:

| Graphs   |  |
|----------|--|
| GFSK/LCH |  |
| GFSK/MCH |  |
| GFSK/HCH |  |

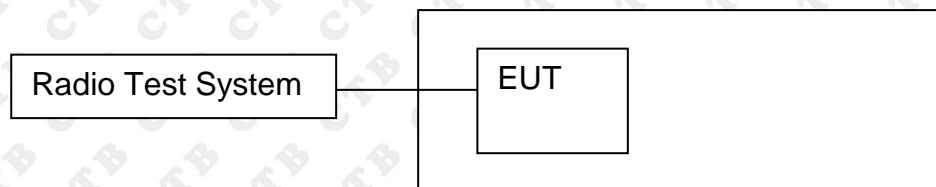
|                                    |  |
|------------------------------------|--|
| <p><math>\pi/4</math>DQPSK/LCH</p> |  |
| <p><math>\pi/4</math>DQPSK/MCH</p> |  |
| <p><math>\pi/4</math>DQPSK/HCH</p> |  |



|                   |  |
|-------------------|--|
| <p>8DPSK/LCH</p>  |    |
| <p>8DPSK /MCH</p> |   |
| <p>8DPSK /HCH</p> |  |

## 10. 20DB OCCUPIED BANDWIDTH

### 10.1 Block Diagram Of Test Setup



### 10.2 Limit

Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125mw.

### 10.3 Test procedure

1. Rem1. Set RBW = 30 kHz.
2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

10.4 Test Result

Left ear:

| Test Mode     | Frequency    | 20dB Bandwidth (MHz) | Result      |
|---------------|--------------|----------------------|-------------|
| GFSK          | Low channel  | 0.868                | <b>PASS</b> |
|               | Mid channel  | 0.871                | <b>PASS</b> |
|               | High channel | 0.857                | <b>PASS</b> |
| $\pi/4$ DQPSK | Low channel  | 1.28                 | <b>PASS</b> |
|               | Mid channel  | 1.27                 | <b>PASS</b> |
|               | High channel | 1.309                | <b>PASS</b> |
| 8DPSK         | Low channel  | 1.309                | <b>PASS</b> |
|               | Mid channel  | 1.314                | <b>PASS</b> |
|               | High channel | 1.305                | <b>PASS</b> |

Right ear:

| Test Mode     | Frequency    | 20dB Bandwidth (MHz) | Result      |
|---------------|--------------|----------------------|-------------|
| GFSK          | Low channel  | 0.878                | <b>PASS</b> |
|               | Mid channel  | 0.88                 | <b>PASS</b> |
|               | High channel | 0.914                | <b>PASS</b> |
| $\pi/4$ DQPSK | Low channel  | 1.276                | <b>PASS</b> |
|               | Mid channel  | 1.272                | <b>PASS</b> |
|               | High channel | 1.283                | <b>PASS</b> |
| 8DPSK         | Low channel  | 1.298                | <b>PASS</b> |
|               | Mid channel  | 1.293                | <b>PASS</b> |
|               | High channel | 1.277                | <b>PASS</b> |

Note: All modes of operation were Pre-scan and the worst-case emissions are reported.

Left ear:  
Test Graph:

|                              |  |
|------------------------------|--|
| <p>GFSK<br/>Low channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Center Freq: 2.40200000 GHz</p> <p>Trig: Free Run</p> <p>Avg/Hold: 100/100</p> <p>Radio Stid: None</p> <p>Radio Device: BTS</p> <p>Ref Offset 7.07 dB</p> <p>Ref 27.07 dBm</p> <p>Mkr3 2.402452 GHz</p> <p>-20.537 dBm</p> <p>Center 2.402 GHz</p> <p>#Res BW 30 kHz</p> <p>#VBW 100 kHz</p> <p>Span 3 MHz</p> <p>Sweep 3.2 ms</p> <p>Occupied Bandwidth 836.57 kHz</p> <p>Total Power 7.99 dBm</p> <p>Transmit Freq Error 18.271 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 868.3 kHz</p> <p>x dB -20.00 dB</p> |
| <p>GFSK<br/>Mid channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44100000 GHz</p> <p>Center Freq: 2.44100000 GHz</p> <p>Trig: Free Run</p> <p>Avg/Hold: 100/100</p> <p>Radio Stid: None</p> <p>Radio Device: BTS</p> <p>Ref Offset 7.13 dB</p> <p>Ref 27.13 dBm</p> <p>Mkr3 2.441452 GHz</p> <p>-19.621 dBm</p> <p>Center 2.441 GHz</p> <p>#Res BW 30 kHz</p> <p>#VBW 100 kHz</p> <p>Span 3 MHz</p> <p>Sweep 3.2 ms</p> <p>Occupied Bandwidth 850.09 kHz</p> <p>Total Power 7.87 dBm</p> <p>Transmit Freq Error 16.162 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 871.3 kHz</p> <p>x dB -20.00 dB</p> |
| <p>GFSK<br/>High channel</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.48000000 GHz</p> <p>Center Freq: 2.48000000 GHz</p> <p>Trig: Free Run</p> <p>Avg/Hold: 100/100</p> <p>Radio Stid: None</p> <p>Radio Device: BTS</p> <p>Ref Offset 7.16 dB</p> <p>Ref 27.16 dBm</p> <p>Mkr3 2.480446 GHz</p> <p>-19.726 dBm</p> <p>Center 2.48 GHz</p> <p>#Res BW 30 kHz</p> <p>#VBW 100 kHz</p> <p>Span 3 MHz</p> <p>Sweep 3.2 ms</p> <p>Occupied Bandwidth 843.66 kHz</p> <p>Total Power 7.86 dBm</p> <p>Transmit Freq Error 17.393 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 857.1 kHz</p> <p>x dB -20.00 dB</p>  |

|  |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
|--|---|--------------------|-------------|----------|------------|--|--|---------------------|-----------|---------|------------|--|--|----------------|------|-----------|-----------|--|--|--|
| <p><math>\pi/4</math>-DQPSK<br/>Low channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.402000000 GHz</p> <p>Ref Offset: 7.07 dB<br/>Ref: 27.07 dBm</p> <p>Mkr3: 2.402658 GHz<br/>-19.068 dBm</p> <p>Center: 2.402 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>8.27 dBm</td> </tr> <tr> <td>1.1766 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>18.773 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>1.280 MHz</td> <td></td> <td></td> </tr> </table> | Occupied Bandwidth | Total Power | 8.27 dBm | 1.1766 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 18.773 kHz |  |  | x dB Bandwidth | x dB | -20.00 dB | 1.280 MHz |  |  |  |
| Occupied Bandwidth                               | Total Power   | 8.27 dBm           |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 1.1766 MHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| Transmit Freq Error                              | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 18.773 kHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| x dB Bandwidth                                   | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 1.280 MHz  |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| <p><math>\pi/4</math>-DQPSK<br/>Mid channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.441000000 GHz</p> <p>Ref Offset: 7.13 dB<br/>Ref: 27.13 dBm</p> <p>Mkr3: 2.441657 GHz<br/>-18.821 dBm</p> <p>Center: 2.441 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.81 dBm</td> </tr> <tr> <td>1.1861 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>22.258 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>1.270 MHz</td> <td></td> <td></td> </tr> </table> | Occupied Bandwidth | Total Power | 7.81 dBm | 1.1861 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 22.258 kHz |  |  | x dB Bandwidth | x dB | -20.00 dB | 1.270 MHz |  |  |  |
| Occupied Bandwidth                               | Total Power   | 7.81 dBm           |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 1.1861 MHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| Transmit Freq Error                              | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 22.258 kHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| x dB Bandwidth                                   | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 1.270 MHz  |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| <p><math>\pi/4</math>-DQPSK<br/>High channel</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.480000000 GHz</p> <p>Ref Offset: 7.16 dB<br/>Ref: 27.16 dBm</p> <p>Mkr3: 2.480677 GHz<br/>-22.170 dBm</p> <p>Center: 2.48 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.35 dBm</td> </tr> <tr> <td>1.1996 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>22.152 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>1.309 MHz</td> <td></td> <td></td> </tr> </table>  | Occupied Bandwidth | Total Power | 7.35 dBm | 1.1996 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 22.152 kHz |  |  | x dB Bandwidth | x dB | -20.00 dB | 1.309 MHz |  |  |  |
| Occupied Bandwidth                               | Total Power   | 7.35 dBm           |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 1.1996 MHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| Transmit Freq Error                              | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 22.152 kHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| x dB Bandwidth                                   | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |
| 1.309 MHz  |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |      |           |           |  |  |  |

|                               |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
|-------------------------------|---|--------------------|-------------|----------|------------|--|--|---------------------|-----------|---------|------------|------|-----------|----------------|--|--|-----------|--|--|--|
| <p>8DPSK<br/>Low channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.402000000 GHz</p> <p>Ref Offset: 7.07 dB<br/>Ref: 27.07 dBm</p> <p>Mkr3: 2.402672 GHz<br/>-21.184 dBm</p> <p>Center: 2.402 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>8.06 dBm</td> </tr> <tr> <td>1.1983 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>17.703 kHz</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>1.309 MHz</td> <td></td> <td></td> </tr> </table> | Occupied Bandwidth | Total Power | 8.06 dBm | 1.1983 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 17.703 kHz | x dB | -20.00 dB | x dB Bandwidth |  |  | 1.309 MHz |  |  |  |
| Occupied Bandwidth            | Total Power   | 8.06 dBm           |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.1983 MHz                    |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| Transmit Freq Error           | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 17.703 kHz                    | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| x dB Bandwidth                |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.309 MHz                     |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| <p>8DPSK<br/>Mid channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.441000000 GHz</p> <p>Ref Offset: 7.13 dB<br/>Ref: 27.13 dBm</p> <p>Mkr3: 2.44168 GHz<br/>-21.023 dBm</p> <p>Center: 2.441 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.91 dBm</td> </tr> <tr> <td>1.1966 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>22.763 kHz</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>1.314 MHz</td> <td></td> <td></td> </tr> </table>  | Occupied Bandwidth | Total Power | 7.91 dBm | 1.1966 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 22.763 kHz | x dB | -20.00 dB | x dB Bandwidth |  |  | 1.314 MHz |  |  |  |
| Occupied Bandwidth            | Total Power   | 7.91 dBm           |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.1966 MHz                    |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| Transmit Freq Error           | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 22.763 kHz                    | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| x dB Bandwidth                |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.314 MHz                     |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| <p>8DPSK<br/>High channel</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.480000000 GHz</p> <p>Ref Offset: 7.16 dB<br/>Ref: 27.16 dBm</p> <p>Mkr3: 2.48067 GHz<br/>-20.217 dBm</p> <p>Center: 2.48 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.80 dBm</td> </tr> <tr> <td>1.1898 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>17.544 kHz</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>1.305 MHz</td> <td></td> <td></td> </tr> </table>   | Occupied Bandwidth | Total Power | 7.80 dBm | 1.1898 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 17.544 kHz | x dB | -20.00 dB | x dB Bandwidth |  |  | 1.305 MHz |  |  |  |
| Occupied Bandwidth            | Total Power   | 7.80 dBm           |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.1898 MHz                    |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| Transmit Freq Error           | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 17.544 kHz                    | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| x dB Bandwidth                |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.305 MHz                     |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |

Right ear:  
Test Graph:

|                              |  |  |
|------------------------------|--|--|
| <p>GFSK<br/>Low channel</p>  |  |  |
| <p>GFSK<br/>Mid channel</p>  |  |  |
| <p>GFSK<br/>High channel</p> |  |  |

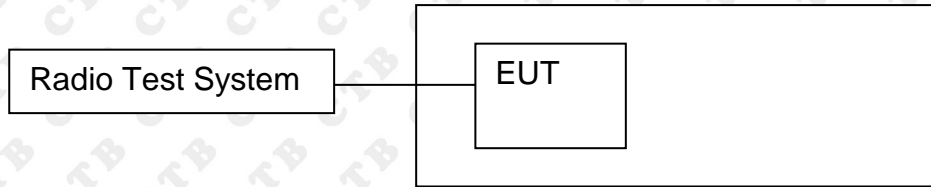
|  |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
|--|---|--------------------|-------------|----------|------------|--|--|---------------------|-----------|---------|------------|------|-----------|----------------|--|--|-----------|--|--|--|
| <p><math>\pi/4</math>-DQPSK<br/>Low channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.402000000 GHz</p> <p>Ref Offset: 7.07 dB<br/>Ref: 27.07 dBm</p> <p>Mkr3: 2.402658 GHz<br/>-18.993 dBm</p> <p>Center: 2.402 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.92 dBm</td> </tr> <tr> <td>1.1890 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>20.768 kHz</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>1.276 MHz</td> <td></td> <td></td> </tr> </table> | Occupied Bandwidth | Total Power | 7.92 dBm | 1.1890 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 20.768 kHz | x dB | -20.00 dB | x dB Bandwidth |  |  | 1.276 MHz |  |  |  |
| Occupied Bandwidth                               | Total Power   | 7.92 dBm           |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.1890 MHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| Transmit Freq Error                              | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 20.768 kHz                                       | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| x dB Bandwidth                                   |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.276 MHz  |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| <p><math>\pi/4</math>-DQPSK<br/>Mid channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.441000000 GHz</p> <p>Ref Offset: 7.13 dB<br/>Ref: 27.13 dBm</p> <p>Mkr3: 2.44166 GHz<br/>-19.097 dBm</p> <p>Center: 2.441 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.73 dBm</td> </tr> <tr> <td>1.1938 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>24.482 kHz</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>1.272 MHz</td> <td></td> <td></td> </tr> </table>  | Occupied Bandwidth | Total Power | 7.73 dBm | 1.1938 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 24.482 kHz | x dB | -20.00 dB | x dB Bandwidth |  |  | 1.272 MHz |  |  |  |
| Occupied Bandwidth                               | Total Power   | 7.73 dBm           |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.1938 MHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| Transmit Freq Error                              | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 24.482 kHz                                       | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| x dB Bandwidth                                   |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.272 MHz  |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| <p><math>\pi/4</math>-DQPSK<br/>High channel</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.480000000 GHz</p> <p>Ref Offset: 7.16 dB<br/>Ref: 27.16 dBm</p> <p>Mkr3: 2.480667 GHz<br/>-19.720 dBm</p> <p>Center: 2.48 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.25 dBm</td> </tr> <tr> <td>1.1989 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>25.597 kHz</td> <td>x dB</td> <td>-20.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>1.283 MHz</td> <td></td> <td></td> </tr> </table>  | Occupied Bandwidth | Total Power | 7.25 dBm | 1.1989 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 25.597 kHz | x dB | -20.00 dB | x dB Bandwidth |  |  | 1.283 MHz |  |  |  |
| Occupied Bandwidth                               | Total Power   | 7.25 dBm           |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.1989 MHz                                       |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| Transmit Freq Error                              | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 25.597 kHz                                       | x dB  | -20.00 dB          |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| x dB Bandwidth                                   |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |
| 1.283 MHz  |   |                    |             |          |            |  |  |                     |           |         |            |      |           |                |  |  |           |  |  |  |



|                               |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
|-------------------------------|---|--------------------|-------------|----------|------------|--|--|---------------------|-----------|---------|------------|--|--|----------------|--|-----------|-----------|--|--|--|
| <p>8DPSK<br/>Low channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.402000000 GHz</p> <p>Ref Offset: 7.07 dB<br/>Ref: 27.07 dBm</p> <p>Mkr3: 2.402667 GHz<br/>-20.160 dBm</p> <p>Center: 2.402 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>8.04 dBm</td> </tr> <tr> <td>1.1882 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>17.724 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td>-20.00 dB</td> </tr> <tr> <td>1.298 MHz</td> <td></td> <td></td> </tr> </table> | Occupied Bandwidth | Total Power | 8.04 dBm | 1.1882 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 17.724 kHz |  |  | x dB Bandwidth |  | -20.00 dB | 1.298 MHz |  |  |  |
| Occupied Bandwidth            | Total Power   | 8.04 dBm           |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 1.1882 MHz                    |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| Transmit Freq Error           | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 17.724 kHz                    |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| x dB Bandwidth                |   | -20.00 dB          |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 1.298 MHz                     |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| <p>8DPSK<br/>Mid channel</p>  | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.441000000 GHz</p> <p>Ref Offset: 7.13 dB<br/>Ref: 27.13 dBm</p> <p>Mkr3: 2.441665 GHz<br/>-19.939 dBm</p> <p>Center: 2.441 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.73 dBm</td> </tr> <tr> <td>1.1969 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>18.165 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td>-20.00 dB</td> </tr> <tr> <td>1.293 MHz</td> <td></td> <td></td> </tr> </table> | Occupied Bandwidth | Total Power | 7.73 dBm | 1.1969 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 18.165 kHz |  |  | x dB Bandwidth |  | -20.00 dB | 1.293 MHz |  |  |  |
| Occupied Bandwidth            | Total Power   | 7.73 dBm           |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 1.1969 MHz                    |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| Transmit Freq Error           | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 18.165 kHz                    |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| x dB Bandwidth                |   | -20.00 dB          |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 1.293 MHz                     |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| <p>8DPSK<br/>High channel</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.480000000 GHz</p> <p>Ref Offset: 7.16 dB<br/>Ref: 27.16 dBm</p> <p>Mkr3: 2.480654 GHz<br/>-22.181 dBm</p> <p>Center: 2.48 GHz<br/>#Res BW: 30 kHz<br/>#VBW: 100 kHz<br/>Span: 3 MHz<br/>Sweep: 3.2 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>7.15 dBm</td> </tr> <tr> <td>1.1989 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>15.523 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td>-20.00 dB</td> </tr> <tr> <td>1.277 MHz</td> <td></td> <td></td> </tr> </table>  | Occupied Bandwidth | Total Power | 7.15 dBm | 1.1989 MHz |  |  | Transmit Freq Error | OBW Power | 99.00 % | 15.523 kHz |  |  | x dB Bandwidth |  | -20.00 dB | 1.277 MHz |  |  |  |
| Occupied Bandwidth            | Total Power   | 7.15 dBm           |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 1.1989 MHz                    |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| Transmit Freq Error           | OBW Power   | 99.00 %            |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 15.523 kHz                    |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| x dB Bandwidth                |   | -20.00 dB          |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |
| 1.277 MHz                     |   |                    |             |          |            |  |  |                     |           |         |            |  |  |                |  |           |           |  |  |  |

## 11. CARRIER FREQUENCIES SEPARATION

### 11.1 Block Diagram Of Test Setup



### 11.2 Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping 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 0.125W.

### 11.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 20kHz. VBW = 62kHz, Span = 2MHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

## 11.4 Test Result

Left ear:

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit(2/3 of the 20dB bandwidth MHz) | Verdict |
|---------------|----------|------------------------------------|--------------------------------------|---------|
| GFSK          | LCH      | 0.996                              | 0.579                                | PASS    |
| GFSK          | MCH      | 0.998                              | 0.581                                | PASS    |
| GFSK          | HCH      | 1.002                              | 0.571                                | PASS    |
| $\pi/4$ DQPSK | LCH      | 1.000                              | 0.853                                | PASS    |
| $\pi/4$ DQPSK | MCH      | 0.994                              | 0.847                                | PASS    |
| $\pi/4$ DQPSK | HCH      | 1.002                              | 0.873                                | PASS    |
| 8DPSK         | LCH      | 1.004                              | 0.873                                | PASS    |
| 8DPSK         | MCH      | 1.002                              | 0.876                                | PASS    |
| 8DPSK         | HCH      | 1.000                              | 0.870                                | PASS    |

Right ear:

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit(2/3 of the 20dB bandwidth MHz) | Verdict |
|---------------|----------|------------------------------------|--------------------------------------|---------|
| GFSK          | LCH      | 1.000                              | 0.585                                | PASS    |
| GFSK          | MCH      | 1.002                              | 0.587                                | PASS    |
| GFSK          | HCH      | 1.000                              | 0.609                                | PASS    |
| $\pi/4$ DQPSK | LCH      | 0.992                              | 0.851                                | PASS    |
| $\pi/4$ DQPSK | MCH      | 0.998                              | 0.848                                | PASS    |
| $\pi/4$ DQPSK | HCH      | 1.004                              | 0.855                                | PASS    |
| 8DPSK         | LCH      | 1.006                              | 0.865                                | PASS    |
| 8DPSK         | MCH      | 0.998                              | 0.862                                | PASS    |
| 8DPSK         | HCH      | 1.002                              | 0.851                                | PASS    |

Left ear:  
Test Graph

## Graphs

GFSK/LCH



GFSK/MCH



GFSK/HCH



| <p><math>\pi/4</math>DQPSK/LCH</p> |  <table border="1" data-bbox="592 607 1299 763"> <thead> <tr> <th>MNR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A2</td> <td>1</td> <td>f</td> <td>(A)</td> <td>1.000 MHz (A)</td> <td></td> <td></td> <td>2.372 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.402 024 GHz</td> <td></td> <td></td> <td>-4.177 dBm</td> </tr> </tbody> </table>      | MNR | MODE | TRC | SCL           | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | A2 | 1 | f | (A) | 1.000 MHz (A) |  |  | 2.372 dB  | 2 | F | 1 | f |  | 2.402 024 GHz |  |  | -4.177 dBm |  |
|------------------------------------|--|-----|------|-----|---------------|----------|----------------|----------------|----------------|----------------|---|----|---|---|-----|---------------|--|--|-----------|---|---|---|---|--|---------------|--|--|------------|--|
| MNR                                | MODE   | TRC | SCL  | X   | Y             | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |
| 1                                  | A2   | 1   | f    | (A) | 1.000 MHz (A) |          |                | 2.372 dB       |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |
| 2                                  | F  | 1   | f    |     | 2.402 024 GHz |          |                | -4.177 dBm     |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |
| <p><math>\pi/4</math>DQPSK/MCH</p> |  <table border="1" data-bbox="592 1133 1299 1290"> <thead> <tr> <th>MNR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A2</td> <td>1</td> <td>f</td> <td>(A)</td> <td>994 kHz (A)</td> <td></td> <td></td> <td>-0.409 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.441 016 GHz</td> <td></td> <td></td> <td>-1.760 dBm</td> </tr> </tbody> </table>    | MNR | MODE | TRC | SCL           | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | A2 | 1 | f | (A) | 994 kHz (A)   |  |  | -0.409 dB | 2 | F | 1 | f |  | 2.441 016 GHz |  |  | -1.760 dBm |  |
| MNR                                | MODE   | TRC | SCL  | X   | Y             | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |
| 1                                  | A2   | 1   | f    | (A) | 994 kHz (A)   |          |                | -0.409 dB      |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |
| 2                                  | F  | 1   | f    |     | 2.441 016 GHz |          |                | -1.760 dBm     |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |
| <p><math>\pi/4</math>DQPSK/HCH</p> |  <table border="1" data-bbox="592 1659 1299 1816"> <thead> <tr> <th>MNR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A2</td> <td>1</td> <td>f</td> <td>(A)</td> <td>1.002 MHz (A)</td> <td></td> <td></td> <td>-3.749 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.479 018 GHz</td> <td></td> <td></td> <td>-2.007 dBm</td> </tr> </tbody> </table> | MNR | MODE | TRC | SCL           | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | A2 | 1 | f | (A) | 1.002 MHz (A) |  |  | -3.749 dB | 2 | F | 1 | f |  | 2.479 018 GHz |  |  | -2.007 dBm |  |
| MNR                                | MODE   | TRC | SCL  | X   | Y             | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |
| 1                                  | A2   | 1   | f    | (A) | 1.002 MHz (A) |          |                | -3.749 dB      |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |
| 2                                  | F  | 1   | f    |     | 2.479 018 GHz |          |                | -2.007 dBm     |                |                |   |    |   |   |     |               |  |  |           |   |   |   |   |  |               |  |  |            |  |

| <p>8DPSK/LCH</p>  |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Marker 1 <math>\Delta</math> 1.004000000 MHz</p> <p>Ref Offset 7.07 dB<br/>Ref 20.00 dBm</p> <p>Center 2.402500 GHz<br/>#Res BW 20 kHz</p> <p>Span 2.000 MHz<br/>#VBW 62 kHz<br/>Sweep 4.800 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>1</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>1.004 MHz</td> <td>(<math>\Delta</math>)</td> <td></td> <td>1.065 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.402006 GHz</td> <td></td> <td></td> <td>-2.810 dBm</td> </tr> </tbody> </table>    | MKR | MODE | TRC          | SCL          | X            | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | $\Delta$ 2 | 1 | f | ( $\Delta$ ) | 1.004 MHz | ( $\Delta$ ) |  | 1.065 dB  | 2 | F | 1 | f |  | 2.402006 GHz |  |  | -2.810 dBm |  |
|-------------------|---|-----|------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|---|------------|---|---|--------------|-----------|--------------|--|-----------|---|---|---|---|--|--------------|--|--|------------|--|
| MKR               | MODE  | TRC | SCL  | X            | Y            | FUNCTION     | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |
| 1                 | $\Delta$ 2  | 1   | f    | ( $\Delta$ ) | 1.004 MHz    | ( $\Delta$ ) |                | 1.065 dB       |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |
| 2                 | F   | 1   | f    |              | 2.402006 GHz |              |                | -2.810 dBm     |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |
| <p>8DPSK /MCH</p> |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Marker 1 <math>\Delta</math> 1.002000000 MHz</p> <p>Ref Offset 7.13 dB<br/>Ref 20.00 dBm</p> <p>Center 2.441500 GHz<br/>#Res BW 20 kHz</p> <p>Span 2.000 MHz<br/>#VBW 62 kHz<br/>Sweep 4.800 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>1</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>1.002 MHz</td> <td>(<math>\Delta</math>)</td> <td></td> <td>-0.136 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.440854 GHz</td> <td></td> <td></td> <td>-3.231 dBm</td> </tr> </tbody> </table>  | MKR | MODE | TRC          | SCL          | X            | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | $\Delta$ 2 | 1 | f | ( $\Delta$ ) | 1.002 MHz | ( $\Delta$ ) |  | -0.136 dB | 2 | F | 1 | f |  | 2.440854 GHz |  |  | -3.231 dBm |  |
| MKR               | MODE  | TRC | SCL  | X            | Y            | FUNCTION     | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |
| 1                 | $\Delta$ 2  | 1   | f    | ( $\Delta$ ) | 1.002 MHz    | ( $\Delta$ ) |                | -0.136 dB      |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |
| 2                 | F   | 1   | f    |              | 2.440854 GHz |              |                | -3.231 dBm     |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |
| <p>8DPSK /HCH</p> |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Marker 1 <math>\Delta</math> 1.000000000 MHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p>Center 2.479500 GHz<br/>#Res BW 20 kHz</p> <p>Span 2.000 MHz<br/>#VBW 62 kHz<br/>Sweep 4.800 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>1</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>1.000 MHz</td> <td>(<math>\Delta</math>)</td> <td></td> <td>-0.734 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.479018 GHz</td> <td></td> <td></td> <td>-2.173 dBm</td> </tr> </tbody> </table> | MKR | MODE | TRC          | SCL          | X            | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | $\Delta$ 2 | 1 | f | ( $\Delta$ ) | 1.000 MHz | ( $\Delta$ ) |  | -0.734 dB | 2 | F | 1 | f |  | 2.479018 GHz |  |  | -2.173 dBm |  |
| MKR               | MODE  | TRC | SCL  | X            | Y            | FUNCTION     | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |
| 1                 | $\Delta$ 2  | 1   | f    | ( $\Delta$ ) | 1.000 MHz    | ( $\Delta$ ) |                | -0.734 dB      |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |
| 2                 | F   | 1   | f    |              | 2.479018 GHz |              |                | -2.173 dBm     |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |              |  |  |            |  |

Right ear:  
Test Graph

Graphs

GFSK/LCH



GFSK/MCH

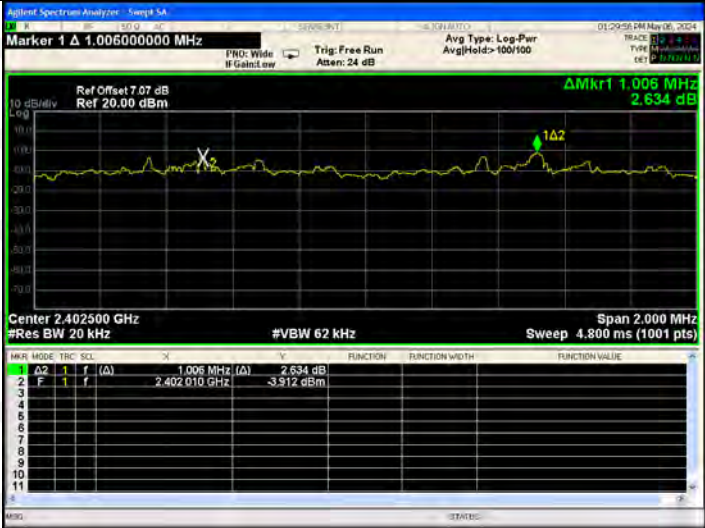




GFSK/HCH



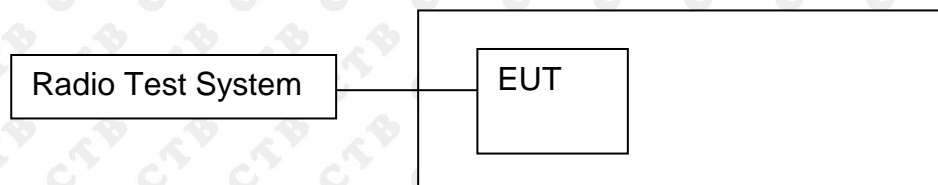
|                                    |  |  |
|------------------------------------|--|--|
| <p><math>\pi/4</math>DQPSK/LCH</p> |  |  |
| <p><math>\pi/4</math>DQPSK/MCH</p> |  |  |
| <p><math>\pi/4</math>DQPSK/HCH</p> |  |  |



| <p>8DPSK/LCH</p>  |  <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Marker 1 <math>\Delta</math> 1.006000000 MHz</p> <p>Ref Offset 7.07 dB<br/>Ref 20.00 dBm</p> <p><math>\Delta</math>Mkr1 1.006 MHz<br/>2.634 dB</p> <p>Center 2.402500 GHz<br/>#Res BW 20 kHz #VBW 62 kHz Span 2.000 MHz<br/>Sweep 4.800 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>1</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>1.006 MHz</td> <td>(<math>\Delta</math>)</td> <td></td> <td>2.634 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.402 010 GHz</td> <td></td> <td></td> <td>-3.912 dBm</td> </tr> </tbody> </table>     | MKR | MODE | TRC          | SCL           | X            | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | $\Delta$ 2 | 1 | f | ( $\Delta$ ) | 1.006 MHz | ( $\Delta$ ) |  | 2.634 dB  | 2 | F | 1 | f |  | 2.402 010 GHz |  |  | -3.912 dBm |  |
|-------------------|--|-----|------|--------------|---------------|--------------|----------------|----------------|----------------|----------------|---|------------|---|---|--------------|-----------|--------------|--|-----------|---|---|---|---|--|---------------|--|--|------------|--|
| MKR               | MODE   | TRC | SCL  | X            | Y             | FUNCTION     | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |
| 1                 | $\Delta$ 2   | 1   | f    | ( $\Delta$ ) | 1.006 MHz     | ( $\Delta$ ) |                | 2.634 dB       |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |
| 2                 | F  | 1   | f    |              | 2.402 010 GHz |              |                | -3.912 dBm     |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |
| <p>8DPSK /MCH</p> |  <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Marker 1 <math>\Delta</math> 998.000000 kHz</p> <p>Ref Offset 7.13 dB<br/>Ref 20.00 dBm</p> <p><math>\Delta</math>Mkr1 998 kHz<br/>-0.691 dB</p> <p>Center 2.441500 GHz<br/>#Res BW 20 kHz #VBW 62 kHz Span 2.000 MHz<br/>Sweep 4.800 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>1</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>998 kHz</td> <td>(<math>\Delta</math>)</td> <td></td> <td>-0.691 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.440 854 GHz</td> <td></td> <td></td> <td>-3.231 dBm</td> </tr> </tbody> </table>       | MKR | MODE | TRC          | SCL           | X            | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | $\Delta$ 2 | 1 | f | ( $\Delta$ ) | 998 kHz   | ( $\Delta$ ) |  | -0.691 dB | 2 | F | 1 | f |  | 2.440 854 GHz |  |  | -3.231 dBm |  |
| MKR               | MODE   | TRC | SCL  | X            | Y             | FUNCTION     | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |
| 1                 | $\Delta$ 2   | 1   | f    | ( $\Delta$ ) | 998 kHz       | ( $\Delta$ ) |                | -0.691 dB      |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |
| 2                 | F  | 1   | f    |              | 2.440 854 GHz |              |                | -3.231 dBm     |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |
| <p>8DPSK /HCH</p> |  <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Marker 1 <math>\Delta</math> 1.002000000 MHz</p> <p>Ref Offset 7.16 dB<br/>Ref 20.00 dBm</p> <p><math>\Delta</math>Mkr1 1.002 MHz<br/>-0.443 dB</p> <p>Center 2.479500 GHz<br/>#Res BW 20 kHz #VBW 62 kHz Span 2.000 MHz<br/>Sweep 4.800 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\Delta</math>2</td> <td>1</td> <td>f</td> <td>(<math>\Delta</math>)</td> <td>1.002 MHz</td> <td>(<math>\Delta</math>)</td> <td></td> <td>-0.443 dB</td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>f</td> <td></td> <td>2.479 018 GHz</td> <td></td> <td></td> <td>-2.173 dBm</td> </tr> </tbody> </table> | MKR | MODE | TRC          | SCL           | X            | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | $\Delta$ 2 | 1 | f | ( $\Delta$ ) | 1.002 MHz | ( $\Delta$ ) |  | -0.443 dB | 2 | F | 1 | f |  | 2.479 018 GHz |  |  | -2.173 dBm |  |
| MKR               | MODE   | TRC | SCL  | X            | Y             | FUNCTION     | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |
| 1                 | $\Delta$ 2   | 1   | f    | ( $\Delta$ ) | 1.002 MHz     | ( $\Delta$ ) |                | -0.443 dB      |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |
| 2                 | F  | 1   | f    |              | 2.479 018 GHz |              |                | -2.173 dBm     |                |                |   |            |   |   |              |           |              |  |           |   |   |   |   |  |               |  |  |            |  |

## 12. HOPPING CHANNEL NUMBER

### 12.1 Block Diagram Of Test Setup



### 12.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

### 12.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 100kHz. VBW = 300kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.
4. Set the spectrum analyzer: Start Frequency = 2.4GHz, Stop Frequency = 2.4835GHz. Sweep=auto;

### 12.4 Test Result

| Mode          | Channel. | Number of Hopping Channel | Limit     | Verdict |
|---------------|----------|---------------------------|-----------|---------|
| GFSK          | Hop      | 79                        | $\geq 15$ | PASS    |
| $\pi/4$ DQPSK | Hop      | 79                        | $\geq 15$ | PASS    |
| 8DPSK         | Hop      | 79                        | $\geq 15$ | PASS    |

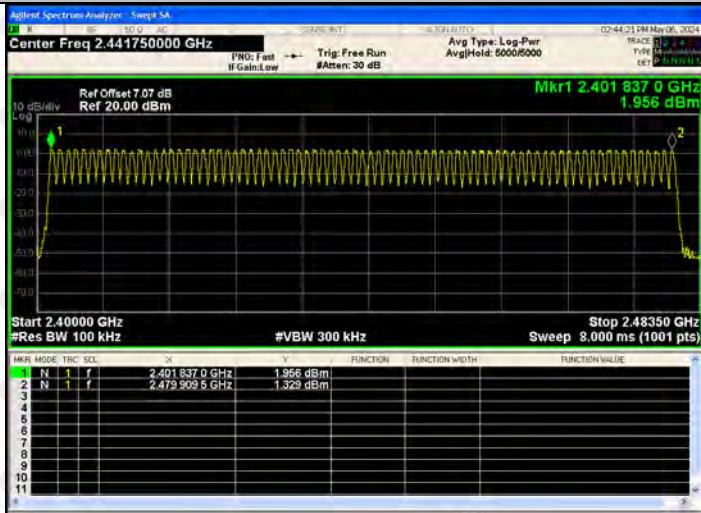
Right ear:

| Mode          | Channel. | Number of Hopping Channel | Limit     | Verdict |
|---------------|----------|---------------------------|-----------|---------|
| GFSK          | Hop      | 79                        | $\geq 15$ | PASS    |
| $\pi/4$ DQPSK | Hop      | 79                        | $\geq 15$ | PASS    |
| 8DPSK         | Hop      | 79                        | $\geq 15$ | PASS    |

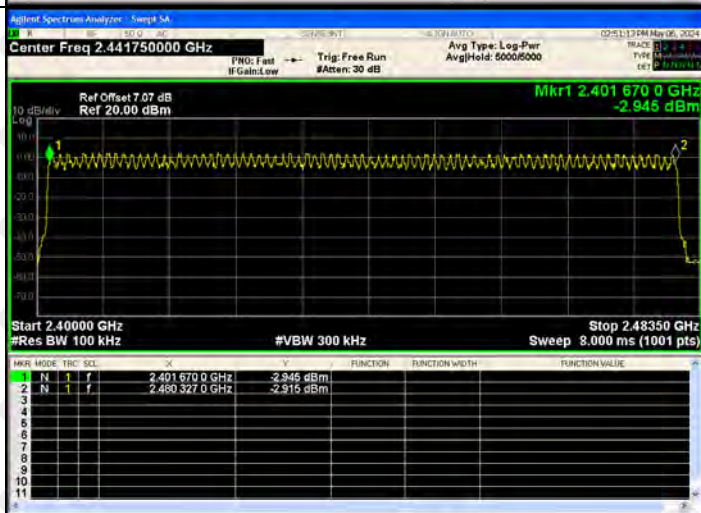
Left ear:  
Test Graph

Graphs

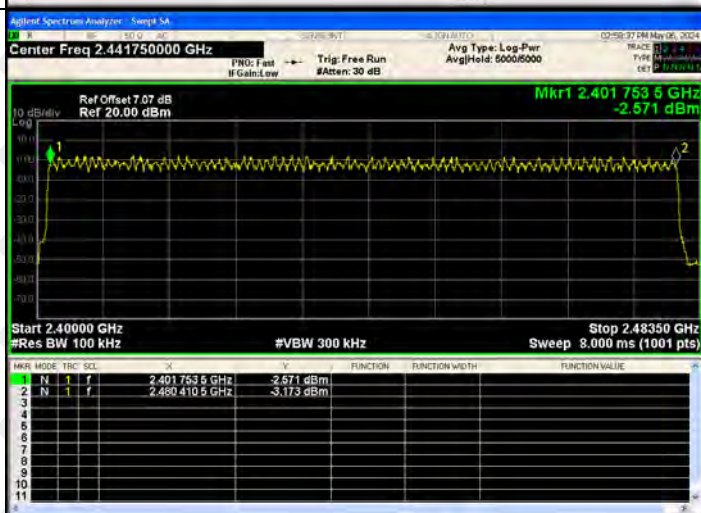
GFSK/Hop



$\pi/4$ DQPSK/Hop



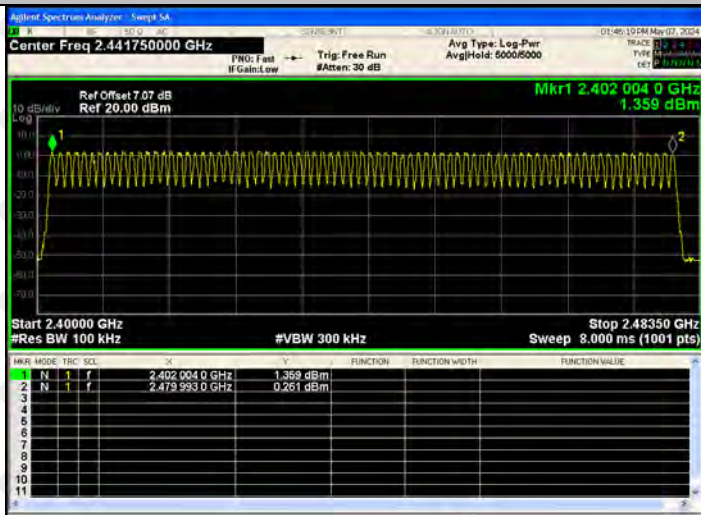
8DPSK/Hop



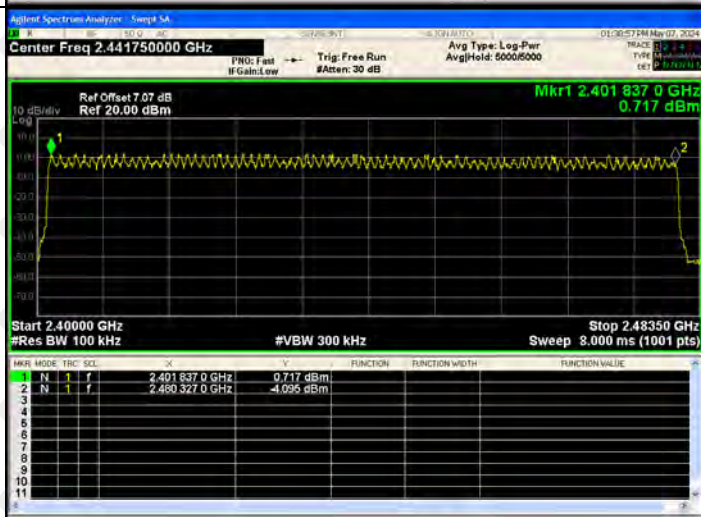
Right ear:  
Test Graph

### Graphs

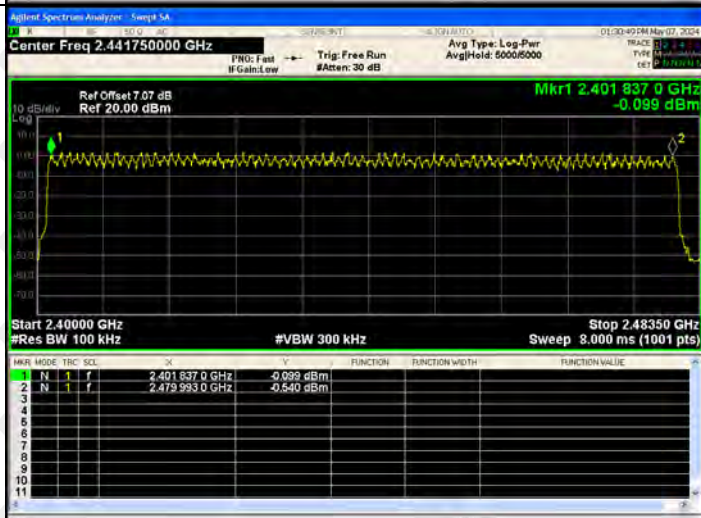
GFSK/Hop



$\pi/4$ DQPSK/Hop

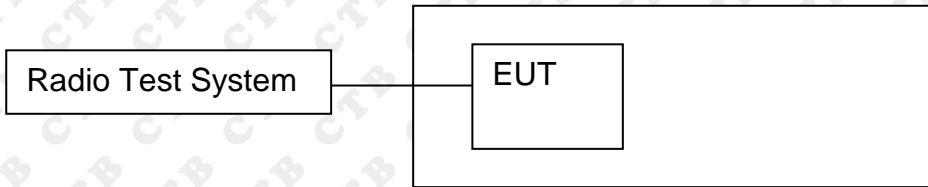


8DPSK/Hop



### 13. DWELL TIME

#### 13.1 Block Diagram Of Test Setup



#### 13.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

#### 13.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set spectrum analyzer span = 0. Centred on a hopping channel;
3. Set RBW = 1MHz and VBW = 3MHz. Sweep = as necessary to capture the entire dwell time per hopping channel. Set the EUT for DH5, DH3 and DH1 packet transmitting.
4. Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g.. data rate, modulation format, etc.). repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

13.4 Test Result

Left ear:

Worst case-GFSK:

| Mode | Packet | Channel | Pulse Time (ms) | Total Dwell Time (ms) | Limit (ms) | Verdict |
|------|--------|---------|-----------------|-----------------------|------------|---------|
| GFSK | DH1    | LCH     | 0.383           | 122.56                | 400        | PASS    |
|      | DH1    | MCH     | 0.382           | 122.24                | 400        | PASS    |
|      | DH1    | HCH     | 0.383           | 122.56                | 400        | PASS    |
|      | DH3    | LCH     | 1.644           | 263.04                | 400        | PASS    |
|      | DH3    | MCH     | 1.644           | 263.04                | 400        | PASS    |
|      | DH3    | HCH     | 1.644           | 263.04                | 400        | PASS    |
|      | DH5    | LCH     | 2.895           | 308.8                 | 400        | PASS    |
|      | DH5    | MCH     | 2.895           | 308.8                 | 400        | PASS    |
|      | DH5    | HCH     | 2.894           | 308.693               | 400        | PASS    |

Right ear:

Worst case-GFSK:

| Mode | Packet | Channel | Pulse Time (ms) | Total Dwell Time (ms) | Limit (ms) | Verdict |
|------|--------|---------|-----------------|-----------------------|------------|---------|
| GFSK | DH1    | LCH     | 0.383           | 122.56                | 400        | PASS    |
|      | DH1    | MCH     | 0.383           | 122.56                | 400        | PASS    |
|      | DH1    | HCH     | 0.383           | 122.56                | 400        | PASS    |
|      | DH3    | LCH     | 1.644           | 263.04                | 400        | PASS    |
|      | DH3    | MCH     | 1.644           | 263.04                | 400        | PASS    |
|      | DH3    | HCH     | 1.644           | 263.04                | 400        | PASS    |
|      | DH5    | LCH     | 2.895           | 308.8                 | 400        | PASS    |
|      | DH5    | MCH     | 2.895           | 308.8                 | 400        | PASS    |
|      | DH5    | HCH     | 2.895           | 308.8                 | 400        | PASS    |

Remark: DH5 Packet permit maximum 1600 / 79 / 6 hops per second in each channel (5 time slots RX, 1 time slot TX).

DH3 Packet permit maximum 1600 / 79 / 4 hops per second in each channel (3 time slots RX, 1 time slot TX).

DH1 Packet permit maximum 1600 / 79 / 2 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the Dwell Time can be calculated as follows:

DH5:  $1600/79/6 \times 0.4 \times 79 \times (\text{MkrDelta}) / 1000$

DH3:  $1600/79/4 \times 0.4 \times 79 \times (\text{MkrDelta}) / 1000$

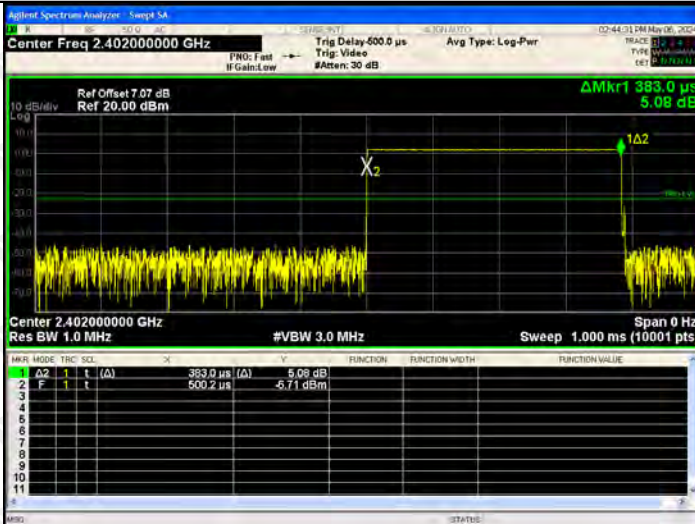
DH1:  $1600/79/2 \times 0.4 \times 79 \times (\text{MkrDelta}) / 1000$

Remark: Mkr Delta is once pulse time.

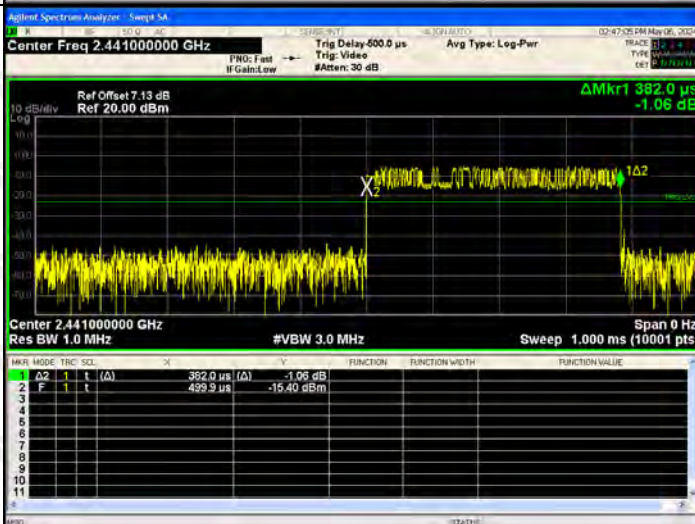
Left ear:  
Test Graph

Graphs

GFSK\_DH1/LCH



GFSK\_DH1/MCH



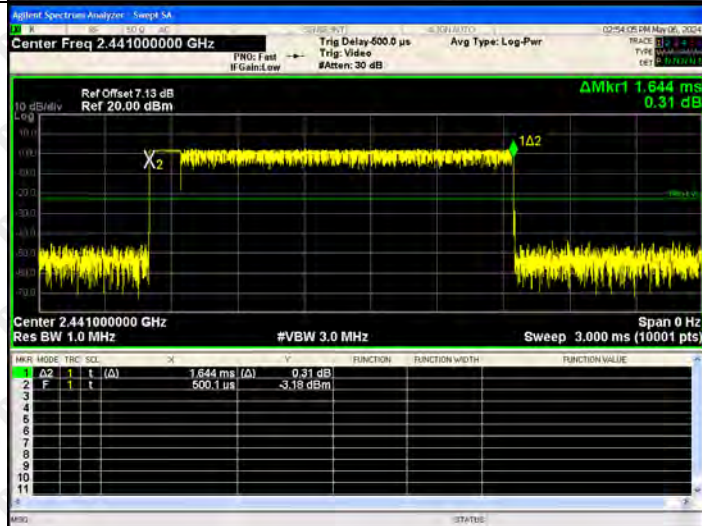
GFSK\_DH1/HCH



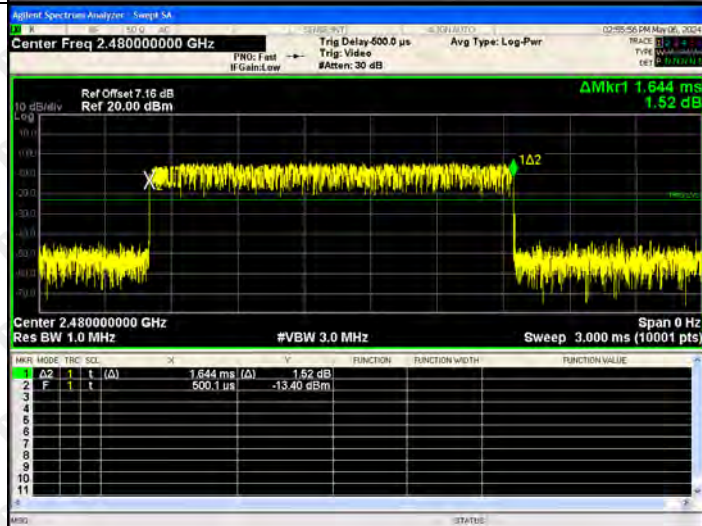
GFSK\_DH3/LCH



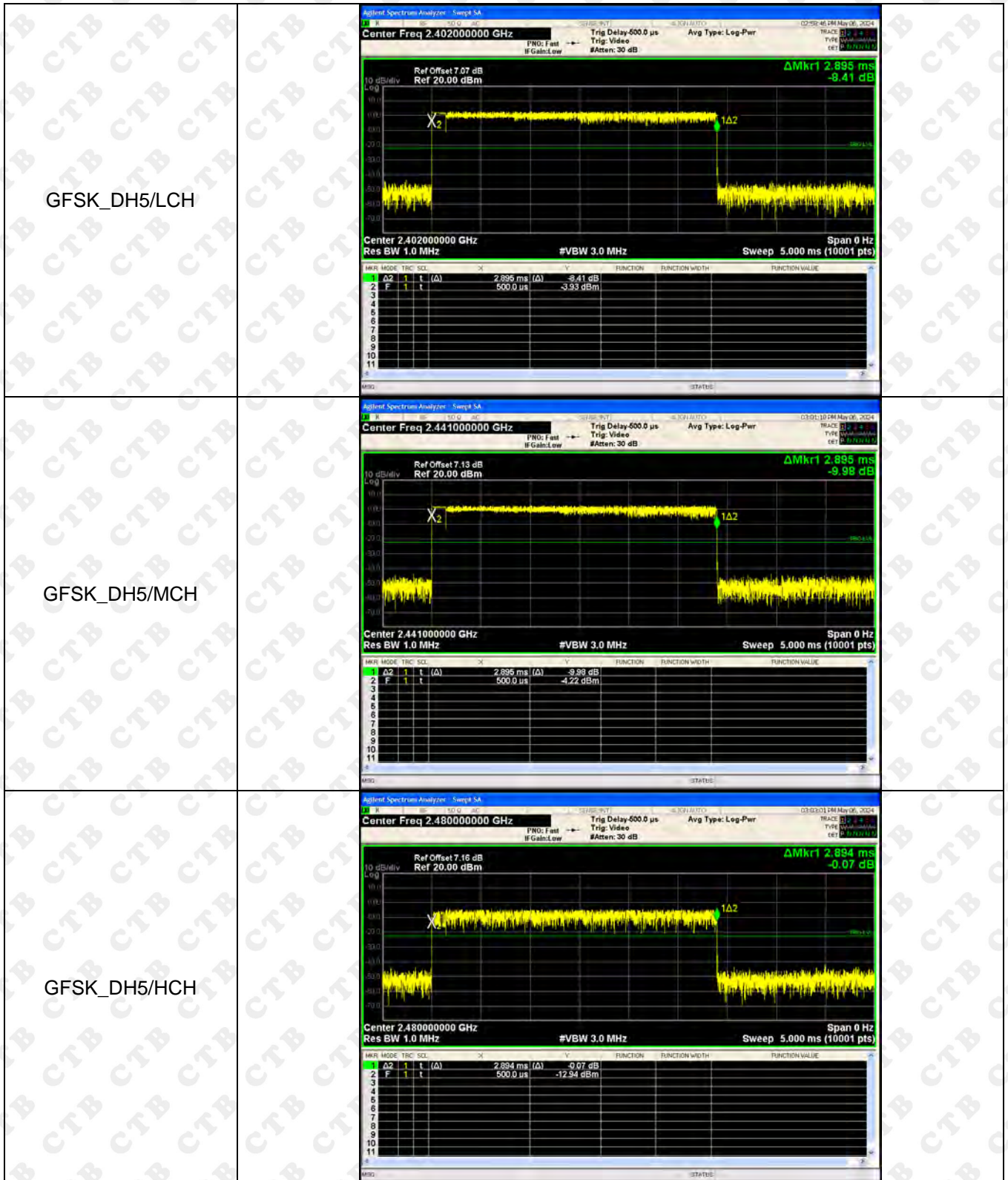
GFSK\_DH3/MCH



GFSK\_DH3/HCH







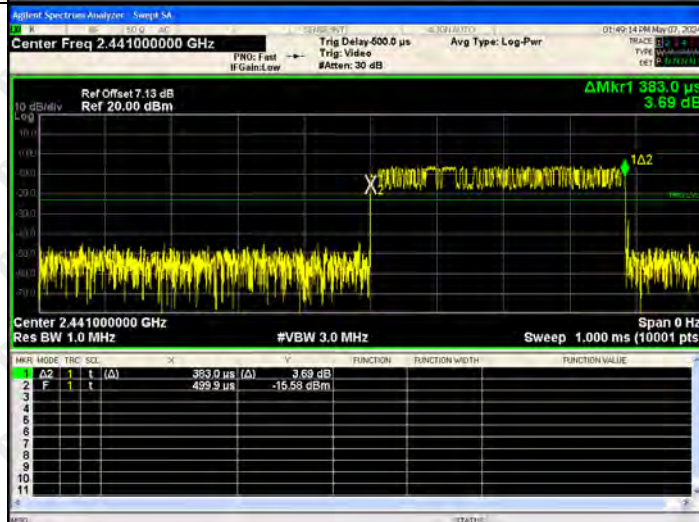
Right ear:  
Test Graph

Graphs

GFSK\_DH1/LCH



GFSK\_DH1/MCH



GFSK\_DH1/HCH



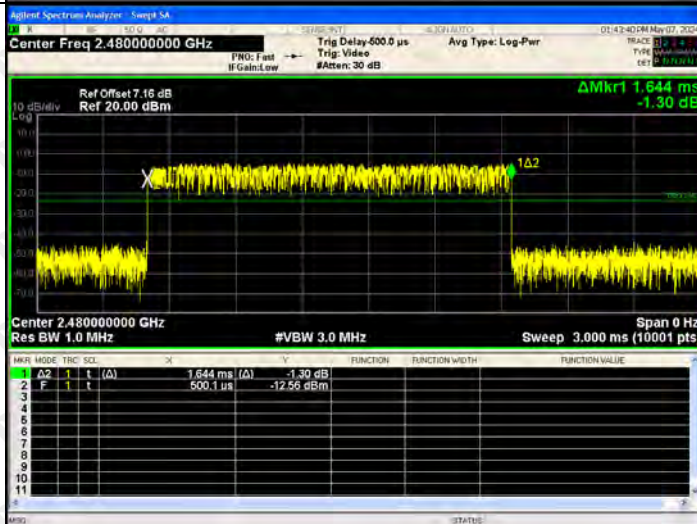
GFSK\_DH3/LCH



GFSK\_DH3/MCH



GFSK\_DH3/HCH



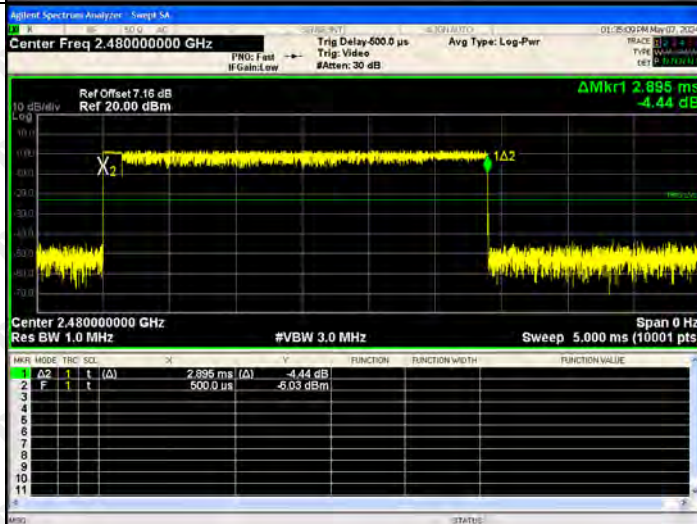
GFSK\_DH5/LCH



GFSK\_DH5/MCH



GFSK\_DH5/HCH



### 14. PSEUDORANDOM FREQUENCY

#### 14.1 Limit

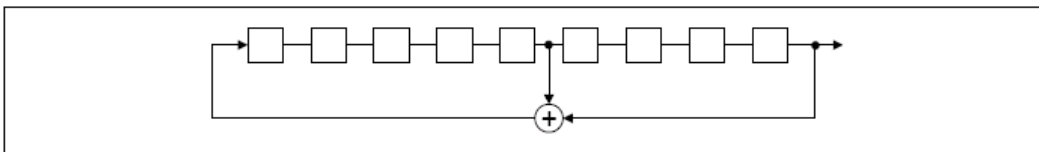
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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 Pseudorandom 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 hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

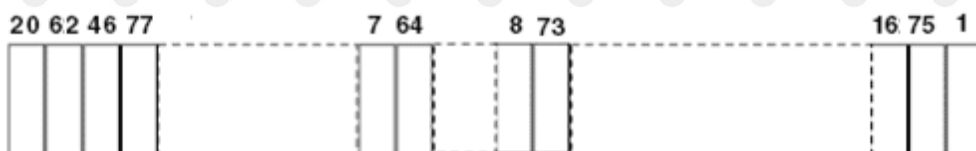
#### 14.2 Test procedure

The pseudorandom sequence may be generated in a nine-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; i.e. the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence:  $2^9 - 1 = 511$  bits
- Longest sequence of zeros: 8 (non-inverted signal)



An example of Pseudorandom Frequency Hopping Sequence as follow:



Each frequency used equally on the average by each transmitter.  
The system receivers have input bandwidths that match the hopping channel bandwidths of their Corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

### 14.3 Test Result

The device does not have the ability to be coordinated with other FHSS systems in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitters.

## 15. ANTENNA REQUIREMENT

### 15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### EUT Antenna:

The antenna is chip antenna. The best case gain of the antenna is 1.7dBi.

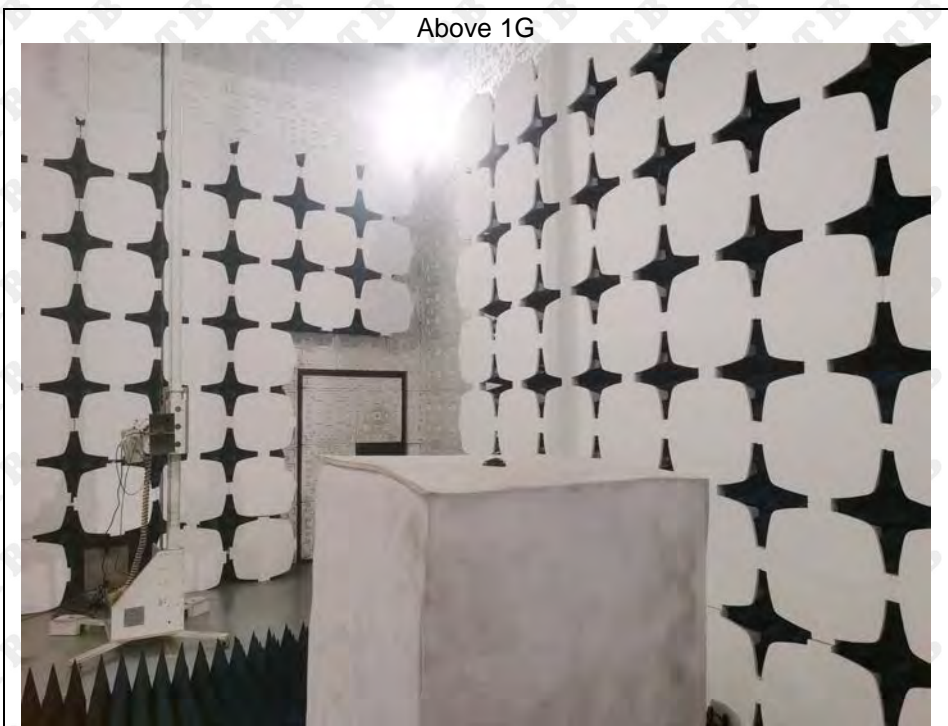
## 16. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G

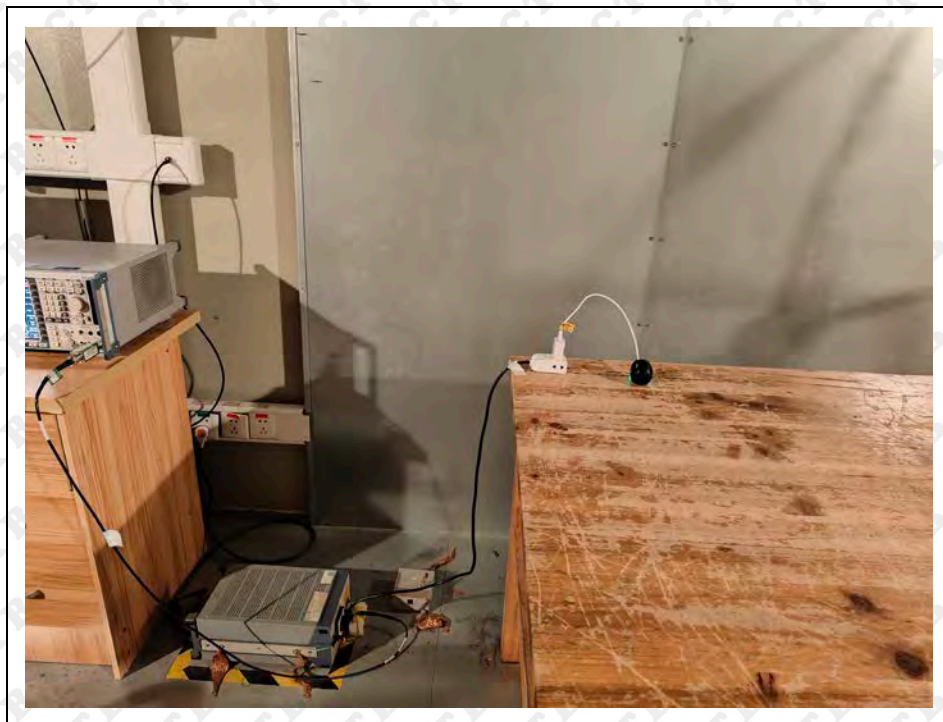


Above 1G





## Conducted emissions



※※※※ END OF REPORT ※※※※