

## TEST REPORT

**FCC Standards : FCC 47 CFR part 15 subpart C**  
**Innovation, Science and Economic Development Canada Standards**  
**:RSS-247 Issue 2 & RSS-GEN Issue 4**

Test Report No. : CTK-2017-00684  
Date of Issue : 2017-04-17  
FCC ID : ZKJ-BCEA001  
Certification Number : 10229A-BCEA001  
ISED  
Model/Type No. : BCEA001  
Kind of Product : NewFI Mobile  
Applicant : Haier US Appliance Solutions, Inc.  
Applicant Address : Appliance Park, AP2-226, Louisville, KY 40225, United States  
Manufacturer : Haier US Appliance Solutions, Inc.  
Manufacturer Address : Appliance Park, AP2-226, Louisville, KY 40225, United States  
Contact Person : Park, Hansung / Research Engineer  
Telephone : +81-31-8094-6732  
Received Date : 2017-03-23  
Test period : Start : 2017-04-14 End : 2017-04-17  
Test Results : ☒ In Compliance ☐ Not in Compliance

The test results presented in this report relate only to the object tested.

Tested by



Ji-Hye, Kim  
Test Engineer  
Date: 2017-04-17

Reviewed by



Young-Joon, Park  
Technical Manager  
Date: 2017-04-17



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### REPORT REVISION HISTORY

| Date       | Revision                | Page No |
|------------|-------------------------|---------|
| 2017-04-17 | Issued (CTK-2017-00684) | All     |
|            |                         |         |
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### 1.0 General Product Description

|                         |                                                                      |
|-------------------------|----------------------------------------------------------------------|
| Basic Model/Type No.    | BCEA001                                                              |
| Serial number           | Prototype                                                            |
| EUT condition           | Pre-production, not damaged                                          |
| Antenna type            | Chip antenna      Gain 2.07 dBi                                      |
| Frequency Range         | 2402 MHz - 2480 MHz                                                  |
| RF power                | 8.412 dBm Peak Conducted (GFSK)<br>7.137 dBm Peak Conducted (8-DPSK) |
| Number of channels      | 79                                                                   |
| Channel Spacing         | 1 MHz                                                                |
| Channel Access Protocol | Frequency Hopping                                                    |
| Type of Modulation      | GFSK(1 Mbps), DQPSK(2 Mbps), 8-DPSK(3 Mbps)                          |
| Power Source            | DC 12 V                                                              |
| Hardware Rev            | PP1 Revision 1                                                       |
| Software Rev            | V0.1.0.18                                                            |
| Firmware Rev            | NA                                                                   |

### 1.1 Tested Frequency

|                 | LOW  | MID  | HIGH |
|-----------------|------|------|------|
| Frequency (MHz) | 2402 | 2441 | 2480 |

### 1.2 Tested Mode

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports.
- Following channel(s) was (were) selected for the final test as listed below.

| Tested Ch      | Modulation Technology | Modulation Type | Packet Type |
|----------------|-----------------------|-----------------|-------------|
| Low, Mid, High | FHSS                  | GFSK            | DH 5        |
| Low, Mid, High | FHSS                  | 8-DPSK          | 3DH 5       |

## 1.3 EUT Operation Test Setup

For Bluetooth function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

## 1.4 EUT Exercise of Software

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. The software is using the android system to internal memory.

## 1.5 Device Modifications

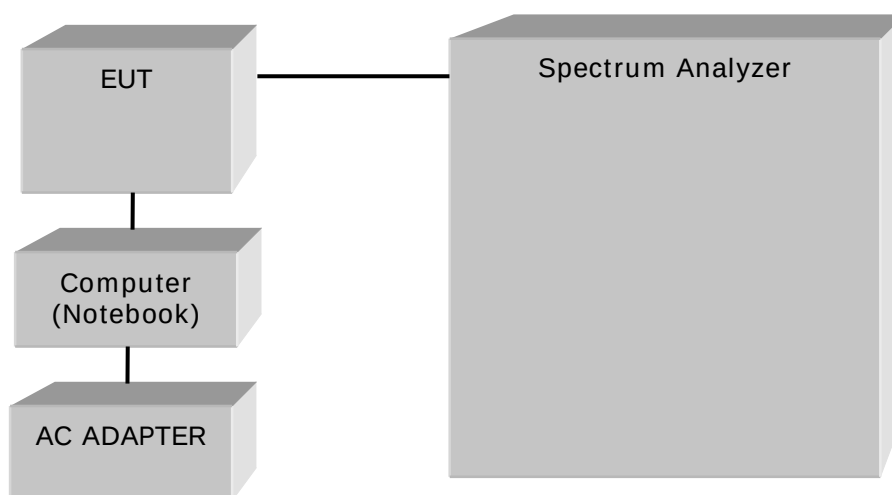
The following modifications was applied by the applicant:

Not applicable

## 1.6 Peripheral Devices

| Device        | Manufacturer | Model No.      | Serial No. |
|---------------|--------------|----------------|------------|
| Note Computer | HP           | ProBook 650 G1 | 5CG5114KD2 |
| AC ADAPTER    | HP           | PPP012D-S      | -          |

## 1.7 Configuration of System under Test



## 1.8 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

## 1.9 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

## 1.10 Laboratory Accreditations and Listings

| Country | Agency | Scope of Accreditation                                                                           | Registration Number                | Logo                                                                                  |
|---------|--------|--------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------|
| USA     | FCC    | FCC Part 15 & 18<br>EMI (Electromagnetic Interference / Emission)                                | 805871                             |   |
| CANADA  | ISED   | ISED<br>EMI (3/10m test site)                                                                    | 8737A-2                            |  |
| JAPAN   | VCCI   | VCCI V-3<br>EMI (Electromagnetic Interference / Emission)                                        | C-986<br>T-1843<br>R-3627<br>G-387 |  |
| KOREA   | MSIP   | EMI (Electromagnetic Interference / Emission)<br>EMS (Electromagnetic Susceptibility / Immunity) | KR0025                             |  |

## 2.0 Summary of tests

| FCC Part Section(s) | ISED Part Section(s)   | Parameter                     | Test Condition | Status (note 1) |
|---------------------|------------------------|-------------------------------|----------------|-----------------|
| 15.247(a)           | RSS-247 Issue 2 5.1b)  | Carrier Frequency Separation  | Conducted      | C               |
| 15.247(a)           | RSS-247 Issue 2 5.1d)  | Number of Hopping Frequencies |                | C               |
| 15.247(a)           | RSS-247 Issue 2 5.1    | 20 dB Bandwidth               |                | C               |
| 15.247              | RSS-247 Issue 2 5.1d)  | Dwell Time                    |                | C               |
| 15.247(b)           | RSS-247 Issue 2 5.4 b) | Transmitter Output Power      |                | C               |
| 15.247(d)           | RSS-247 Issue 2 5.5    | Conducted Spurious emission   |                | C               |
| 15.247(d)           | RSS-247 Issue 2 5.5    | Band Edge                     |                | C               |
| 15.209              | RSS-247 Issue 2 5.5    | Field Strength of Harmonics   | Radiated       | C               |
| 15.207              | RSS-GEN Issue 4 8.8    | AC Conducted Emissions        | Line Conducted | C               |

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:

- FCC Part 15.247, ISED RSS-247 Issue 2

The tests were performed according to the method of measurements prescribed in DA 00-705 and ANSI C63.10 -2013.

## 2.1 Requirements

### 2.1.1 Carrier Frequency Separation

#### Test Procedures(ANSI C63.10-2013 7.8.2)

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna terminal, while EUT has its hopping function enabled.  
After the trace being stable, the reading value between the peaks of the adjacent channels using the marker-delta function was recorded as the measurement results.

#### Test Settings :

- a) Span = 5 MHz (wide enough to capture the peaks of two adjacent channels)
- b) RBW = 30 kHz (Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel)
- c) VBW = 30 kHz ( $\geq$  RBW)
- d) Sweep = auto
- e) Detector function = peak
- f) Trace = max hold

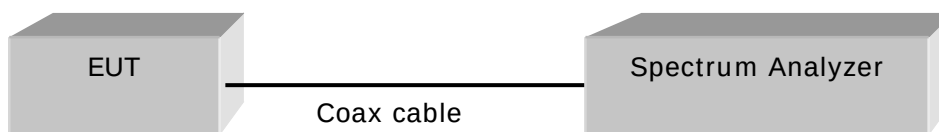


Figure 1 : Measurement setup for the carrier frequency separation

#### Minimum Standard :

Carrier Frequency Separation > 25kHz

#### Test Data :

##### Test mode : GFSK, CFG PKT Packet Type : 15 Packet Size : 339(DH5)

| Channel | Adjacent Hopping Channel Separation (kHz) | Two-third of 20dB bandwidth (kHz) | Minimum Bandwidth (kHz) | Result   |
|---------|-------------------------------------------|-----------------------------------|-------------------------|----------|
| 2441MHz | 1000                                      | 644.8                             | 25                      | Complies |

##### Test mode : 8-DPSK, CFG PKT Packet Type : 31 Packet Size : 1021(3DH5)

| Channel | Adjacent Hopping Channel Separation (kHz) | Two-third of 20dB bandwidth (kHz) | Minimum Bandwidth (kHz) | Result   |
|---------|-------------------------------------------|-----------------------------------|-------------------------|----------|
| 2441MHz | 1000                                      | 926                               | 25                      | Complies |

See next pages for actual measured spectrum plots.



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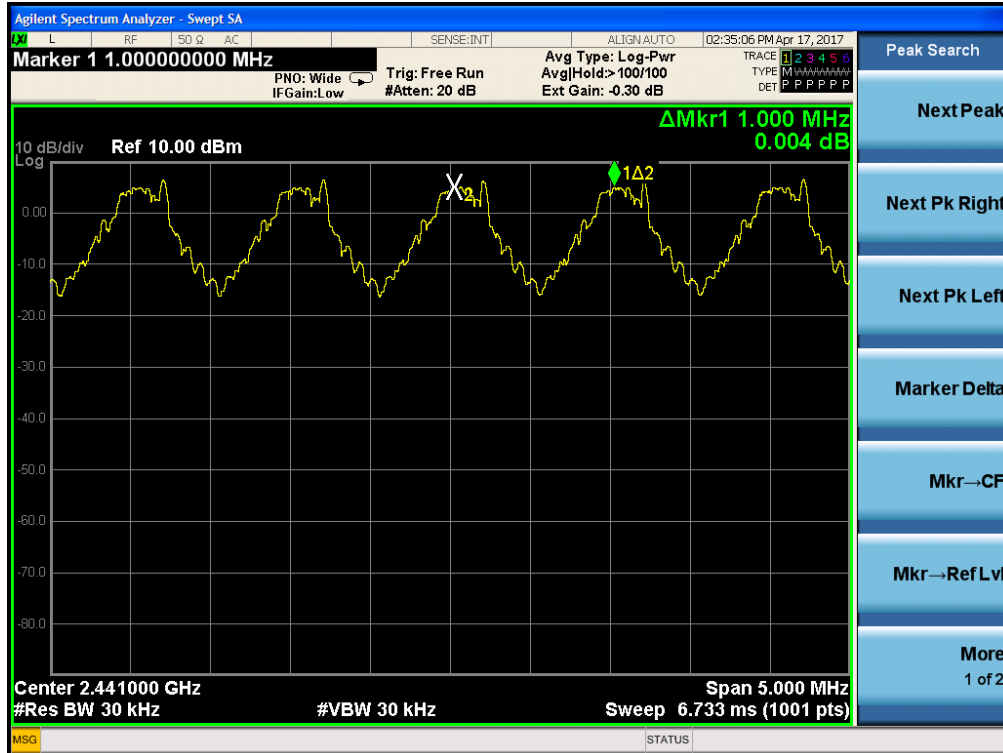
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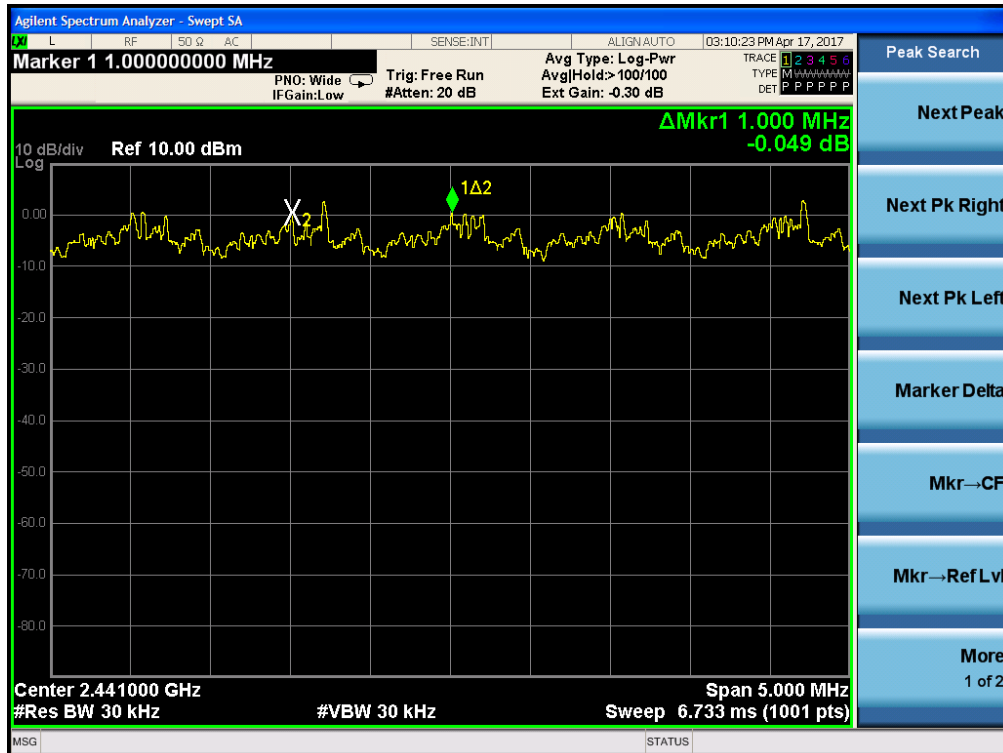
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### Carrier Frequency Separation

#### GFSK



#### 8-DPSK







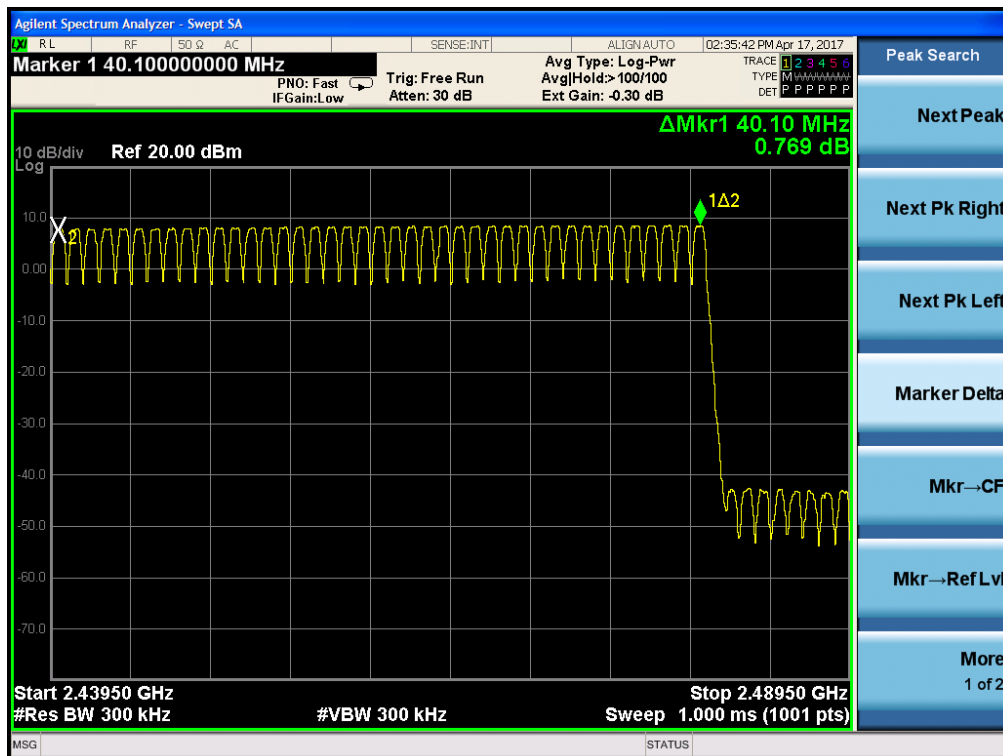
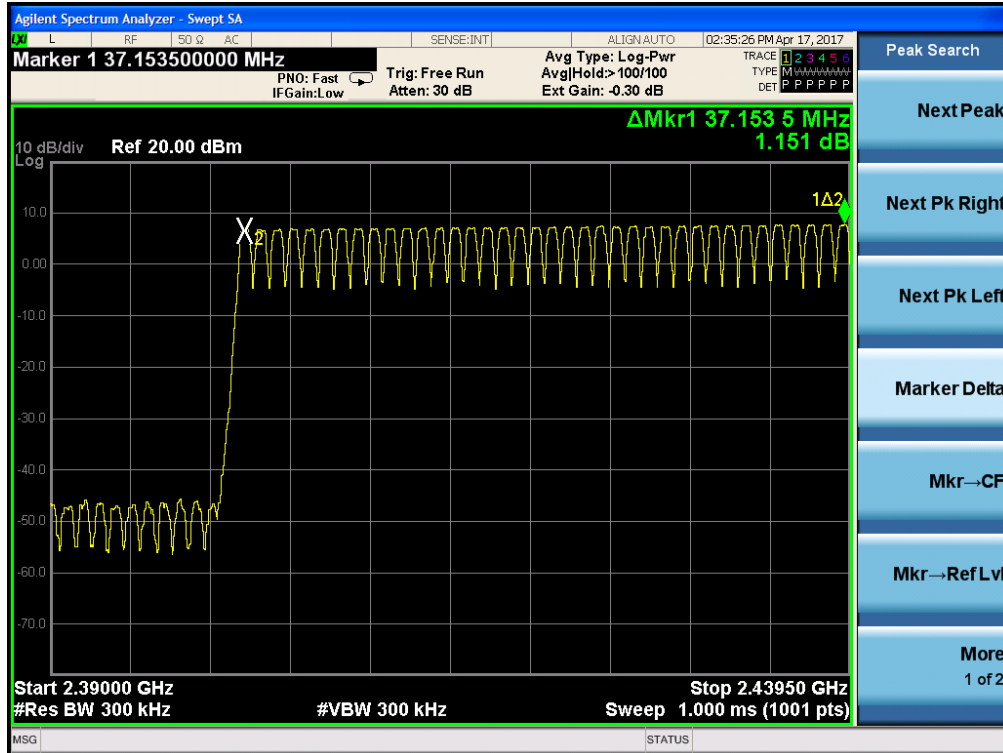
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### Number of Hopping Frequencies

#### GFSK





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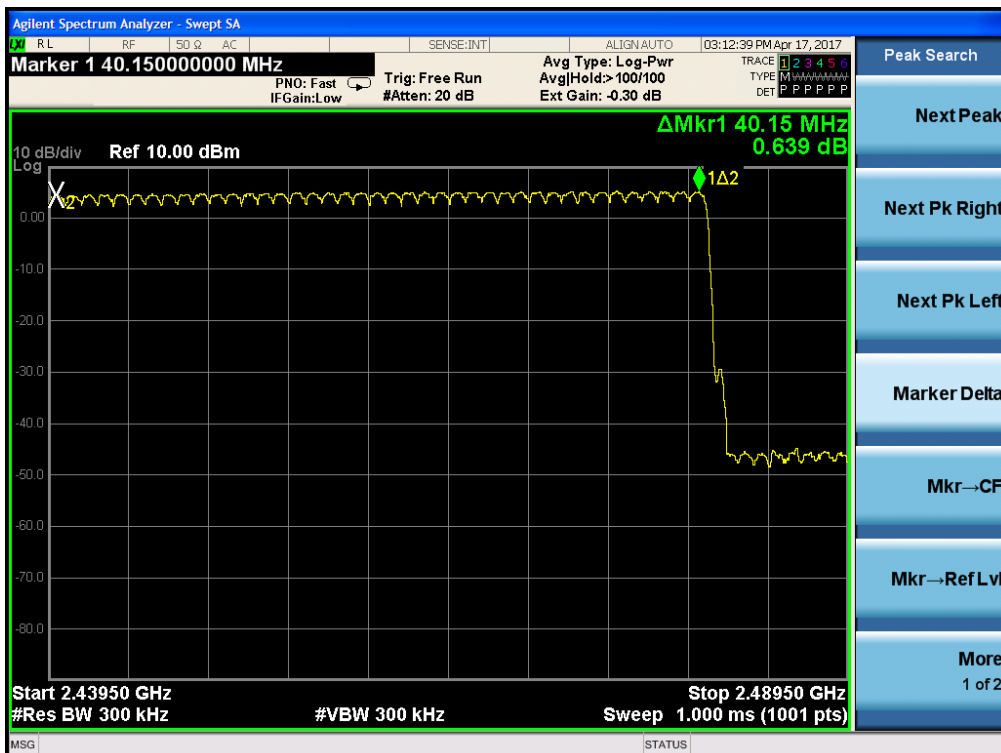
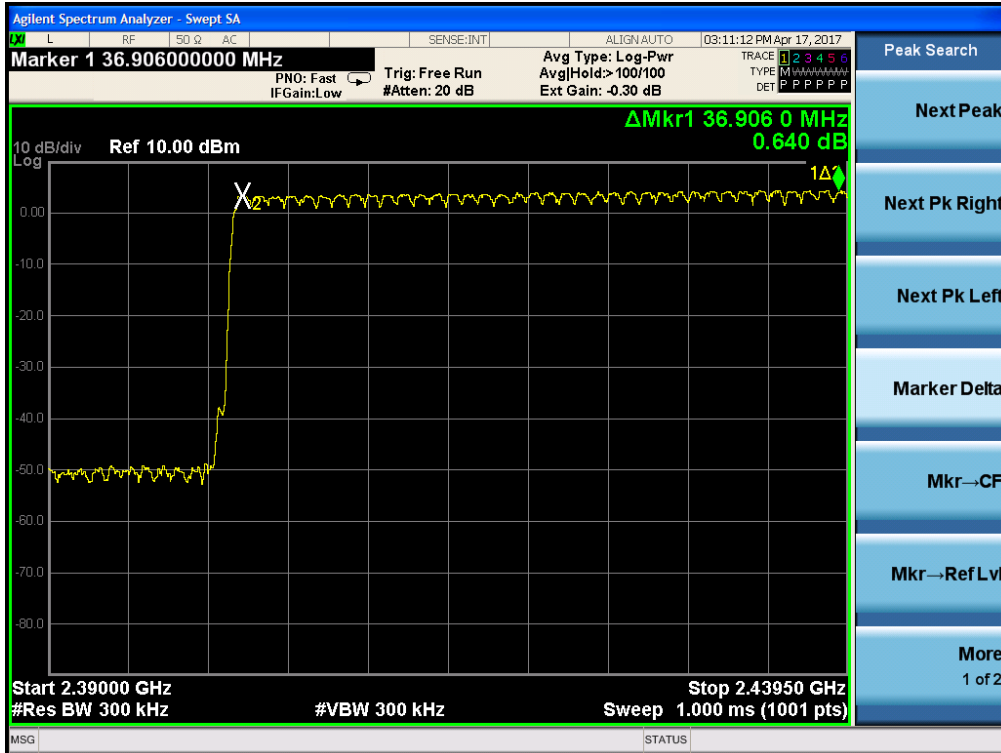
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### 8-DPSK



### 2.1.3 20 dB bandwidth

#### Test Procedures(ANSI C63.10-2013 6.9.2)

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 20 dB relative to the maximum level measured in the fundamental emission.

#### Test Procedures(ANSI C63.10-2013 6.9.3)

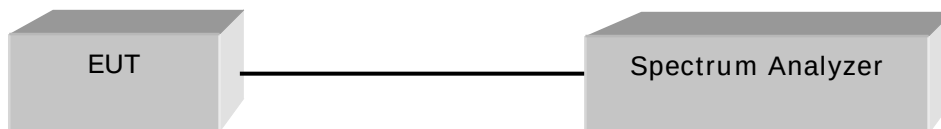
The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

#### Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) Span = 3 MHz (between 2 times and 5 times the OBW)
- b) RBW = 30 kHz (1% to 5% of the OBW)
- c) VBW = 100 kHz (approximately 3 times RBW)
- d) Sweep = auto
- e) Detector function = peak
- f) Trace = max hold



#### **Limit :**

N/A



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### Test Data (20 dB bandwidth)

#### Test mode : GFSK, CFG PKT Packet Type : 15 Packet Size : 339(DH5)

| Frequency (MHz) | Channel Number. | Measured Bandwidth (MHz) | Result   |
|-----------------|-----------------|--------------------------|----------|
| 2402            | 0               | 0.967                    | Complies |
| 2441            | 39              | 0.970                    | Complies |
| 2480            | 78              | 0.971                    | Complies |

#### Test mode : 8-DPSK, CFG PKT Packet Type : 31 Packet Size : 1021(3DH5)

| Frequency (MHz) | Channel Number. | Measured Bandwidth (MHz) | Result   |
|-----------------|-----------------|--------------------------|----------|
| 2402            | 0               | 1.384                    | Complies |
| 2441            | 39              | 1.389                    | Complies |
| 2480            | 78              | 1.382                    | Complies |

### Test Data (Occupied Bandwidth)

#### Test mode : GFSK, CFG PKT Packet Type : 15 Packet Size : 339(DH5)

| Frequency (MHz) | Channel Number. | Measured Bandwidth (MHz) | Result   |
|-----------------|-----------------|--------------------------|----------|
| 2402            | 0               | 0.907                    | Complies |
| 2441            | 39              | 0.907                    | Complies |
| 2480            | 78              | 0.909                    | Complies |

#### Test mode : 8-DPSK, CFG PKT Packet Type : 31 Packet Size : 1021(3DH5)

| Frequency (MHz) | Channel Number. | Measured Bandwidth (MHz) | Result   |
|-----------------|-----------------|--------------------------|----------|
| 2402            | 0               | 1.235                    | Complies |
| 2441            | 39              | 1.236                    | Complies |
| 2480            | 78              | 1.238                    | Complies |

See next pages for actual measured spectrum plots.



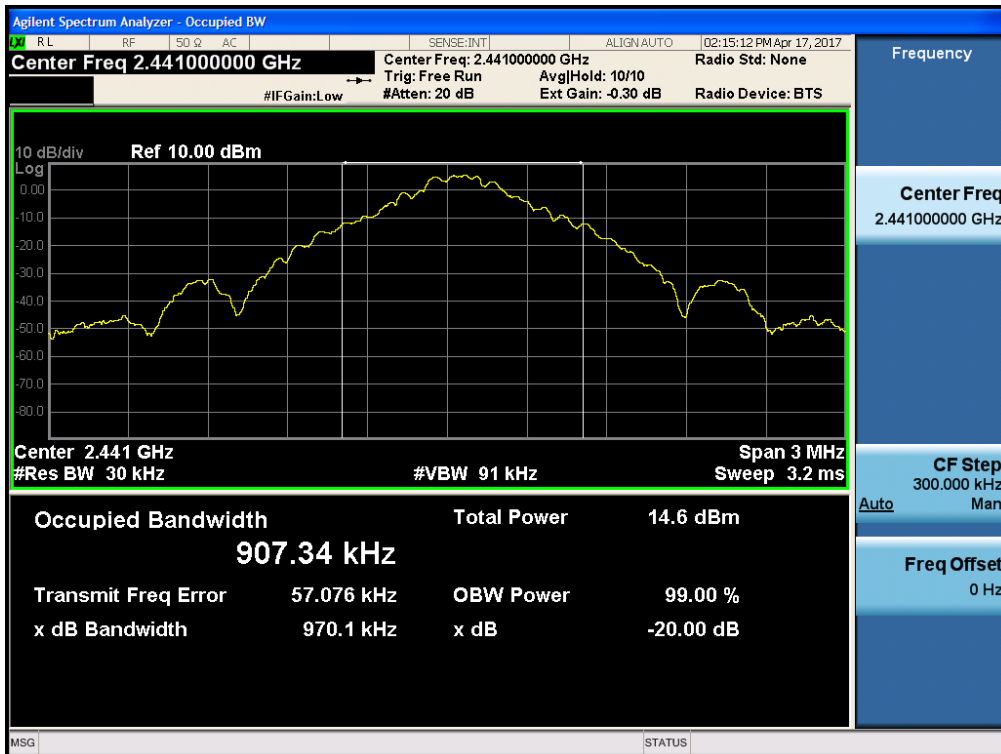
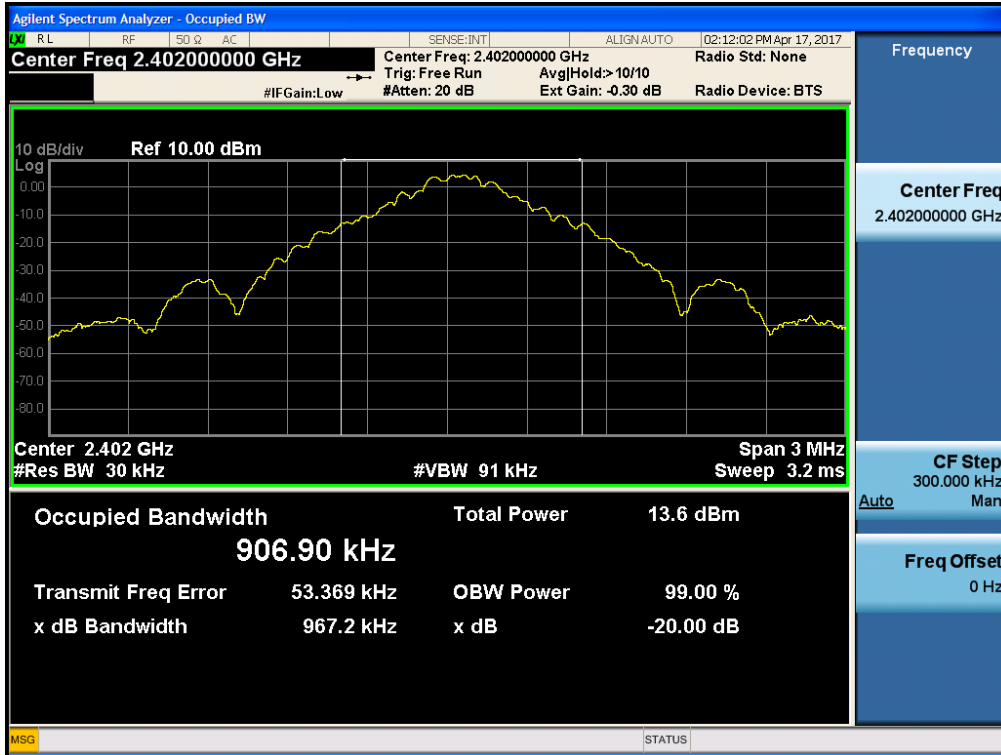
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### 20 dB Bandwidth, Occupied Bandwidth

#### GFSK





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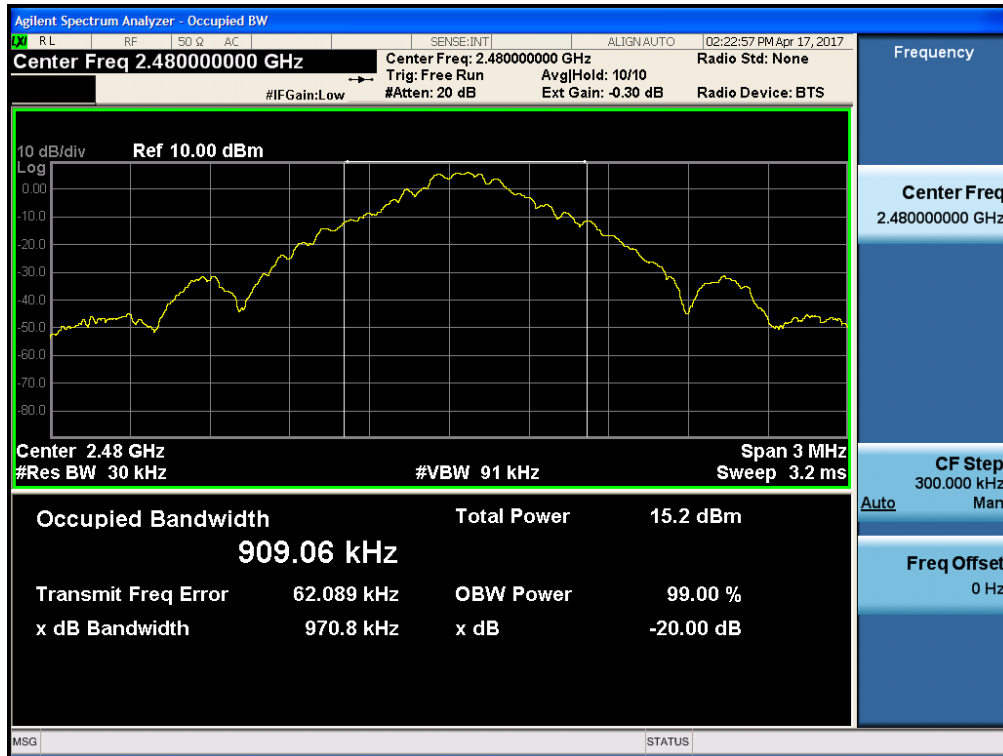
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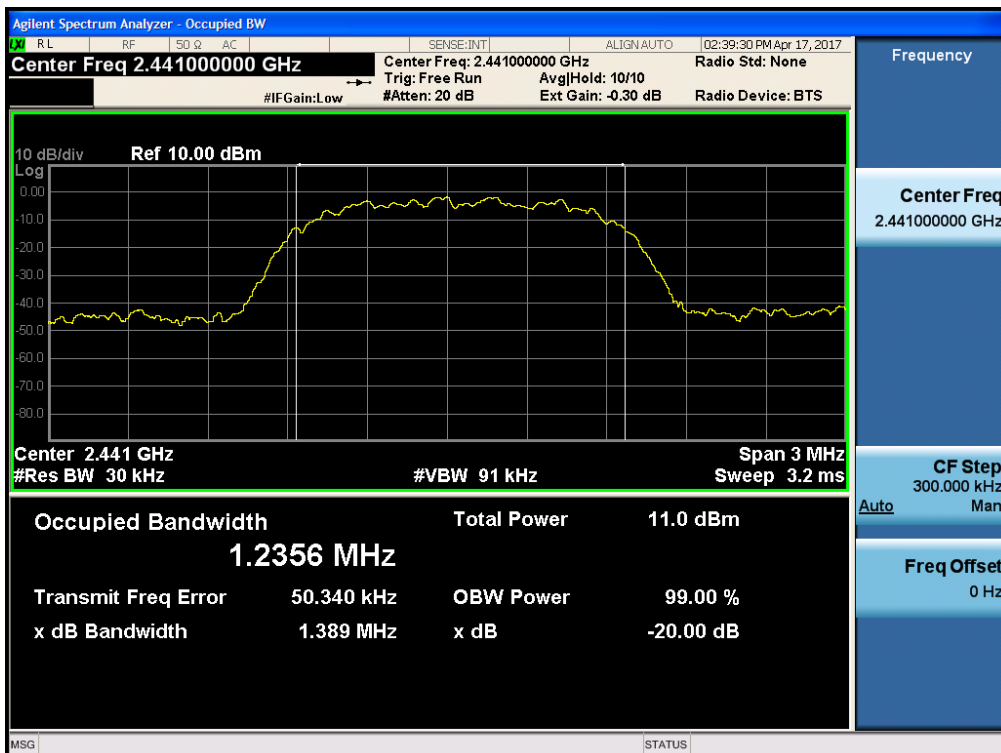
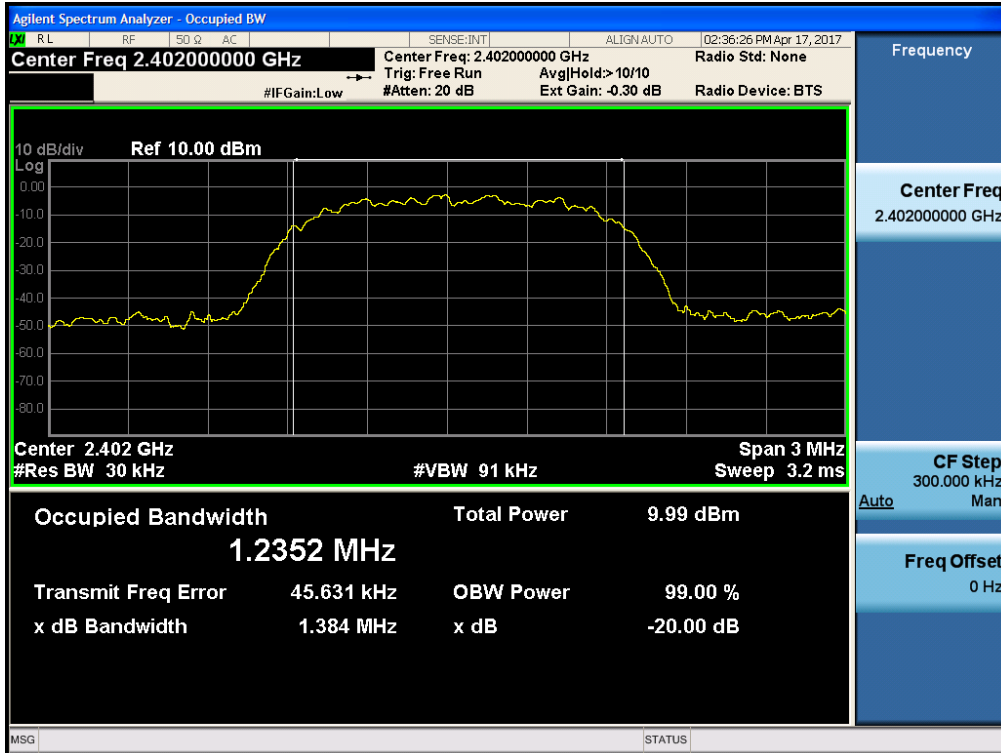
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### 8-DPSK





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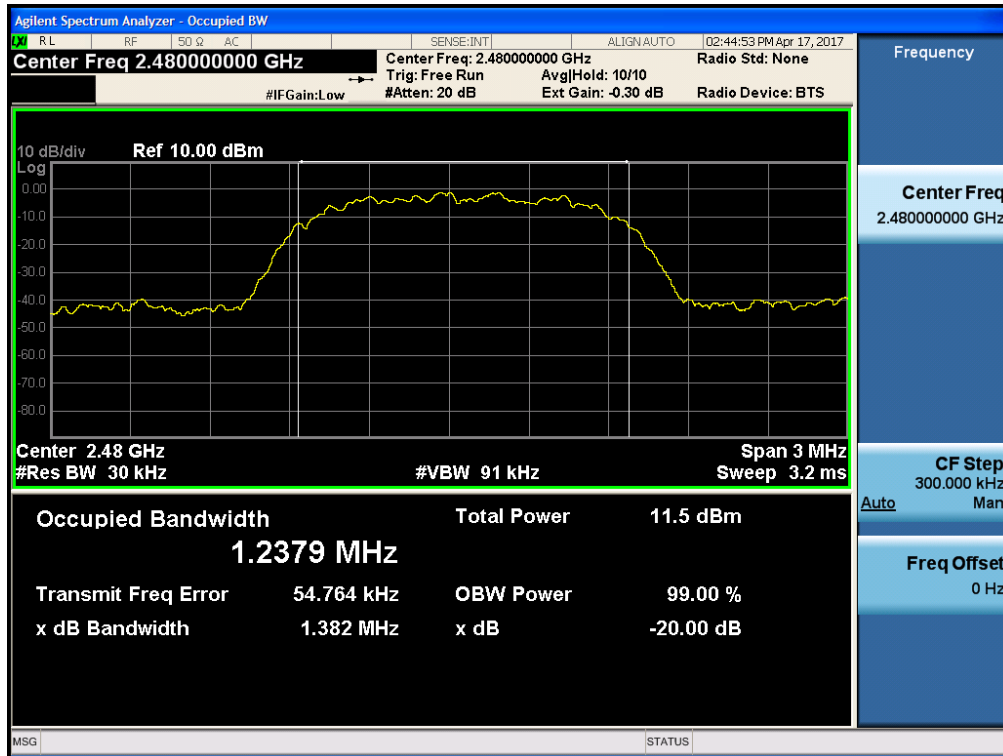
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## 2.1.4 Time of Occupancy (Dwell Time)

### Test Procedures(ANSI C63.10-2013 7.8.4)

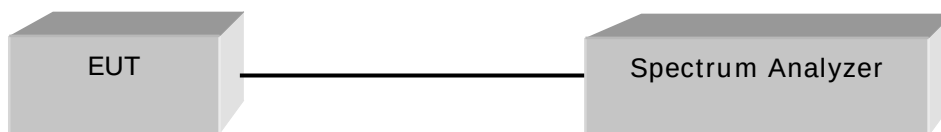
The dwell time was measured with a spectrum analyzer connected to the antenna terminal, while EUT has its hopping function enabled.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in test setup without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of spectrum analyzer on any frequency be measured and set spectrum analyzer to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
5. Repeat above procedures until all frequencies measured were complete.
6. The BCEA001 has 3 type of payload, DH1, DH3, DH5. The hopping rate is 1600 per second.

#### Test Settings:

Center frequency = the highest, middle and the lowest channels

- |                                                                              |                                          |
|------------------------------------------------------------------------------|------------------------------------------|
| a) Span = zero                                                               | b) RBW = 1 MHz ( $\leq$ channel spacing) |
| c) VBW = 1 MHz ( $\geq$ RBW)                                                 | d) Trace = max hold                      |
| e) Detector = peak                                                           |                                          |
| g) Sweep = as necessary to capture the entire dwell time per hopping channel |                                          |



#### **Limit :**

Time of Occupancy < 0.4

## Test Data

Time of occupancy on the TX channel in 31.6 sec = time domain slot length × hop rate ÷  
number of hop per channel × 31.6

### Test mode : GFSK

| Channel Frequency (MHz) | Packet Type | Length of Transmission Time (ms) | Test Results                                        |          |
|-------------------------|-------------|----------------------------------|-----------------------------------------------------|----------|
|                         |             |                                  | Time of occupancy on the TX channel in 31.6sec (ms) | Result   |
| 2441                    | DH 1        | 0.397                            | 127.0                                               | Complies |
|                         | DH 3        | 1.657                            | 265.1                                               | Complies |
|                         | DH 5        | 2.908                            | 310.2                                               | Complies |

DH1 Dwell time =  $0.397 \text{ ms} \times (1600 \div 2) \div 79 \times 31.6 = 127.0 \text{ ms}$

DH3 Dwell time =  $1.657 \text{ ms} \times (1600 \div 4) \div 79 \times 31.6 = 265.1 \text{ ms}$

DH5 Dwell time =  $2.908 \text{ ms} \times (1600 \div 6) \div 79 \times 31.6 = 310.2 \text{ ms}$

### Test mode : 8-DPSK

| Channel Frequency (MHz) | Packet Type | Length of Transmission Time (ms) | Test Results                                        |          |
|-------------------------|-------------|----------------------------------|-----------------------------------------------------|----------|
|                         |             |                                  | Time of occupancy on the TX channel in 31.6sec (ms) | Result   |
| 2441                    | 3DH 1       | 0.403                            | 129.0                                               | Complies |
|                         | 3DH 3       | 1.653                            | 264.5                                               | Complies |
|                         | 3DH 5       | 2.903                            | 309.7                                               | Complies |

3DH1 Dwell time =  $0.403 \text{ ms} \times (1600 \div 2) \div 79 \times 31.6 = 129.0 \text{ ms}$

3DH3 Dwell time =  $1.653 \text{ ms} \times (1600 \div 4) \div 79 \times 31.6 = 264.5 \text{ ms}$

3DH5 Dwell time =  $2.903 \text{ ms} \times (1600 \div 6) \div 79 \times 31.6 = 309.7 \text{ ms}$

See next pages for actual measured spectrum plots.



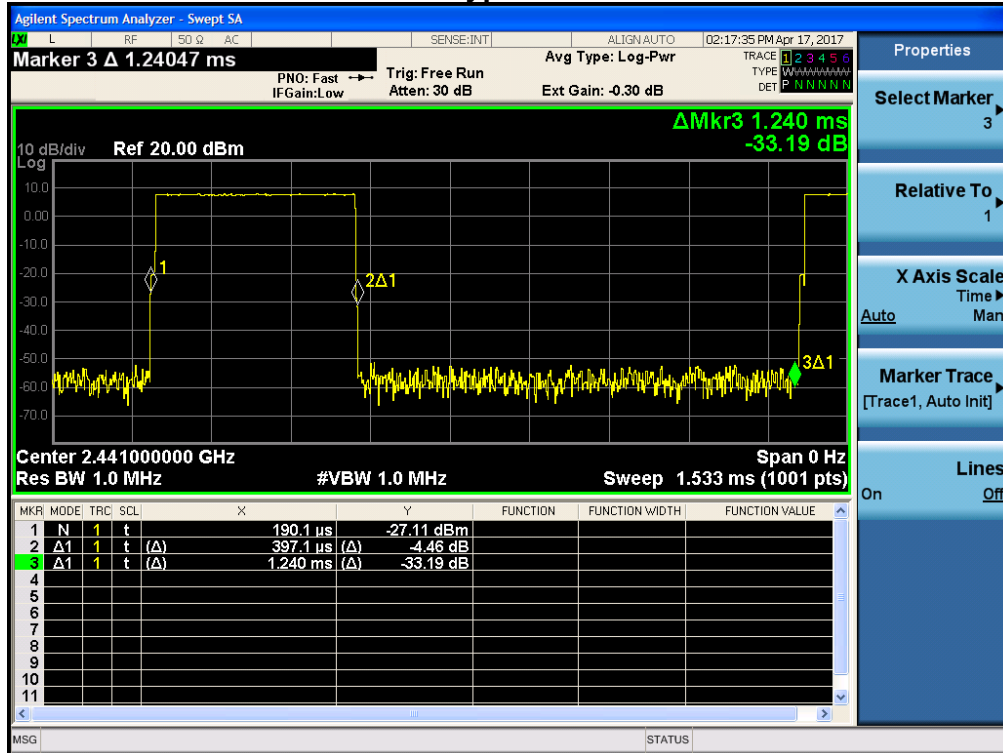
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### Time of Occupancy

#### PACKET Type DH1 - GFSK



#### PACKET Type DH3 - GFSK





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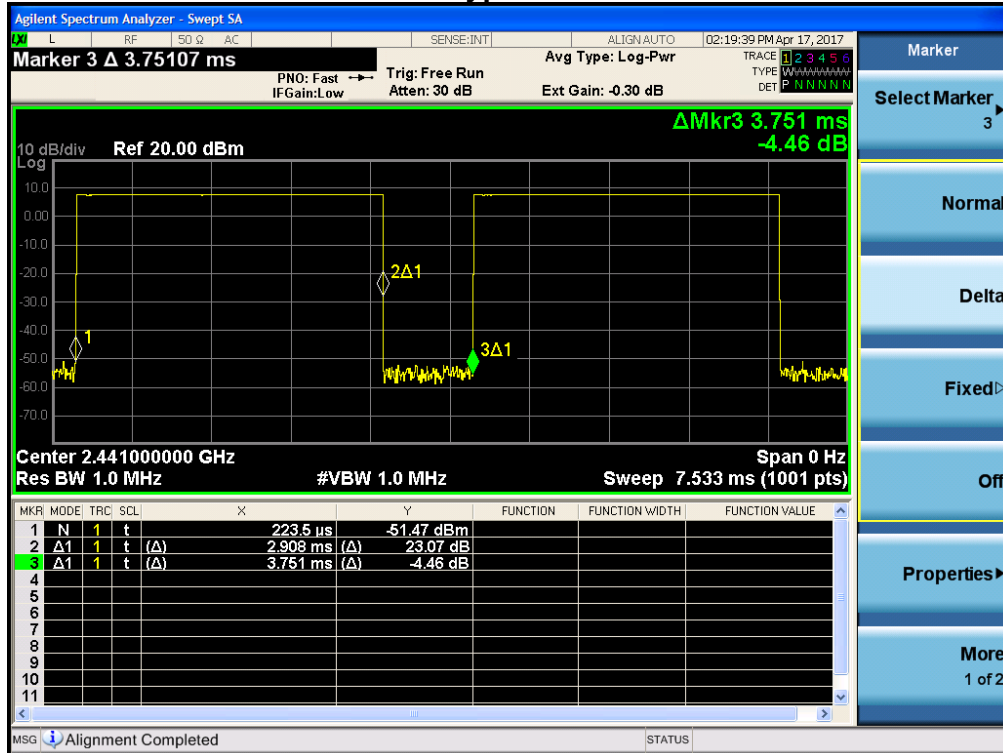
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## PACKET Type DH5 - GFSK





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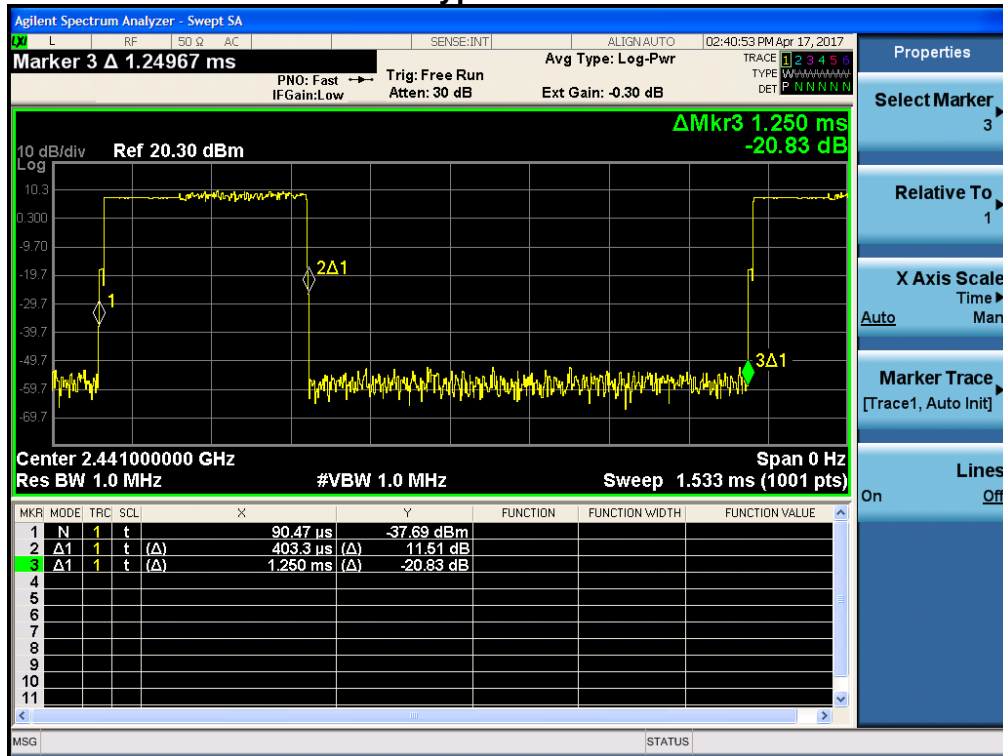
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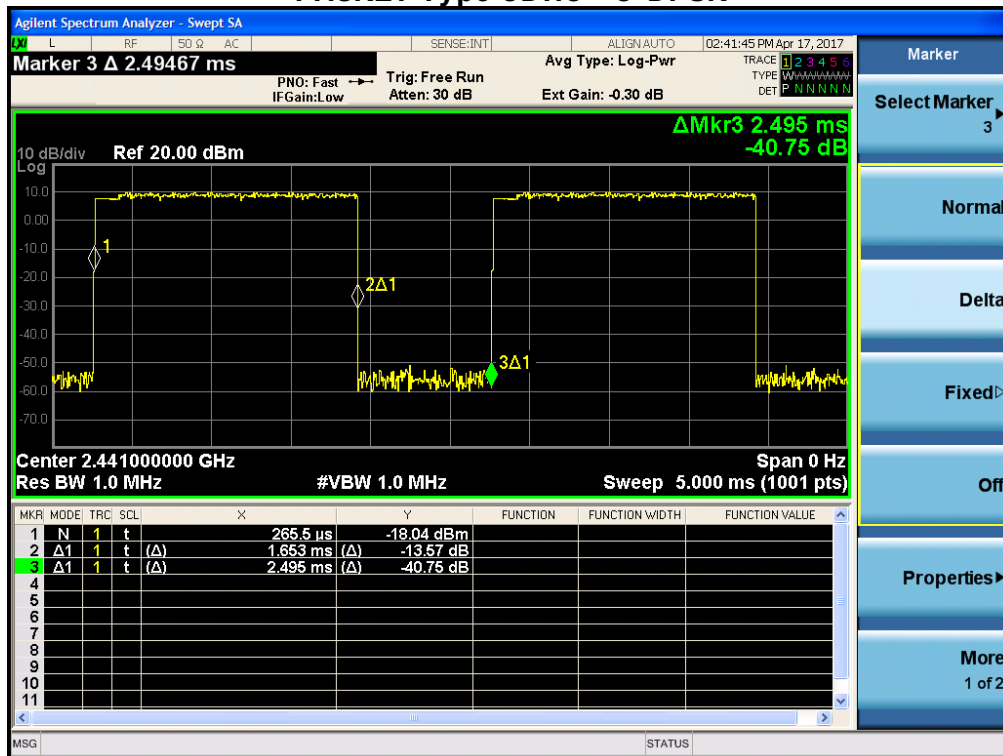
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### PACKET Type 3DH1 - 8-DPSK



### PACKET Type 3DH3 - 8-DPSK





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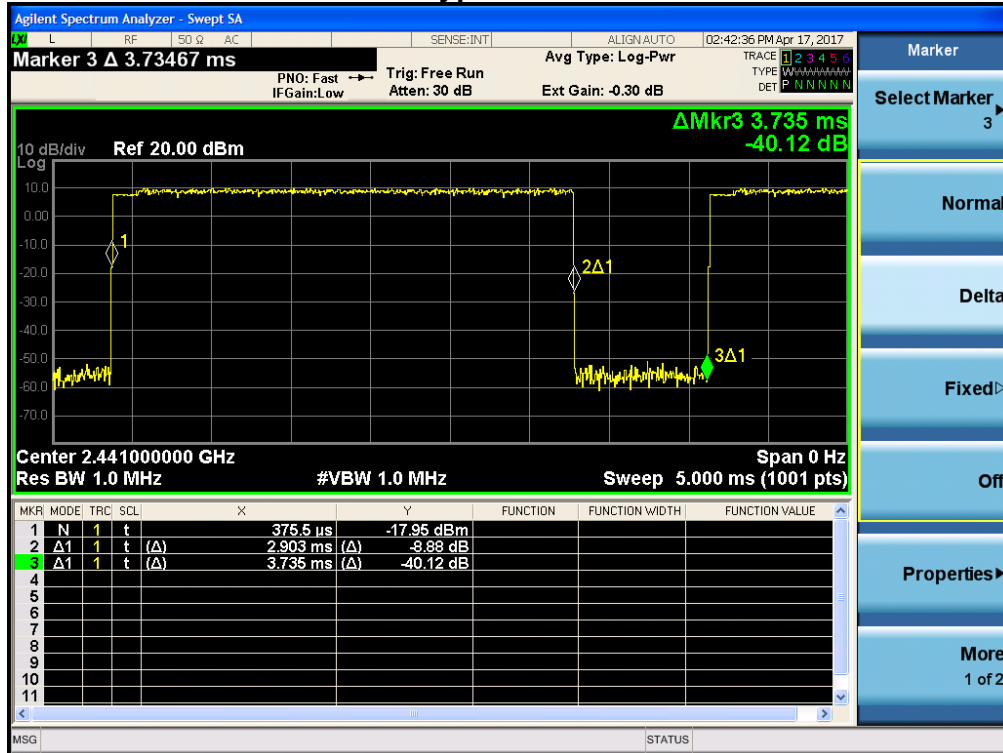
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### PACKET Type 3DH5 - 8-DPSK



## 2.1.5 Maximum peak Conducted Output Power

### Test Procedures(ANSI C63.10-2013 7.8.5)

The maximum peak conducted output power was measured with a spectrum analyzer connected to the antenna terminal, while EUT has its hopping function disabled at the highest, middle and the lowest available channels.

#### Test Settings:

Center frequency = the highest, middle and the lowest channels

a) Span = 5 MHz (approximately 5 times of the 20 dB bandwidth)

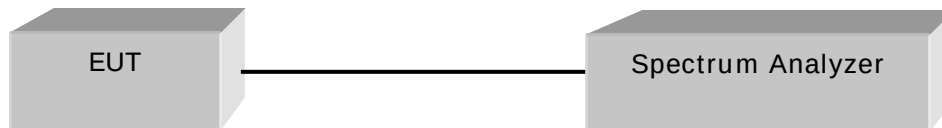
b) RBW = 3 MHz (greater than the 20 dB bandwidth of the emission being measured)

c) VBW = 3 MHz ( $\geq$  RBW)

d) Detector = peak

e) Trace = max hold

f) Sweep = auto



#### Limit :

Maximum peak Conducted Output Power < 1 W

#### Test Data

##### Test mode : GFSK, CFG PKT Packet Type : 15 Packet Size : 339(DH5)

| Frequency (MHz) | Channel No. | Peak output power(dBm) | Peak output power(mW) | Result   |
|-----------------|-------------|------------------------|-----------------------|----------|
| 2402            | 0           | 6.772                  | 4.76                  | Complies |
| 2441            | 39          | 7.761                  | 5.97                  | Complies |
| 2480            | 78          | 8.412                  | 6.94                  | Complies |

##### Test mode : 8-DPSK, CFG PKT Packet Type : 31 Packet Size : 1021(3DH5)

| Frequency (MHz) | Channel No. | Peak output power(dBm) | Peak output power(mW) | Result   |
|-----------------|-------------|------------------------|-----------------------|----------|
| 2402            | 0           | 5.727                  | 3.74                  | Complies |
| 2441            | 39          | 6.662                  | 4.64                  | Complies |
| 2480            | 78          | 7.137                  | 5.17                  | Complies |

See next pages for actual measured spectrum plots.



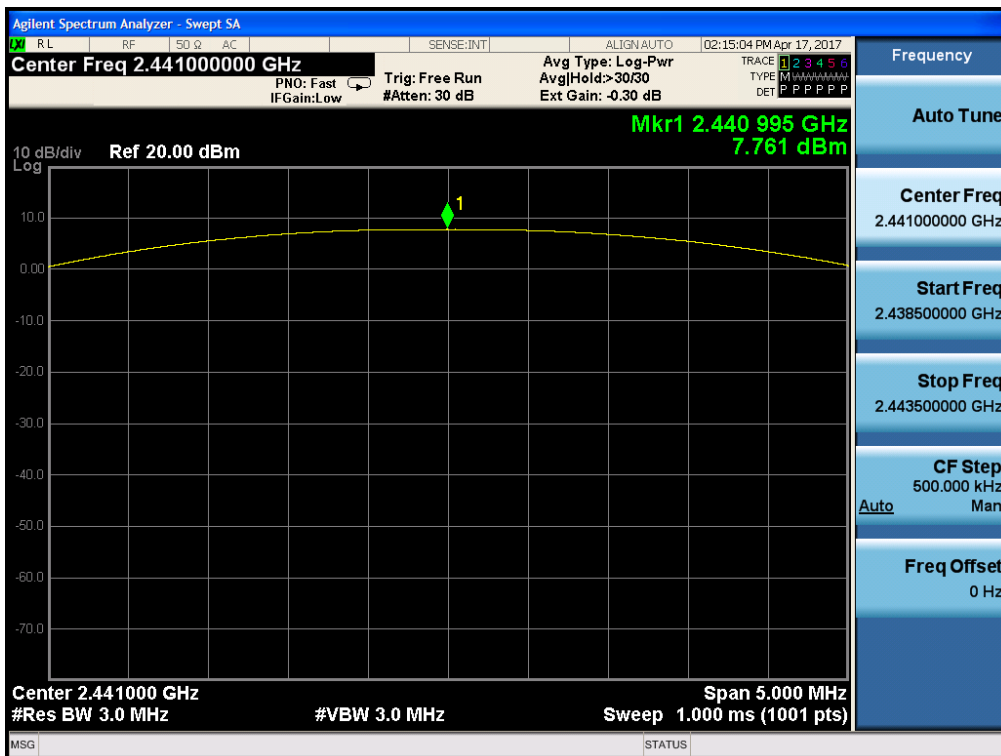
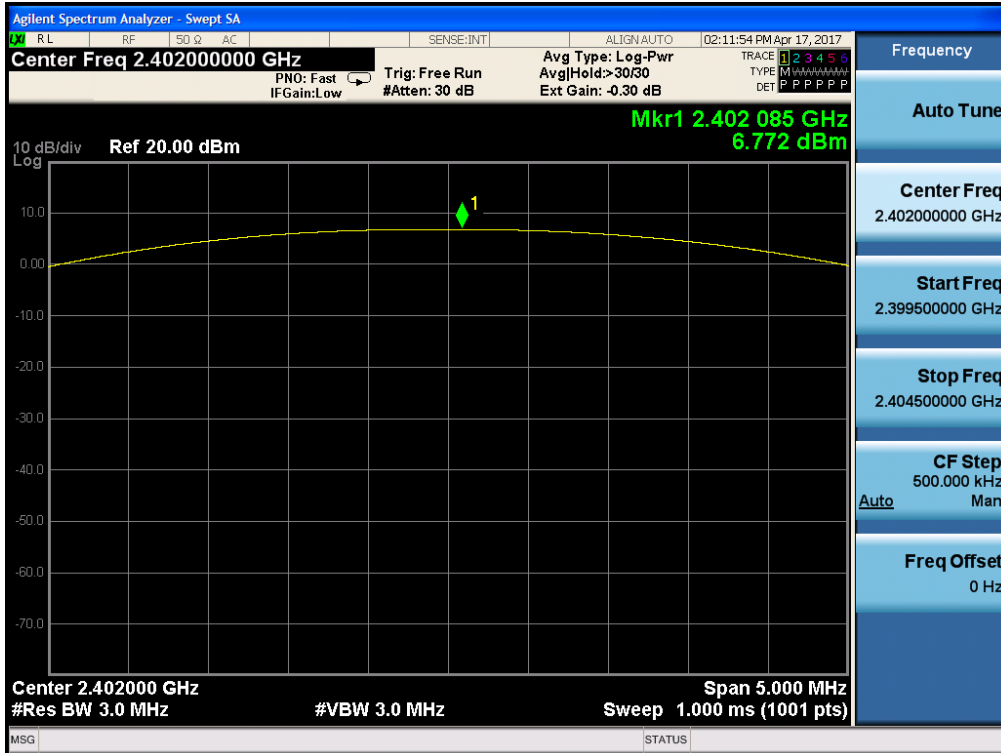
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### Maximum peak Conducted Output Power

#### GFSK





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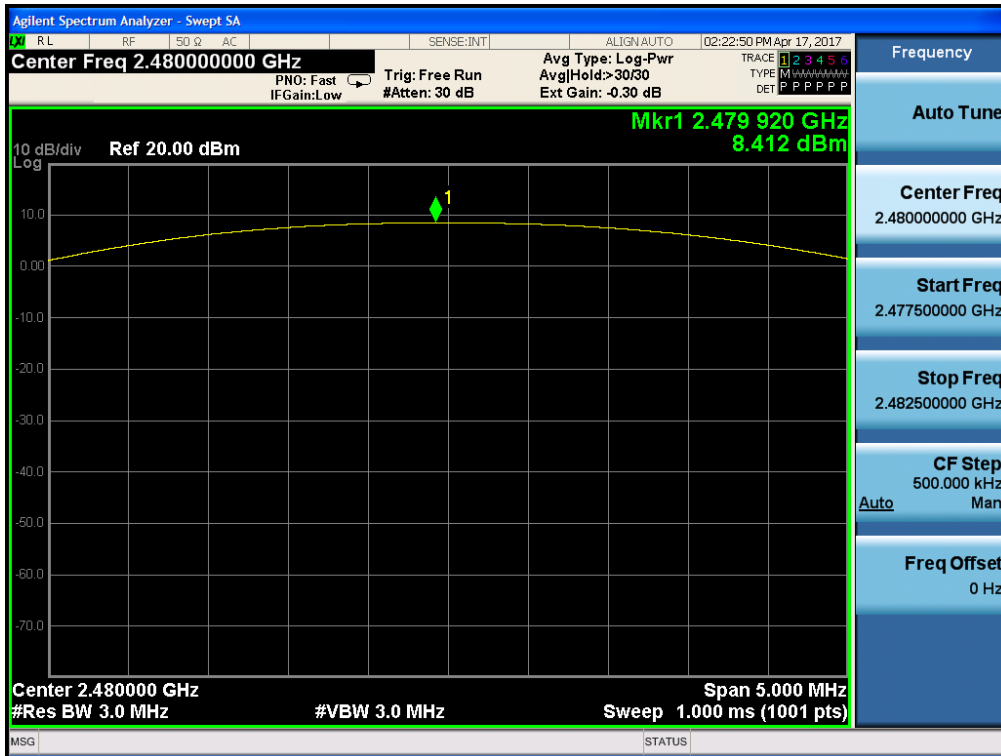
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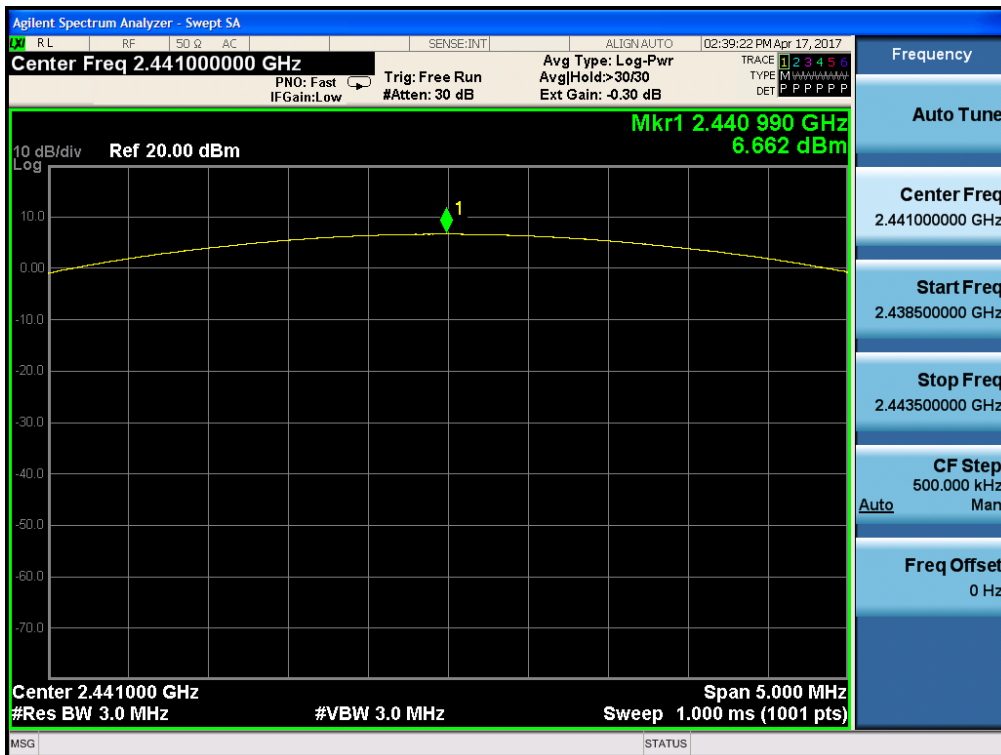
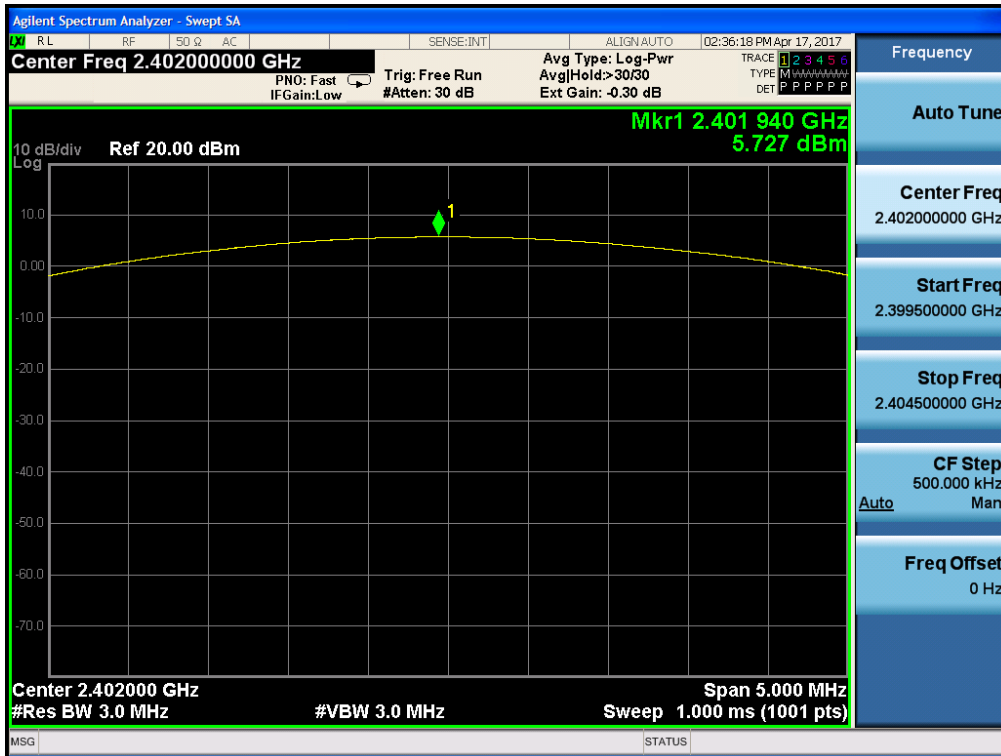
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### 8-DPSK





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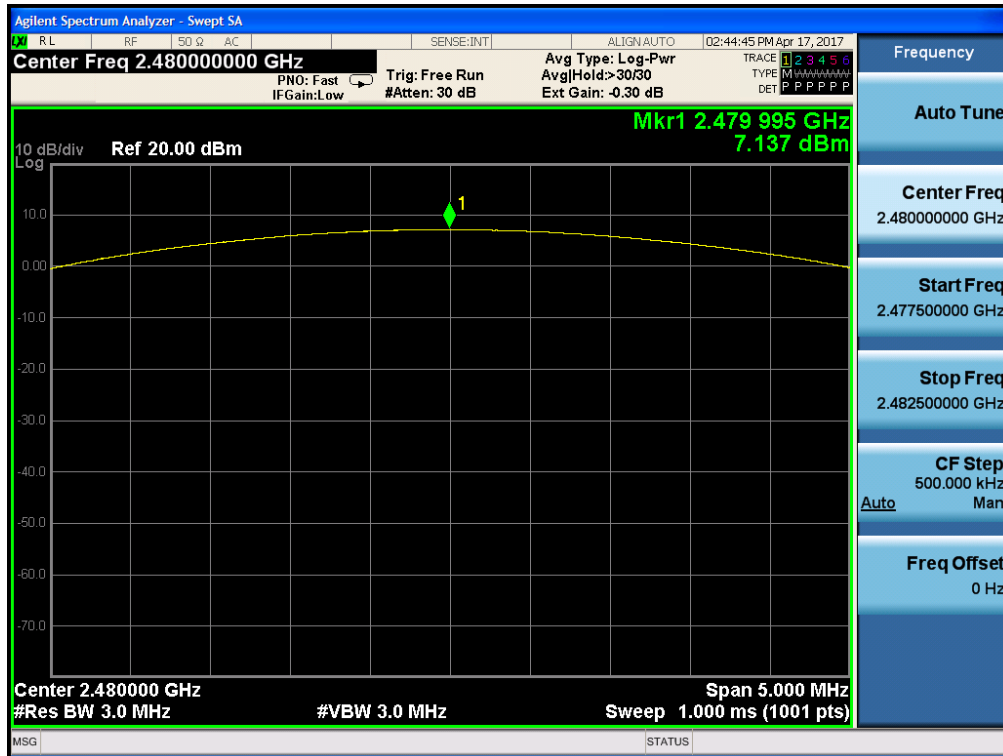
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## 2.1.6 Band-edge

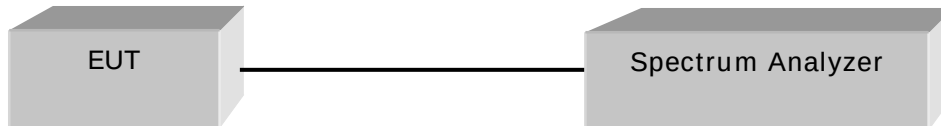
### Test Procedures(ANSI C63.10-2013 7.8.6 / ANSI C63.10-2013 7.8.8)

The bandwidth at 20 dB down from the highest inband spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT has its hopping function disabled at the highest, middle and the lowest available channels.

#### Test Settings:

Center frequency = the highest, middle and the lowest channels

- |                     |                                |
|---------------------|--------------------------------|
| a) RBW = 100 kHz    | b) VBW = 300 kHz ( $\geq$ RBW) |
| c) Span = 10 MHz    | d) Detector = peak             |
| e) Trace = max hold | f) Sweep = auto                |



#### Limit :

Band-edge > 20 dBc

### Test Results

All conducted emission in any 100 kHz bandwidth outside of the spectrum band was at least 20 dB lower than the highest level of the inband spectral density.  
Therefore the applying equipment meets the requirement.

See next pages for actual measured spectrum plots.



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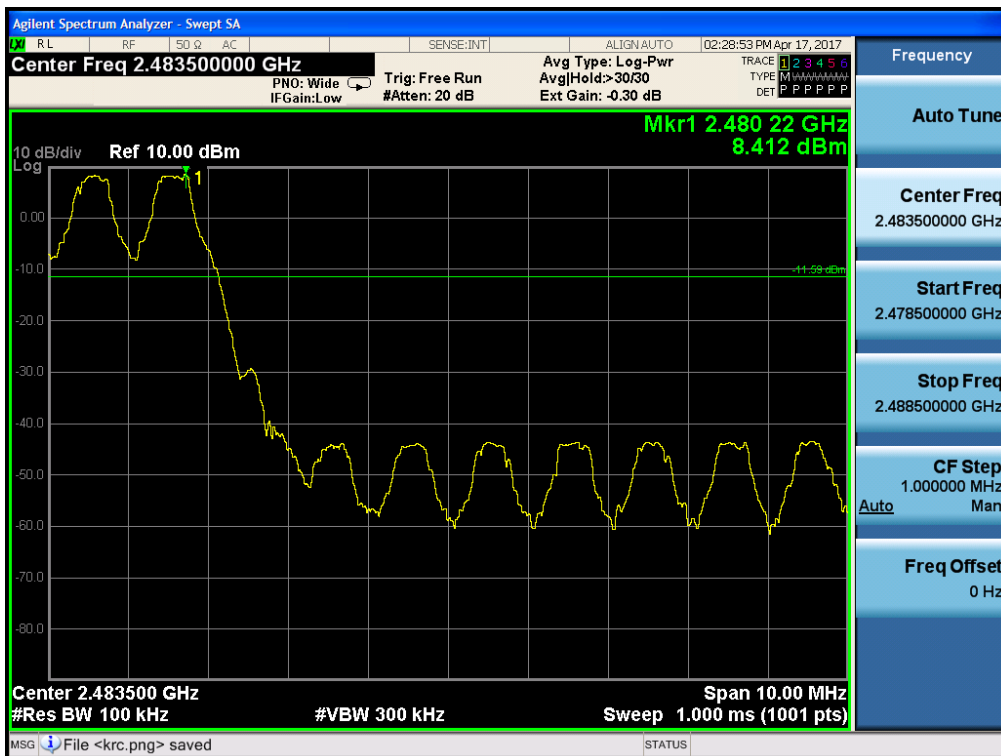
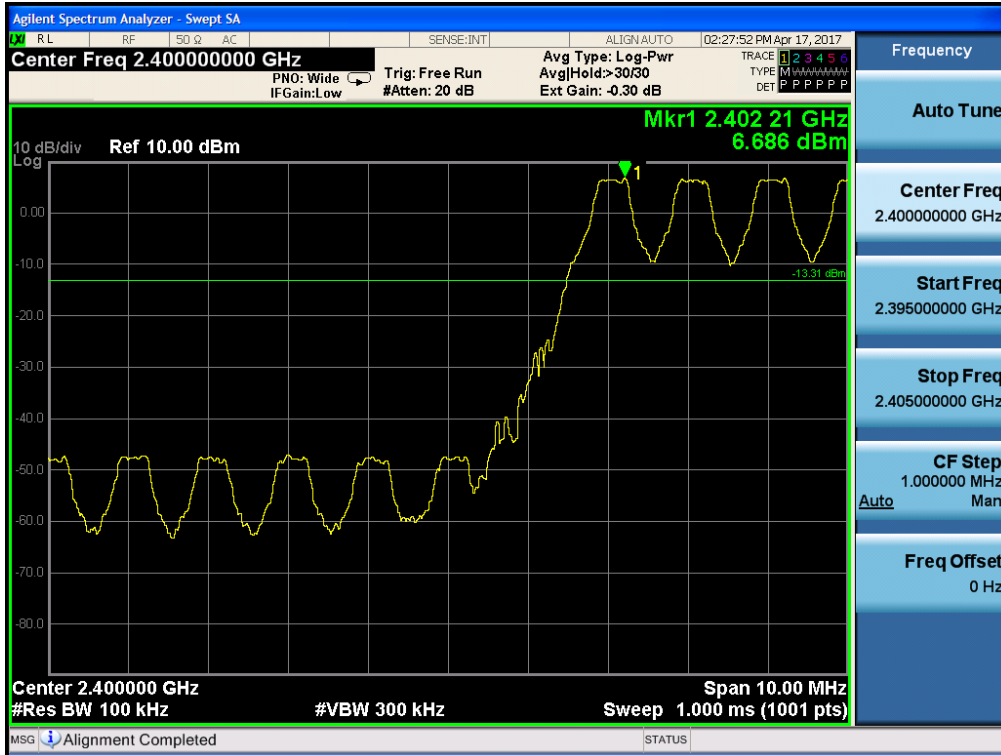
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea

Tel: +82-31-339-9970

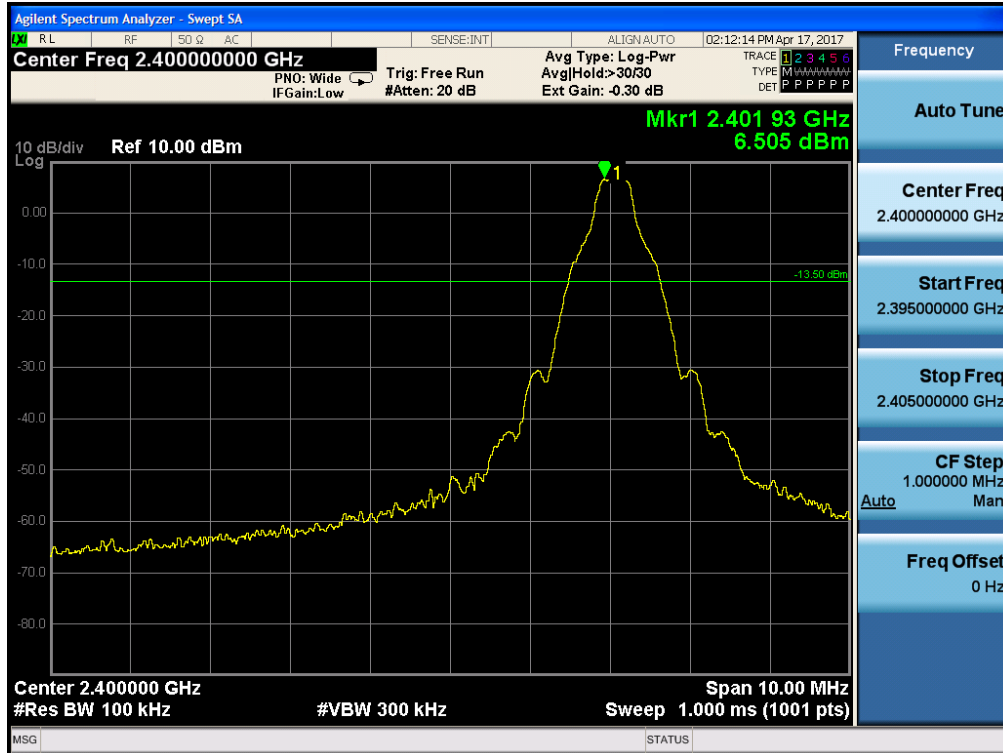
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### Band - edge (with Hopping) - GFSK



### Band – edge (without Hopping) - GFSK





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### Band - edge (with Hopping) - 8-DPSK



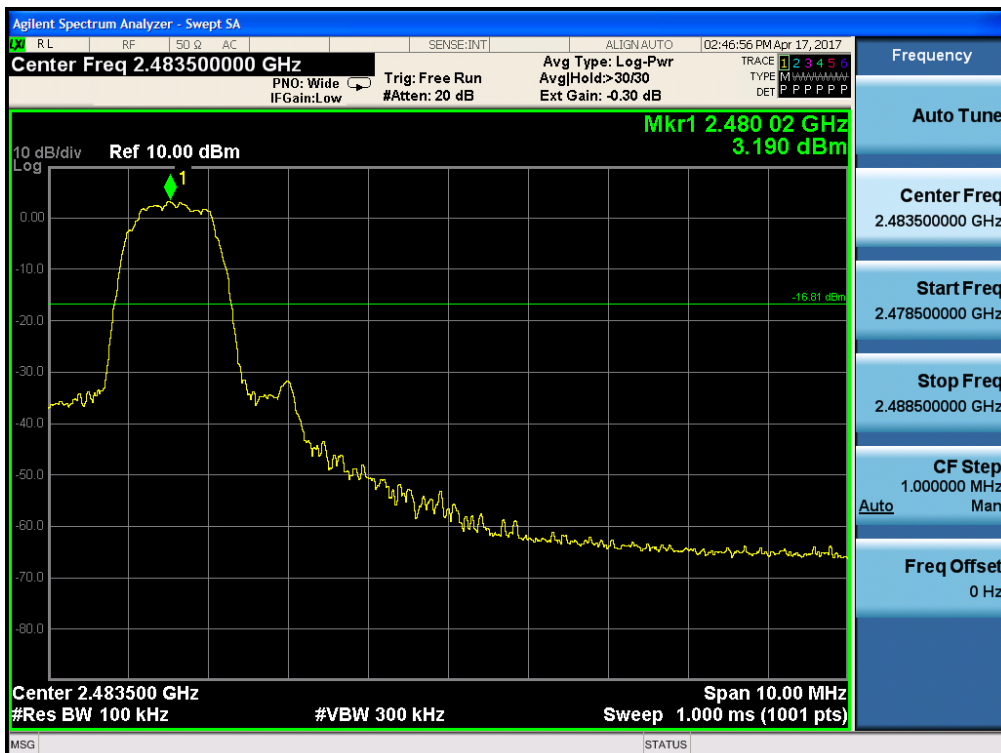
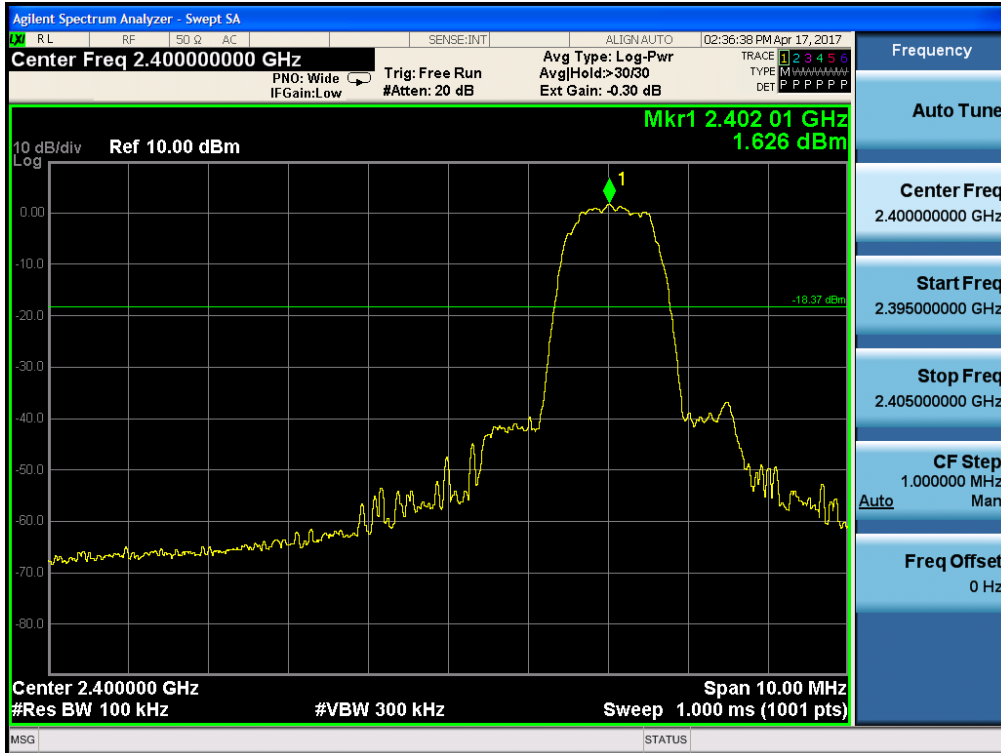


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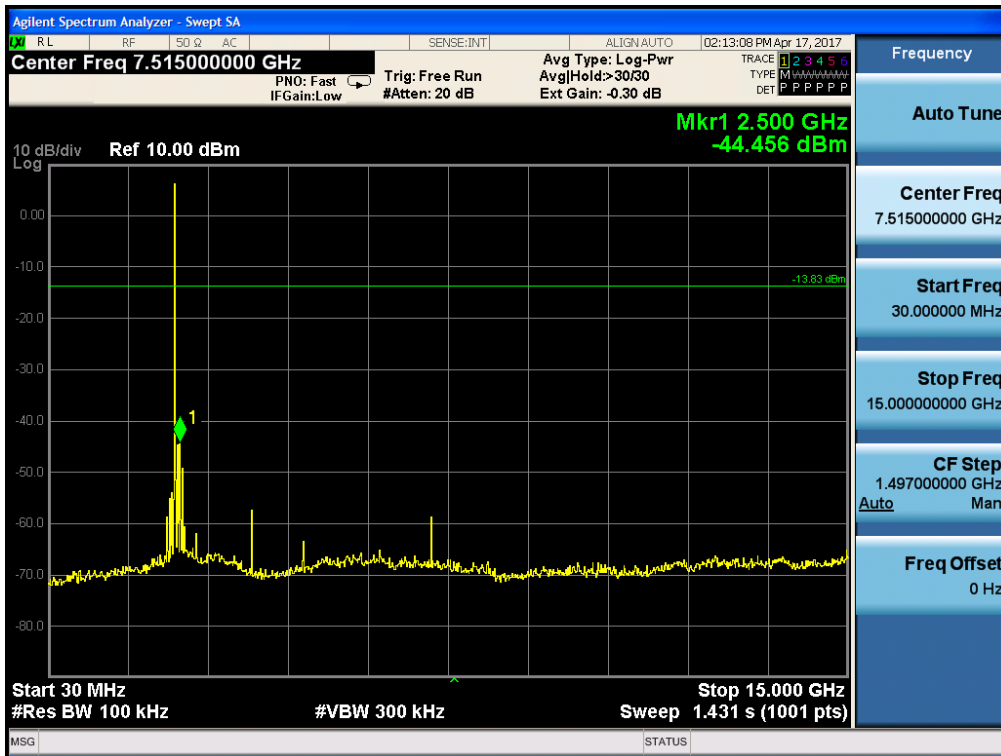
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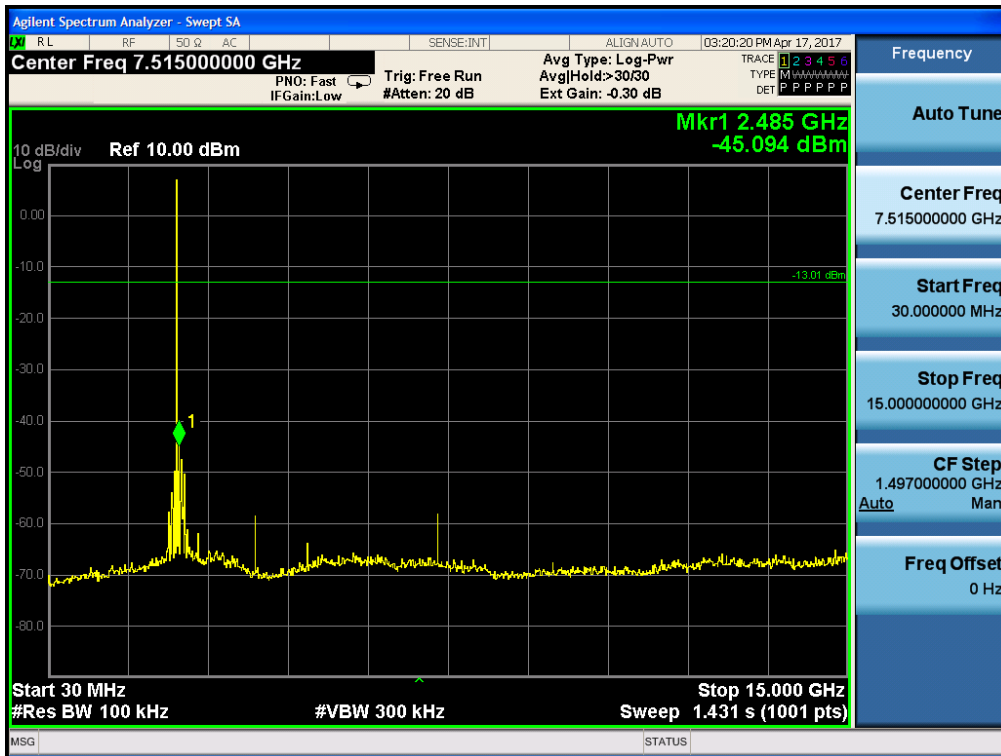
### Band – edge (without Hopping) – 8-DPSK



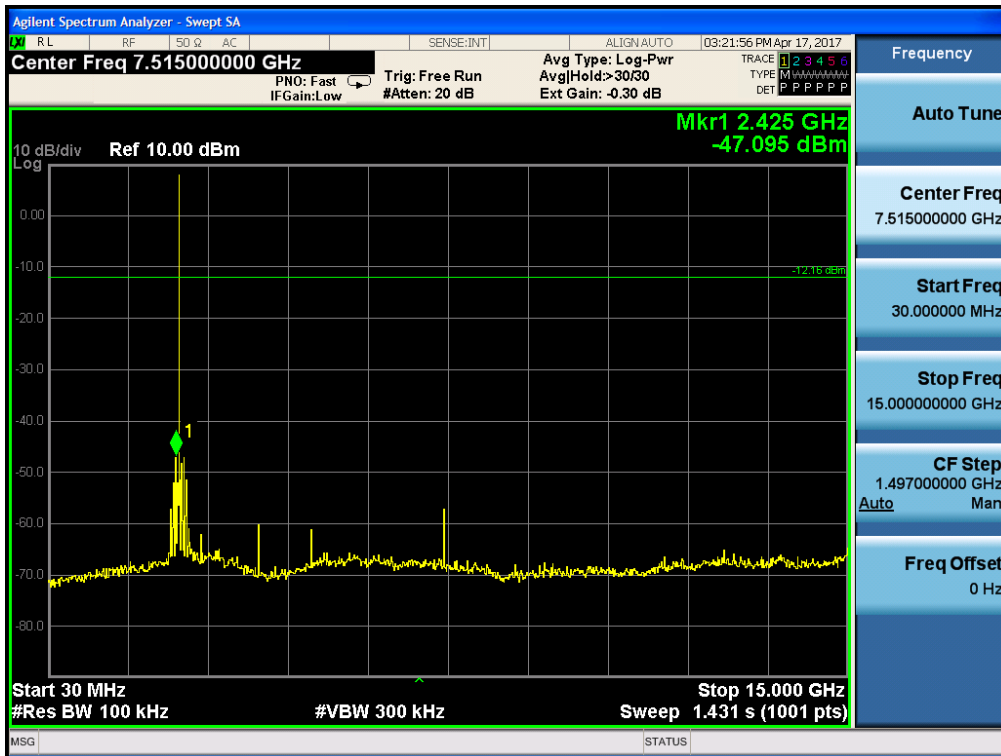
**Band – edge (at 20 dB blow) – Low channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic**  
**(GFSK : Worst-Case)**



**Band – edge (at 20 dB blow) – Mid channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic**  
**(GFSK : Worst-Case)**



**Band – edge (at 20 dB blow) – High channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic**  
**(GFSK : Worst-Case)**



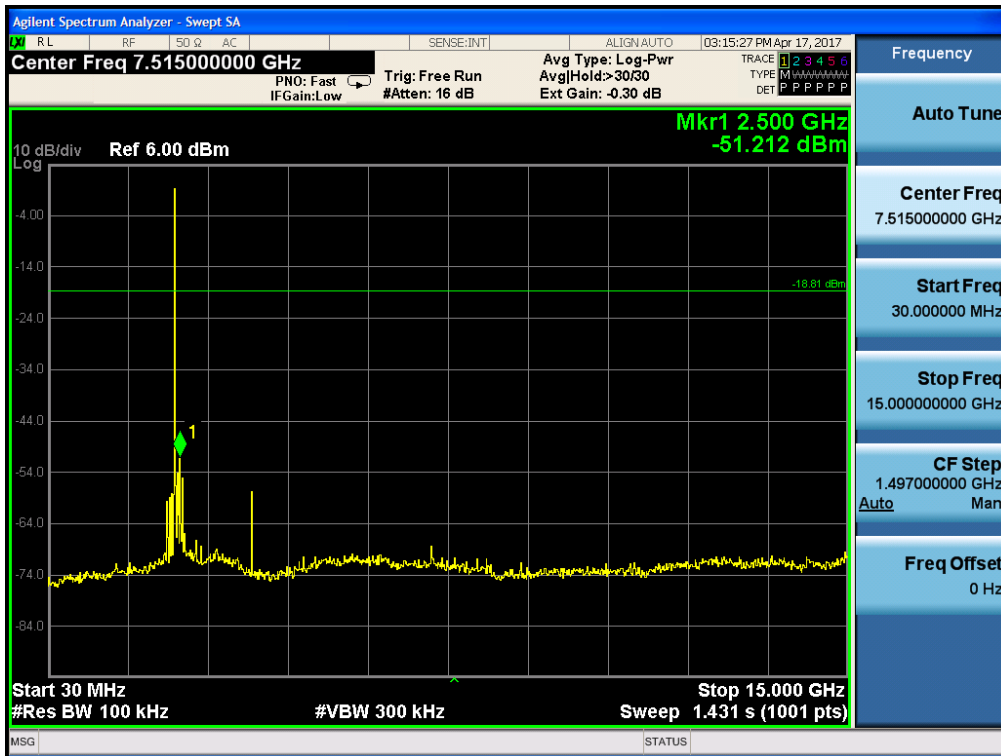


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**Band – edge (at 20 dB blow) – Low channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic**  
**(8-DPSK : Worst-Case)**



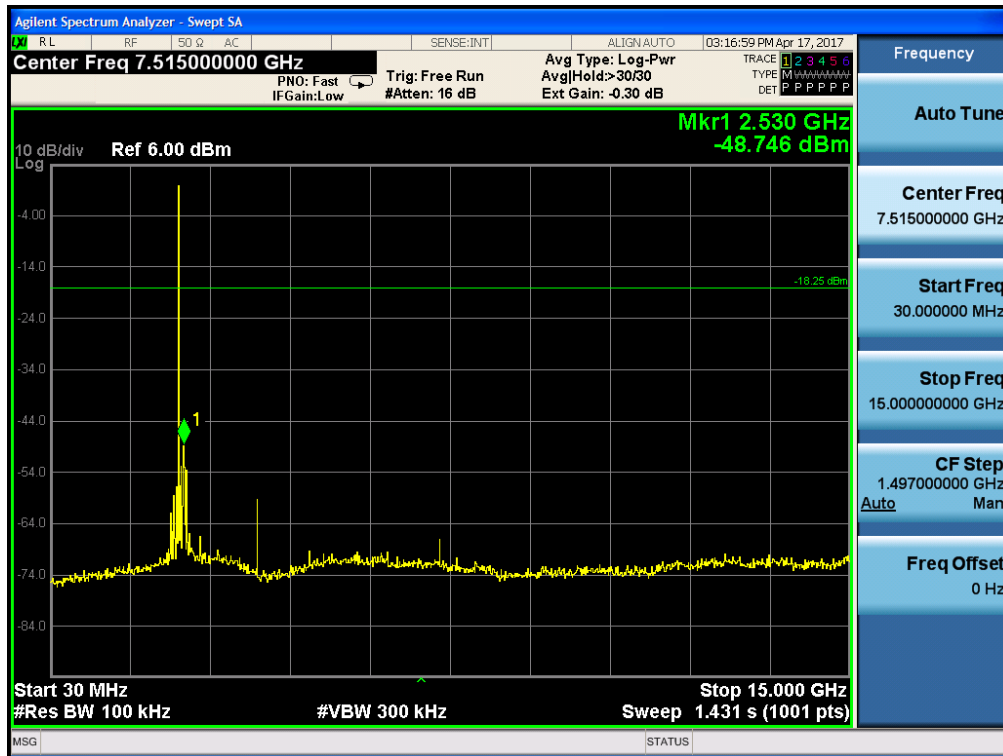


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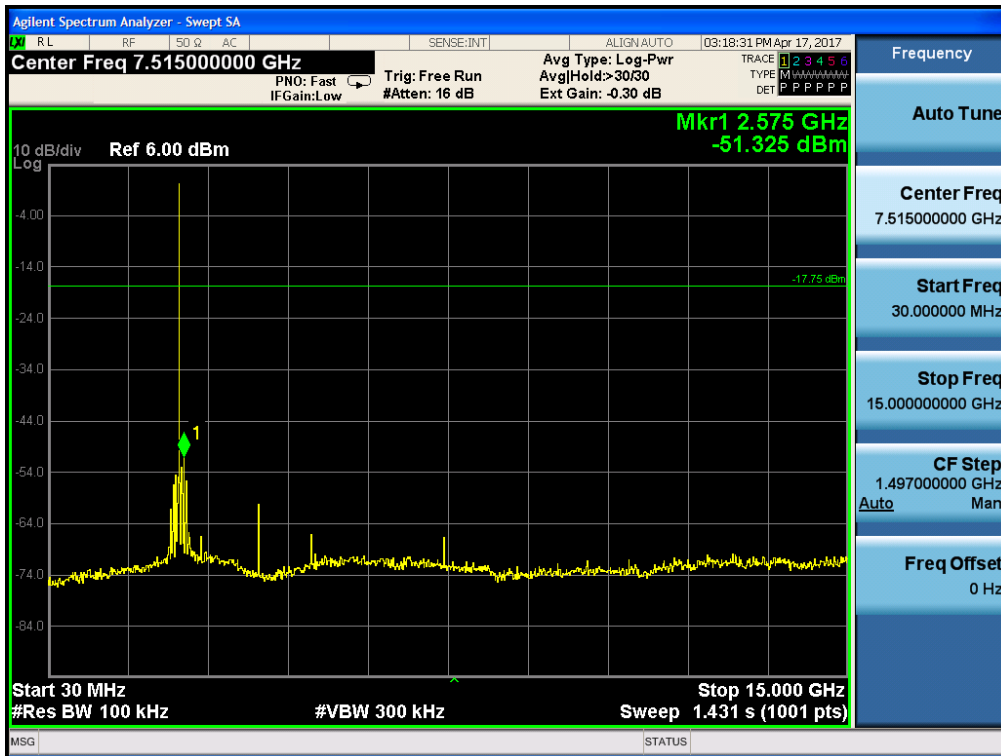
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Band – edge (at 20 dB blow) – Mid channel  
Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic  
(8-DPSK : Worst-Case)



**Band – edge (at 20 dB blow) – High channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic**  
**(8-DPSK : Worst-Case)**



## 2.1.7 Field Strength of Emissions

### Test Location

- ☒ 10 m SAC (test distance : ☐ 10 m, ☒ 3 m)  
☒ 3 m SAC (test distance : 3 m)

### Test Procedures

- 1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- 2) In the frequency range above 30 MHz, Bi-Log Test Antenna(30 MHz to 1 GHz) and Horn Test Antenna(above 1 GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is carried from 1m to 4m above the ground to determine the maximum value of the field strength. The emissions levels at both horizontal and vertical polarizations should be tested.

### Test Settings:

Frequency Range = 9 kHz ~ 25 GHz (2.4 GHz 10<sup>th</sup> harmonic)

- a) RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz, 9 kHz for  $f < 30$  MHz
- b) VBW  $\geq$  RBW
- c) Sweep = auto

### Limit

#### - 15.209(a)

| Frequency(MHz) | Field Strength<br>uV/m@3m | Field Strength<br>dBuV/m@3m | Measurement<br>Distance (meters) |
|----------------|---------------------------|-----------------------------|----------------------------------|
| 0.009-0.490    | 2400/F(kHz)               | -                           | 300                              |
| 0.490-1.705    | 24000/F(kHz)              | -                           | 30                               |
| 1.705-30       | 30                        | -                           | 30                               |
| 30-88          | 100**                     | 40                          | 3                                |
| 88-216         | 150**                     | 43.5                        | 3                                |
| 216-960        | 200**                     | 46                          | 3                                |
| Above 960      | 500                       | 54                          | 3                                |

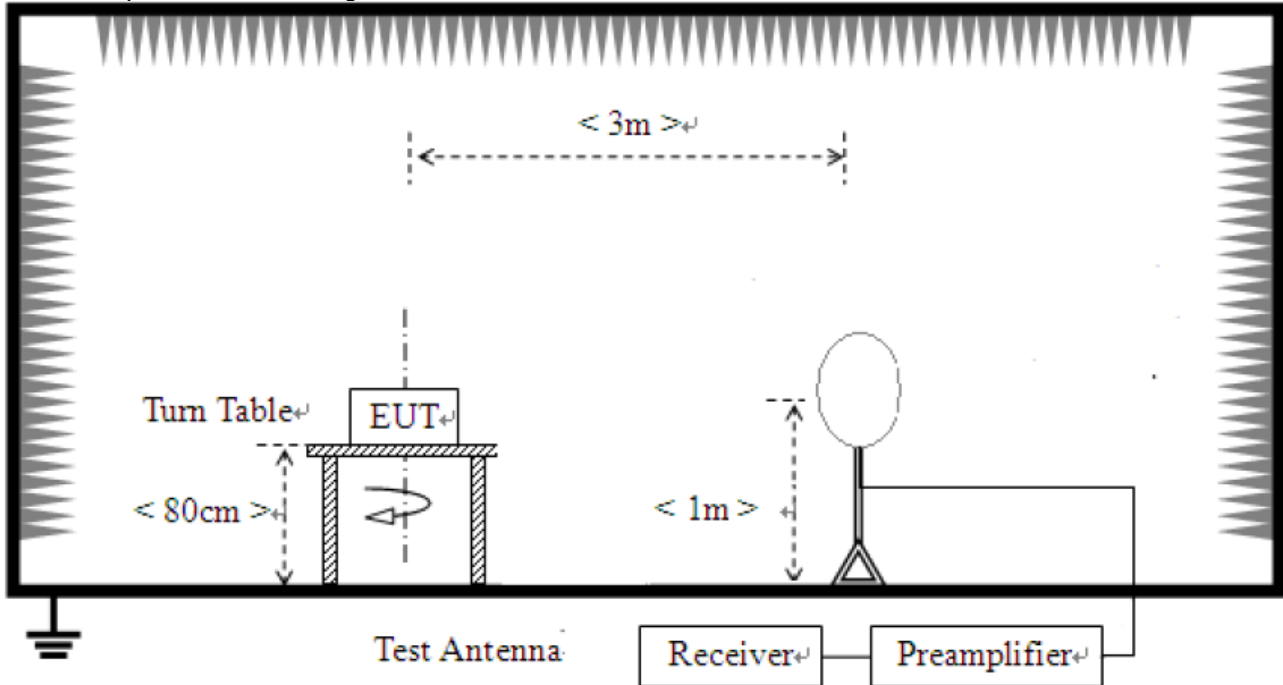
\*\* Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

#### Note :

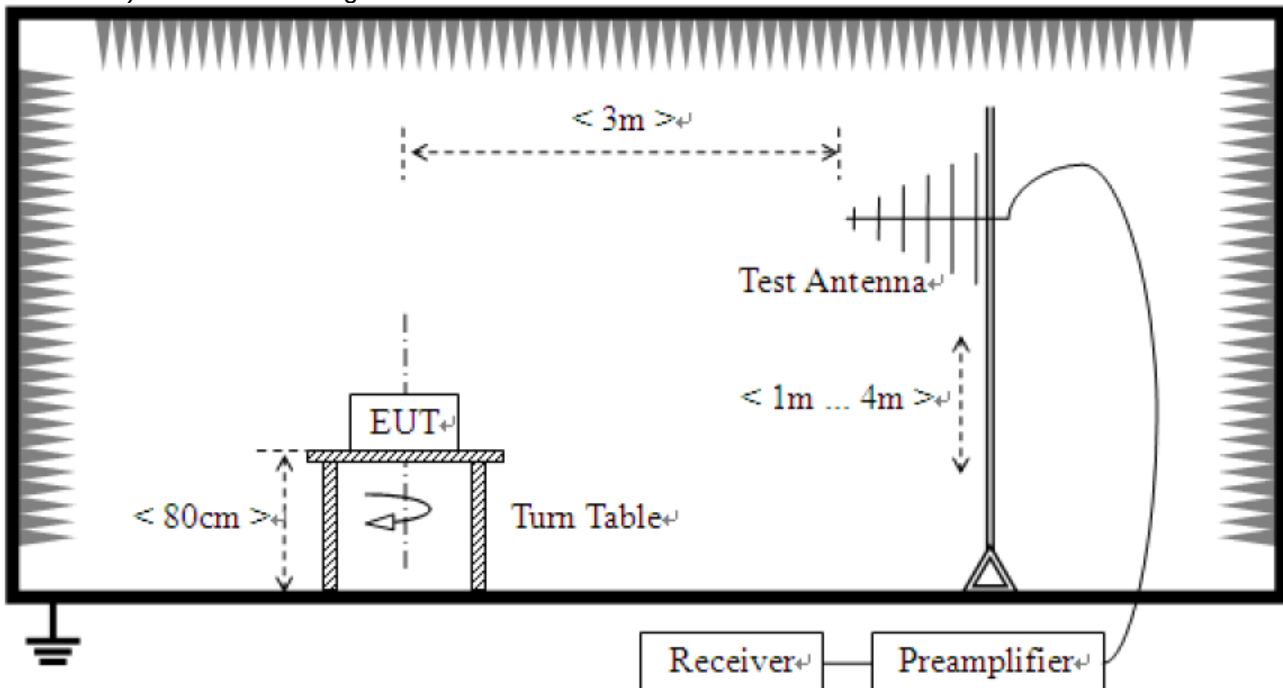
- 1) For above 1 GHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
- 2) For above 1 GHz, limit field strength of harmonics : 54 dBuV/m@3m (AV) and 74 dBuV/m@3m (PK)

### Test Setup:

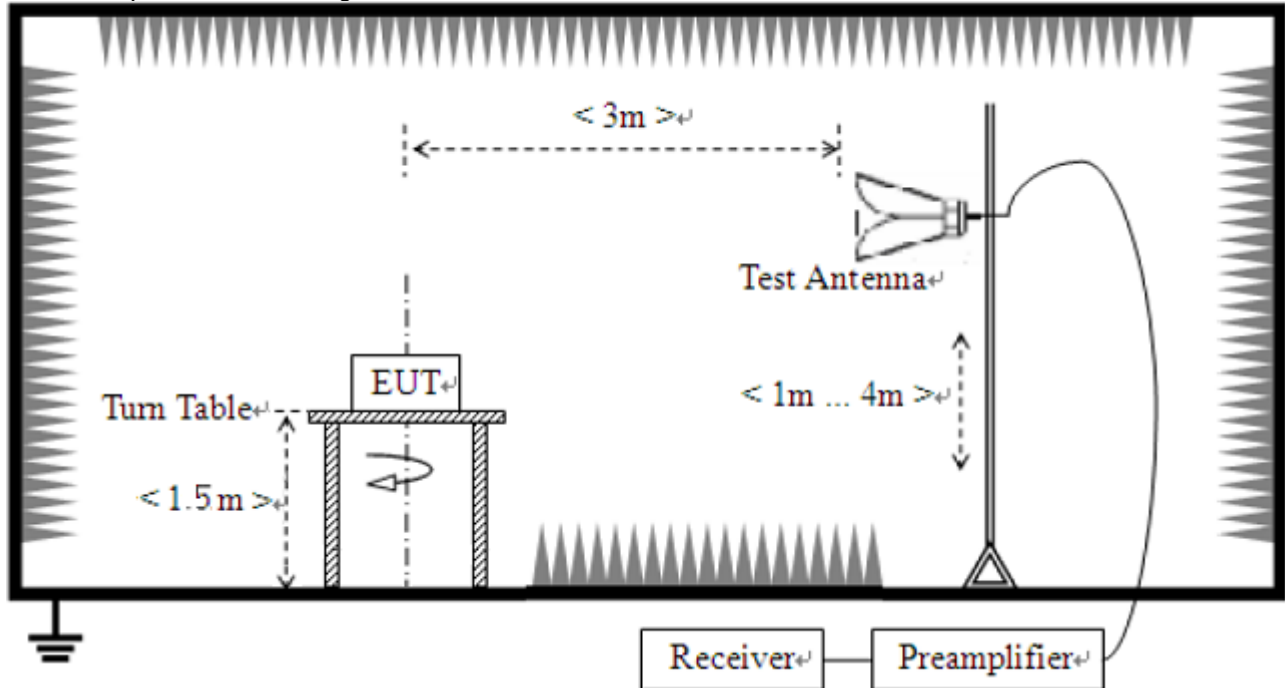
- 1) For field strength of emissions from 9 kHz to 30 MHz



- 2) For field strength of emissions from 30 MHz to 1 GHz



3) For field strength of emissions above 1 GHz



**Test Results**

**1) 9 kHz to 30 MHz**

**Test mode : GFSK, CFG PKT Packet Type : 15 Packet Size : 339(DH5)**

**Test mode : 8-DPSK, CFG PKT Packet Type : 31 Packet Size : 1021(3DH5)**

|           |                          |                    |                |
|-----------|--------------------------|--------------------|----------------|
| EUT       | Bluetooth Classic Module | Measurement Detail |                |
| Model     | BCEA001                  | Frequency Range    | 9 kHz – 30 MHz |
| Test mode | GFSK, 8-DPSK             | Detector function  | Quasi-Peak     |

The requirements are:

☒ Complies

| Frequency (MHz) | Measured Data (dBuV/m) | Margin (dB) | Remark   |
|-----------------|------------------------|-------------|----------|
| -               | -                      | -           | See note |

**Note :**

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB)



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### 2) 30 MHz to 1 GHz

**Test mode : Hopping(GFSK), CFG PKT Packet Type : 15 Packet Size : 339(DH5)**

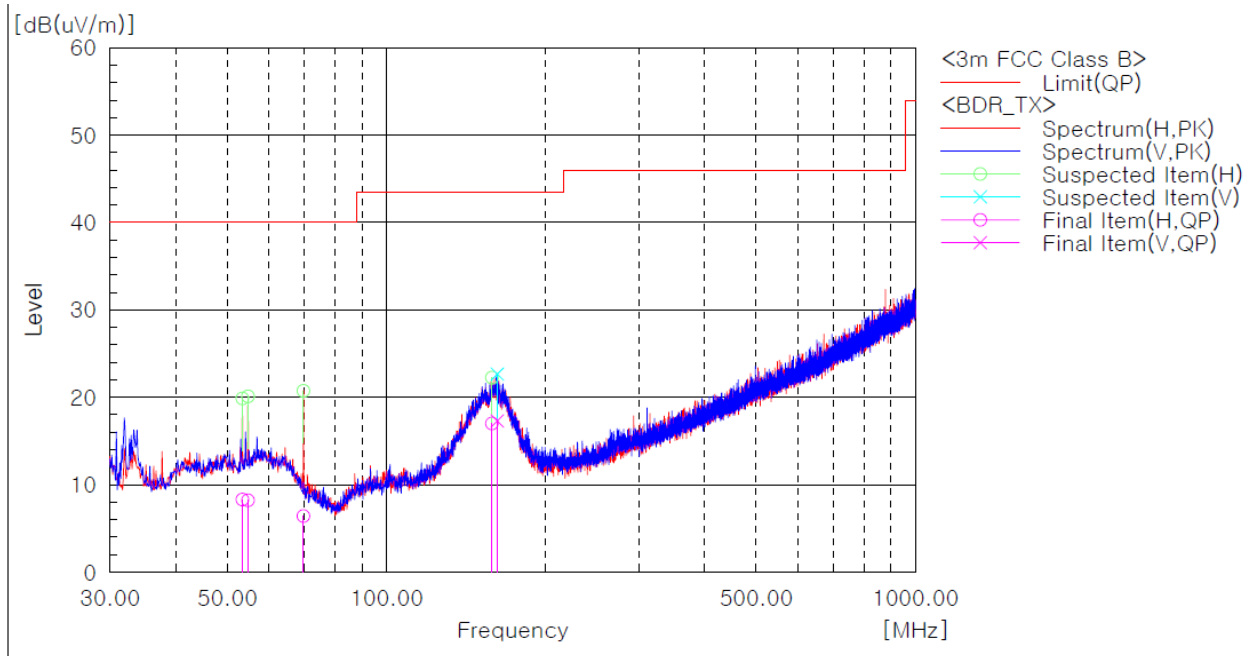
|           |                          |                    |                   |
|-----------|--------------------------|--------------------|-------------------|
| EUT       | Bluetooth Classic Module | Measurement Detail |                   |
| Model     | BCEA001                  | Frequency Range    | Below 1000MHz     |
| Test mode | GFSK Hopping             | Detector function  | Quasi-Peak / Peak |

The requirements are:

☒ Complies

| Frequency<br>(MHz) | Measured Data<br>(dBuV/m) | Margin<br>(dB) | Remark     |
|--------------------|---------------------------|----------------|------------|
| 162.041            | 17.3                      | 26.2           | Quasi-Peak |

### Test Data



### Final Result

| No. | Frequency<br>[MHz] | (P) | Reading<br>QP<br>[dB(uV)] | c.f<br>[dB(1/m)] | Result<br>QP<br>[dB(uV/m)] | Limit<br>QP<br>[dB(uV/m)] | Margin<br>QP<br>[dB] | Height<br>[cm] | Angle<br>[deg] |
|-----|--------------------|-----|---------------------------|------------------|----------------------------|---------------------------|----------------------|----------------|----------------|
| 1   | 53.401             | H   | 21.2                      | -12.9            | 8.3                        | 40.0                      | 31.7                 | 200.0          | 243.0          |
| 2   | 54.735             | H   | 20.9                      | -12.7            | 8.2                        | 40.0                      | 31.8                 | 100.0          | 169.0          |
| 3   | 69.649             | H   | 22.1                      | -15.7            | 6.4                        | 40.0                      | 33.6                 | 100.0          | 169.0          |
| 4   | 158.283            | H   | 20.7                      | -3.7             | 17.0                       | 43.5                      | 26.5                 | 300.0          | 38.0           |
| 5   | 162.041            | V   | 21.0                      | -3.7             | 17.3                       | 43.5                      | 26.2                 | 399.0          | 196.0          |

### Remark :

1. The field strength of spurious emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



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### Test mode : Receiver

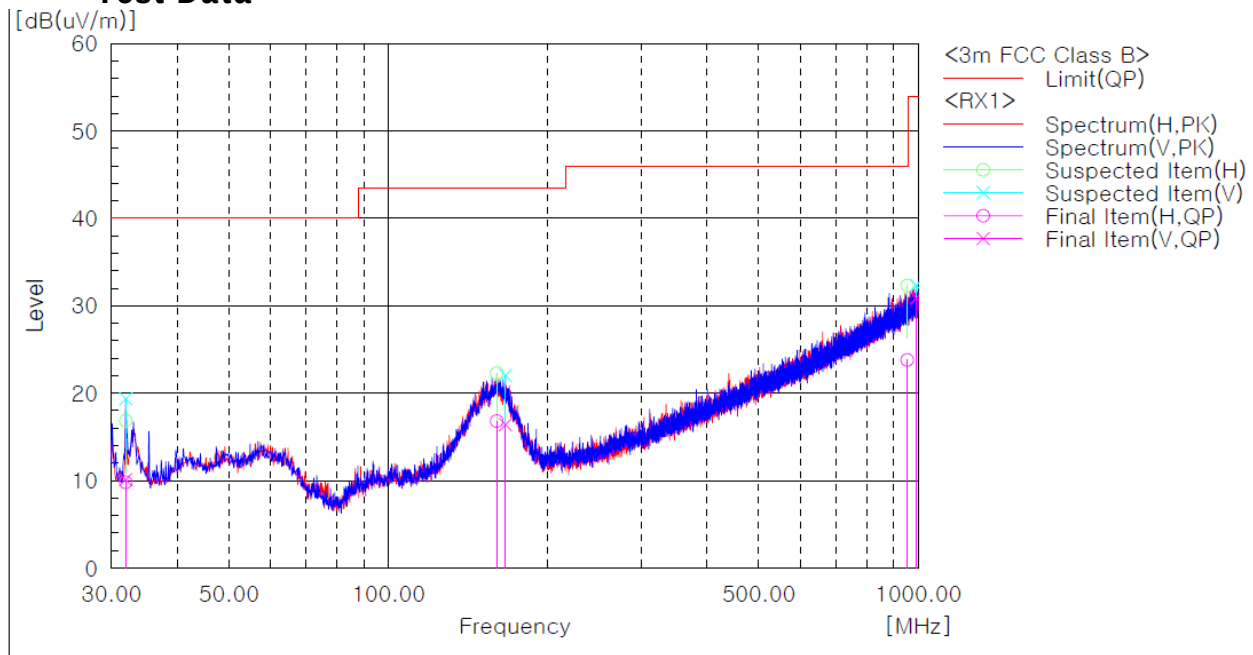
|           |                          |                    |                   |
|-----------|--------------------------|--------------------|-------------------|
| EUT       | Bluetooth Classic Module | Measurement Detail |                   |
| Model     | BCEA001                  | Frequency Range    | Below 1000MHz     |
| Test mode | Receiver                 | Detector function  | Quasi-Peak / Peak |

The requirements are:

☒ Complies

| Frequency (MHz) | Measured Data (dBuV/m) | Margin (dB) | Remark     |
|-----------------|------------------------|-------------|------------|
| 953.682         | 23.8                   | 22.2        | Quasi-Peak |

### Test Data



### Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(uV)] | c.f [dB(1/m)] | Result QP [dB(uV/m)] | Limit QP [dB(uV/m)] | Margin QP [dB] | Height [cm] | Angle [deg] |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-------------|
| 1   | 31.940          | V   | 25.3                | -15.2         | 10.1                 | 40.0                | 29.9           | 100.0       | 112.0       |
| 2   | 31.940          | H   | 25.0                | -15.2         | 9.8                  | 40.0                | 30.2           | 100.0       | 248.0       |
| 3   | 160.223         | H   | 20.5                | -3.7          | 16.8                 | 43.5                | 26.7           | 300.0       | 0.0         |
| 4   | 166.285         | V   | 20.8                | -4.4          | 16.4                 | 43.5                | 27.1           | 100.0       | 295.0       |
| 5   | 953.682         | H   | 16.4                | 7.4           | 23.8                 | 46.0                | 22.2           | 100.0       | 196.0       |
| 6   | 992.361         | V   | 22.5                | 8.4           | 30.9                 | 54.0                | 23.1           | 100.0       | 138.0       |

### Remark :

1. The field strength of spurious emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



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### 3) above 1 GHz

**Test mode : GFSK, CFG PKT Packet Type : 15 Packet Size : 339(DH5)**

|       |                          |                    |                |
|-------|--------------------------|--------------------|----------------|
| EUT   | Bluetooth Classic Module | Measurement Detail |                |
| Model | BCEA001                  | Frequency Range    | 1-25GHz        |
|       |                          | Detector function  | Average / Peak |

#### Remarks

We have tested three mode (X, Y, Z). The worst mode (Z axis) for final test.

The requirements are:

☒ Complies

| Frequency<br>(MHz) | Measured Data<br>(dBUV/m) | Margin<br>(dB) | Remark  |
|--------------------|---------------------------|----------------|---------|
| 2489.00            | 48.19                     | 5.81           | Average |

#### Test Data

Ch.0(Low Channel)

| Frequency<br>[MHz] | (P) | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
| 4804.00            | H   | 54.00                     | 74.00                     | 36.34                     | 47.52                     | 17.66                | 26.48                |
| 4804.00            | V   | 54.00                     | 74.00                     | 33.19                     | 45.53                     | 20.81                | 28.47                |
| 7206.00            | H   | 54.00                     | 74.00                     | 39.71                     | 50.01                     | 14.29                | 23.99                |
| 7206.00            | V   | 54.00                     | 74.00                     | 37.50                     | 48.86                     | 16.50                | 25.15                |
| 9608.00            | H   | 54.00                     | 74.00                     | 36.89                     | 49.98                     | 17.11                | 24.02                |
| 9608.00            | V   | 54.00                     | 74.00                     | 36.49                     | 50.76                     | 17.51                | 23.24                |
| 2390.00            | H   | 54.00                     | 74.00                     | 42.57                     | 49.06                     | 11.43                | 24.94                |
| 2390.00            | V   | 54.00                     | 74.00                     | 41.82                     | 47.38                     | 12.18                | 26.62                |
| 2498.00            | H   | 54.00                     | 74.00                     | 45.44                     | 52.65                     | 8.57                 | 21.35                |
| 2498.00            | V   | 54.00                     | 74.00                     | 45.75                     | 51.92                     | 8.26                 | 22.08                |



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### Ch.39(Mid Channel)

| Frequency<br>[MHz] | (P) | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
| 4880.00            | H   | 54.00                     | 74.00                     | 34.83                     | 45.64                     | 19.17                | 28.36                |
| 7320.00            | H   | 54.00                     | 74.00                     | 41.80                     | 50.32                     | 12.20                | 23.68                |
| 7320.00            | V   | 54.00                     | 74.00                     | 39.16                     | 49.02                     | 14.84                | 24.98                |
| 9760.00            | H   | 54.00                     | 74.00                     | 38.47                     | 50.44                     | 15.53                | 23.56                |
| 9760.00            | V   | 54.00                     | 74.00                     | 37.50                     | 50.31                     | 16.50                | 23.69                |
| 2390.00            | H   | 54.00                     | 74.00                     | 40.48                     | 47.51                     | 13.52                | 26.49                |
| 2390.00            | V   | 54.00                     | 74.00                     | 38.87                     | 46.36                     | 15.13                | 27.64                |
| 2489.00            | H   | 54.00                     | 74.00                     | 47.35                     | 52.04                     | 6.65                 | 21.96                |
| 2489.00            | V   | 54.00                     | 74.00                     | 48.19                     | 52.48                     | 5.81                 | 21.52                |

### Ch.78(High Channel)

| Frequency<br>[MHz] | (P) | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
| 7440.00            | H   | 54.00                     | 74.00                     | 44.83                     | 51.91                     | 9.17                 | 22.09                |
| 7440.00            | V   | 54.00                     | 74.00                     | 40.52                     | 49.92                     | 13.48                | 24.08                |
| 2390.00            | H   | 54.00                     | 74.00                     | 42.29                     | 48.71                     | 11.71                | 25.29                |
| 2390.00            | V   | 54.00                     | 74.00                     | 40.85                     | 47.79                     | 13.15                | 26.21                |
| 2483.50            | H   | 54.00                     | 74.00                     | 35.10                     | 48.71                     | 18.90                | 25.29                |
| 2483.50            | V   | 54.00                     | 74.00                     | 35.50                     | 46.94                     | 18.50                | 27.06                |
| 2504.00            | H   | 54.00                     | 74.00                     | 42.10                     | 46.73                     | 11.90                | 27.27                |
| 2504.00            | V   | 54.00                     | 74.00                     | 38.64                     | 45.61                     | 15.36                | 28.39                |



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### Test mode : 8-DPSK, CFG PKT Packet Type : 31 Packet Size : 1021(3DH5)

|       |                          |                    |                |
|-------|--------------------------|--------------------|----------------|
| EUT   | Bluetooth Classic Module | Measurement Detail |                |
| Model | BCEA001                  | Frequency Range    | 1-25GHz        |
|       |                          | Detector function  | Average / Peak |

### Remarks

We have tested three mode (X, Y, Z). The worst mode (Z axis) for final test.

The requirements are:

☒ Complies

| Frequency<br>(MHz) | Measured Data<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|--------------------|---------------------------|----------------|---------|
| 2489.00            | 43.79                     | 10.21          | Average |

### Test Data

#### Ch.0(Low Channel)

| Frequency<br>[MHz] | (P) | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
| 4804.00            | H   | 54.00                     | 74.00                     | 36.39                     | 46.15                     | 17.61                | 27.85                |
| 4804.00            | V   | 54.00                     | 74.00                     | 33.25                     | 46.03                     | 20.76                | 27.97                |
| 7206.00            | H   | 54.00                     | 74.00                     | 35.79                     | 49.18                     | 18.21                | 24.82                |
| 7206.00            | V   | 54.00                     | 74.00                     | 35.37                     | 49.21                     | 18.63                | 24.79                |
| 2390.00            | H   | 54.00                     | 74.00                     | 39.18                     | 46.40                     | 14.82                | 27.61                |
| 2390.00            | V   | 54.00                     | 74.00                     | 37.69                     | 44.83                     | 16.31                | 29.17                |
| 2498.00            | H   | 54.00                     | 74.00                     | 41.55                     | 49.88                     | 12.45                | 24.12                |
| 2498.00            | V   | 54.00                     | 74.00                     | 41.76                     | 49.79                     | 12.24                | 24.21                |

#### Ch.39(Mid Channel)

| Frequency<br>[MHz] | (P) | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
| 7320.00            | H   | 54.00                     | 74.00                     | 36.33                     | 48.78                     | 17.67                | 25.22                |
| 7320.00            | V   | 54.00                     | 74.00                     | 35.62                     | 48.20                     | 18.38                | 25.80                |
| 2390.00            | H   | 54.00                     | 74.00                     | 36.89                     | 45.35                     | 17.11                | 28.66                |
| 2390.00            | V   | 54.00                     | 74.00                     | 36.28                     | 44.18                     | 17.72                | 29.82                |
| 2489.00            | H   | 54.00                     | 74.00                     | 43.14                     | 50.17                     | 10.87                | 23.84                |
| 2489.00            | V   | 54.00                     | 74.00                     | 43.79                     | 50.77                     | 10.21                | 23.23                |



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### Ch.78(High Channel)

| Frequency<br>[MHz] | (P) | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
| 7440.00            | H   | 54.00                     | 74.00                     | 37.31                     | 49.57                     | 16.69                | 24.43                |
| 7440.00            | V   | 54.00                     | 74.00                     | 36.00                     | 48.56                     | 18.00                | 25.44                |
| 2390.00            | H   | 54.00                     | 74.00                     | 38.79                     | 47.07                     | 15.21                | 26.93                |
| 2390.00            | V   | 54.00                     | 74.00                     | 38.45                     | 46.02                     | 15.55                | 27.98                |
| 2528.00            | H   | 54.00                     | 74.00                     | 42.71                     | 48.38                     | 11.30                | 25.62                |
| 2528.00            | V   | 54.00                     | 74.00                     | 41.57                     | 48.15                     | 12.43                | 25.85                |



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### Test mode : Receiver

|       |                          |                    |                |
|-------|--------------------------|--------------------|----------------|
| EUT   | Bluetooth Classic Module | Measurement Detail |                |
| Model | BCEA001                  | Frequency Range    | 1-25GHz        |
|       |                          | Detector function  | Average / Peak |

### Remarks

We have tested three mode (X, Y, Z). The worst mode (Z axis) for final test.

The requirements are:

☒ Complies

| Frequency<br>(MHz)                                                   | Measured Data<br>(dBuV/m) | Margin<br>(dB) | Remark |
|----------------------------------------------------------------------|---------------------------|----------------|--------|
| No emissions were detected at a level greater than 20dB below limit. |                           |                |        |

### Test Data

#### Ch.0(Low Channel)

| Frequency<br>[MHz] | (P) | Reading AV<br>[dB(uV)] | Reading PK<br>[dB(uV)] | Factor<br>[dB(1/m)] | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|------------------------|------------------------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
|--------------------|-----|------------------------|------------------------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|

No emissions were detected at a level greater than 20dB below limit.

#### Ch.39(Mid Channel)

| Frequency<br>[MHz] | (P) | Reading AV<br>[dB(uV)] | Reading PK<br>[dB(uV)] | Factor<br>[dB(1/m)] | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|------------------------|------------------------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
|--------------------|-----|------------------------|------------------------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|

No emissions were detected at a level greater than 20dB below limit.

#### Ch.78(High Channel)

| Frequency<br>[MHz] | (P) | Reading AV<br>[dB(uV)] | Reading PK<br>[dB(uV)] | Factor<br>[dB(1/m)] | Limit<br>AV<br>[dB(uV/m)] | Limit<br>PK<br>[dB(uV/m)] | Level<br>AV<br>[dB(uV/m)] | Level<br>PK<br>[dB(uV/m)] | Margin<br>AV<br>[dB] | Margin<br>PK<br>[dB] |
|--------------------|-----|------------------------|------------------------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|
|--------------------|-----|------------------------|------------------------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------|----------------------|

No emissions were detected at a level greater than 20dB below limit.



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### 2.1.8 AC Conducted Emissions

#### Test Location

Shielded Room

#### Frequency Range of Measurement

150 kHz to 30 MHz

#### Instrument Settings

IF Band Width: 9 kHz

#### Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

#### Limit

##### - 15.207(a)

| Frequency (MHz) | Conducted Limit (dBuV) |           |
|-----------------|------------------------|-----------|
|                 | Quasi-peak             | Average   |
| 0.15 ~ 0.5      | 66 to 56*              | 56 to 46* |
| 0.5 ~ 5         | 56                     | 46        |
| 5 ~ 30          | 60                     | 50        |

\* Decreases with the logarithm of the frequency.

#### Test Results

The requirements are:

☒ Complies

| Frequency (MHz) | Measured Data (dBuV/m) | Margin (dB) | Remark  |
|-----------------|------------------------|-------------|---------|
| 23.860 500      | 26.9                   | 23.1        | Average |



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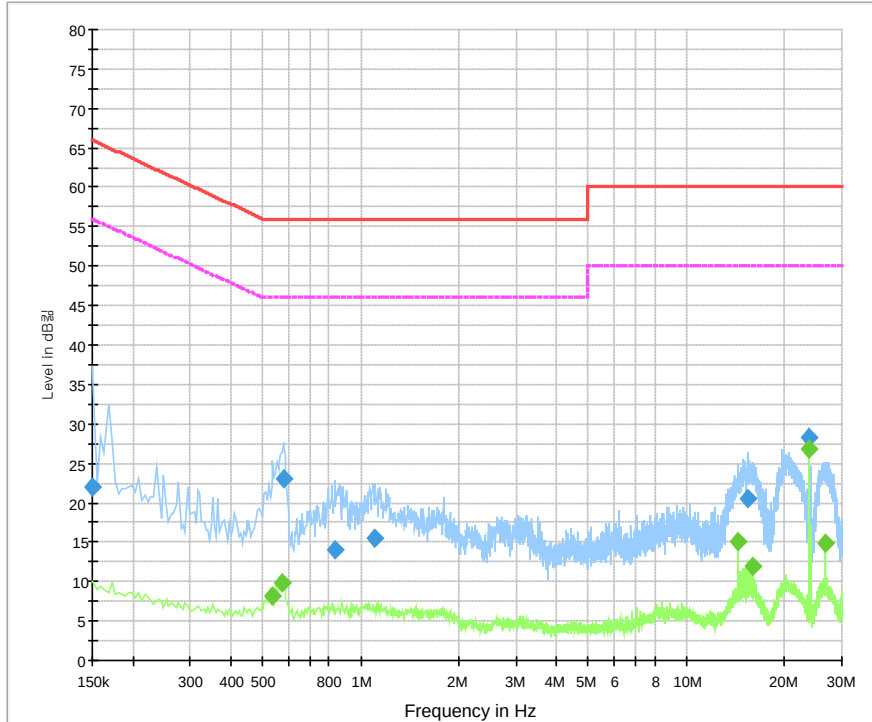
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### Test Data

#### [LINE]

Class B\_L1



### Final Result 1

| Frequency (MHz) | QuasiPeak (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|------------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.150000        | 21.9             | 1000.0          | 9.000           | On     | L1   | 9.7        | 44.1        | 66.0         |
| 0.577500        | 23.1             | 1000.0          | 9.000           | On     | L1   | 9.9        | 32.9        | 56.0         |
| 0.834000        | 14.0             | 1000.0          | 9.000           | On     | L1   | 9.8        | 42.0        | 56.0         |
| 1.104000        | 15.5             | 1000.0          | 9.000           | On     | L1   | 9.7        | 40.5        | 56.0         |
| 15.481500       | 20.4             | 1000.0          | 9.000           | On     | L1   | 9.9        | 39.6        | 60.0         |
| 23.860500       | 28.2             | 1000.0          | 9.000           | On     | L1   | 10.0       | 31.8        | 60.0         |

### Final Result 2

| Frequency (MHz) | CAverage (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|-----------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.532500        | 8.1             | 1000.0          | 9.000           | On     | L1   | 9.9        | 37.9        | 46.0         |
| 0.573000        | 9.8             | 1000.0          | 9.000           | On     | L1   | 9.9        | 36.2        | 46.0         |
| 14.320500       | 15.1            | 1000.0          | 9.000           | On     | L1   | 9.9        | 34.9        | 50.0         |
| 15.895500       | 11.9            | 1000.0          | 9.000           | On     | L1   | 9.9        | 38.1        | 50.0         |
| 23.860500       | 26.9            | 1000.0          | 9.000           | On     | L1   | 10.0       | 23.1        | 50.0         |
| 26.844000       | 14.9            | 1000.0          | 9.000           | On     | L1   | 10.0       | 35.1        | 50.0         |



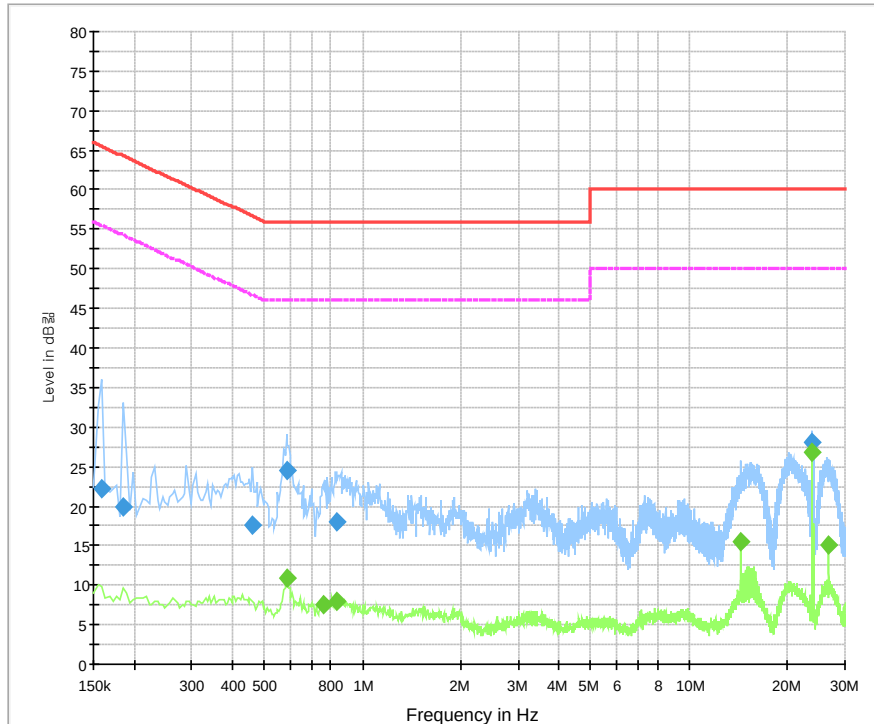
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### [NEUTRAL]

Class B\_N



### Final Result 1

| Frequency (MHz) | QuasiPeak (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|------------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.159000        | 22.3             | 1000.0          | 9.000           | On     | N    | 9.8        | 43.2        | 65.5         |
| 0.186000        | 20.0             | 1000.0          | 9.000           | On     | N    | 9.9        | 44.2        | 64.2         |
| 0.460500        | 17.7             | 1000.0          | 9.000           | On     | N    | 9.9        | 39.0        | 56.7         |
| 0.586500        | 24.4             | 1000.0          | 9.000           | On     | N    | 9.9        | 31.6        | 56.0         |
| 0.829500        | 17.9             | 1000.0          | 9.000           | On     | N    | 9.8        | 38.1        | 56.0         |
| 23.860500       | 28.1             | 1000.0          | 9.000           | On     | N    | 10.1       | 31.9        | 60.0         |

### Final Result 2

| Frequency (MHz) | CAverage (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|-----------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.586500        | 10.9            | 1000.0          | 9.000           | On     | N    | 9.9        | 35.1        | 46.0         |
| 0.757500        | 7.5             | 1000.0          | 9.000           | On     | N    | 9.8        | 38.5        | 46.0         |
| 0.829500        | 7.9             | 1000.0          | 9.000           | On     | N    | 9.8        | 38.1        | 46.0         |
| 14.320500       | 15.5            | 1000.0          | 9.000           | On     | N    | 10.0       | 34.6        | 50.0         |
| 23.860500       | 26.8            | 1000.0          | 9.000           | On     | N    | 10.1       | 23.2        | 50.0         |
| 26.844000       | 15.2            | 1000.0          | 9.000           | On     | N    | 10.1       | 34.8        | 50.0         |



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### APPENDIX A – Test Equipment Used For Tests

|    | Name of Equipment        | Manufacturer    | Model No.    | Serial No.    | Cal Date   | Due Date   |
|----|--------------------------|-----------------|--------------|---------------|------------|------------|
| 1  | Signal Analyzer          | Agilent         | N9020A       | MY50510324    | 2017-02-03 | 2018-02-03 |
| 2  | Signal Generator         | Rohde & Schwarz | SMB100A      | 175528        | 2016-11-01 | 2017-11-01 |
| 3  | EMI Test Receiver        | Rohde & Schwarz | ESCI7        | 100816        | 2016-10-31 | 2017-10-31 |
| 4  | LISN                     | Rohde & Schwarz | ENV216       | 101760        | 2017-02-03 | 2018-02-03 |
| 5  | EMI Test Receiver        | Rohde & Schwarz | ESCI7        | 100814        | 2016-11-01 | 2017-11-01 |
| 6  | Trilog Broadband Antenna | SCHWARZBECK     | VULB 9161 SE | 9161-4133     | 2015-06-18 | 2017-06-18 |
| 7  | Active Loop Antenna      | SCHWARZBECK     | FMZB 1513    | 1513-126      | 2016-05-25 | 2018-05-25 |
| 8  | 6dB Attenuator           | R&S             | DNF          | 272.4110.50-2 | 2016-11-01 | 2017-11-01 |
| 9  | 6dB Attenuator           | R&S             | DNF          | 272.4110.50-1 | 2017-02-03 | 2018-02-03 |
| 10 | AMPLIFIER                | SONOMA          | 310          | 291721        | 2017-02-02 | 2018-02-02 |
| 11 | EMI Test Receiver        | Rohde & Schwarz | ESU40        | 100336        | 2015-05-14 | 2017-05-14 |
| 12 | Preamplifier             | Agilent         | 8449B        | 3008A02011    | 2016-12-01 | 2017-12-01 |
| 13 | Horn Antenna             | ETS-Lindgren    | 3115         | 00078894      | 2015-09-02 | 2017-09-02 |
| 14 | Horn Antenna             | ETS-Lindgren    | 3116         | 00062504      | 2015-09-04 | 2017-09-04 |
| 15 | Horn Antenna             | ETS-Lindgren    | 3117         | 00154525      | 2015-09-02 | 2017-09-02 |