



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5) Date : Jul 28, 2019

Application No. : LY022378(0)

Applicant : KONDOR LIMITED  
CHRISTCHURCH BUSINESS PARK, RADAR WAY,  
BH23 4FL. UK

|                      |                    |           |
|----------------------|--------------------|-----------|
| Sample Description : | Sample Description | Model No. |
|                      | AIRLINE ADAPTOR 2  | KSBTAP2   |

Date Received : Jul 05, 2019

Test Period : Jul 07, 2019 to Jul 24, 2019

Test Requested : FCC Certification for FCC Part 15, subpart C

Test Method : 47 CFR Part 15 (10-1-18 Edition),  
ANSI C63.10 – 2013,  
ANSI C63.4 – 2014

Test Engineer : Mr. Leung Shu Kan, Ken

Conclusion : The submitted sample was found to comply with technical requirement of FCC  
Part 15 Subpart C, section 15.247.

For and on behalf of  
CMA Industrial Development Foundation Limited

Authorized Signature : \_\_\_\_\_ Page 1 of 71

Mr. WONG Lap-pong, Andrew  
Manager

FCC ID: 2ADFF-KSBTAP2

Document name: FCC/ISED for FHSS - Document Ref No: RT-EL-EMC-048 - Issue Date: 13 Mar 2019 - Edition: 2

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### RESULT SUMMARY

| Test Item                                    | FCC Requirement            | Test Method                           | Result |
|----------------------------------------------|----------------------------|---------------------------------------|--------|
| Number of hopping frequency                  | §15.247(a)(1)(iii)         | ANSI C63.10 §7.8.3                    | PASS   |
| Band-edge                                    | §15.247(d)                 | ANSI C63.10 §7.8.6<br>and 6.10        | PASS   |
| Carrier frequency separation                 | §15.247(a)                 | ANSI C63.10 §7.8.2                    | PASS   |
| Time of occupancy (dwell time)               | §15.247(a)                 | ANSI C63.10 §7.8.4                    | PASS   |
| Output power                                 | §15.247(b)(1)              | ANSI C63.10 §7.8.5                    | PASS   |
| Occupied bandwidth                           | §15.247(a)                 | ANSI C63.10 §7.8.7<br>and 6.9.2       | PASS   |
| Conducted spurious emission<br>(Transmitter) | §15.247(d)                 | ANSI C63.10 §7.8.8,<br>and §11.12.2.1 | PASS   |
| Radiated spurious emission<br>(Transmitter)  | §15.247(d)                 | ANSI C63.10 §6.4 –<br>6.6             | PASS   |
| Radiated spurious emission<br>(Receiver)     | §15.109(a)                 | ANSI C63.4 §8.3                       | PASS   |
| Conducted emission on AC mains               | §15.207(a)                 | ANSI C63.4 §7.3                       | PASS   |
| Frequency Hopping System<br>Requirement      | §15.247(a)(1), (g),<br>(h) | N/A                                   | PASS   |

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### 1 Product Information

#### 1.1 General Information

|                      |         |
|----------------------|---------|
| Product Description: | Model:  |
| AIRLINE ADAPTOR 2    | KSBTAP2 |

Primary function : Transmit the audio signal through Bluetooth communication from a audio player

Power supply : DC 3.7V (Li-ion Rechargeable battery)  
DC 5.0V (micro-usb input)

RF related function : Bluetooth non-BLE communication

Electric Accessories sold with : Nil

Interconnection cable : 82mm length USB to micro-USB cable (head to head)  
associated sold with

Operating condition : Not specified

Model difference : Not applicable

Remark : N/A

#### 1.2 Technical Information

Operating Frequency : 2402 – 2480MHz

Digital Modulation : FHSS

Modulation : GFSK,  $\pi/4$ DQPSK, 8DPSK

Number of Channel : 79

Channel Bandwidth : 1.0MHz

Occupied Bandwidth : 1.20MHz

Signal Type : Data

Number of Antenna : One

Antenna Type : PCB Type

Antenna Gain : 2.0dBi

Rated Input Voltage : DC3.7V (Li-ion rechargeable battery)  
DC5.0V (micro-usb input)

RF Technology Used : Bluetooth 4.1+EDR (non BLE)

Simplex or Duplex : Half-duplex

Adaptivity : FHSS adaptivity

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### 1.3 Associated Electric Accessories Information

N/A

### 1.4 Associated Cables

| Cable Type             | Length | Shielding | Ferrite attached |
|------------------------|--------|-----------|------------------|
| USB to micro USB cable | 82mm   | No        | No               |

## 2.0 Equipment Units Tested (EUT)

Product Description : AIRLINE ADAPTOR  
Model : KSBTAP2  
Serial No. : Not labelled  
Sample Type : Production sample and engineering sample  
Sample No. : RY034755-003(5) and RY034755-0047(6)  
Rationale of selection : Only one model model

## 3.0 Location of Test Facility

CMA Industrial Development Foundation Ltd.  
Room 1302, Yan Hing Centre,  
9-13 Wong Chuk Yeung,  
Fo Tan, Shatin,  
New Territories  
Hong Kong.

FCC Accredited Lab (Designation Number: HK0004)

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### 4.0 List of test equipment, supporting equipment and cables

#### 4.1 Test equipment

| Equipment                                        | Manufacturer     | Model No.    | Serial No.  | Calibration Due Date | Calibration Period |
|--------------------------------------------------|------------------|--------------|-------------|----------------------|--------------------|
| EMI Test Receiver                                | Rohde & Schwarz  | ESCS30       | 100001      | 29 Mar 2020          | 1Year              |
| Spectrum Analyzer                                | R&S              | FSV40        | 100964      | 11 Sep 2019          | 1Year              |
| Spectrum Analyzer                                | Rohde & Schwarz  | FSP30        | 100628      | 26 Mar 2020          | 1Year              |
| Broadband Antenna                                | Schaffner        | CBL6112B     | 2692        | 27 Mar 2021          | 2Years             |
| Loop Antenna                                     | EMCO             | 6502         | 00056620    | 25 Jan 2020          | 2Years             |
| Horn Antenna                                     | Schwarzbeck      | BBHA 9120D   | 9120D-531   | 21 Dec 2020          | 2Years             |
| Broadband Pre-Amplifier                          | Schwarzbeck      | BBV 9718     | 9718-119    | 21 Dec 2020          | 2Years             |
| Horn Antenna                                     | Schwarzbeck      | BBHA 9170    | BBHA9170442 | 01 Aug 2020          | 2Years             |
| Broadband Pre-Amplifier                          | Schwarzbeck      | BBV 9719     | 9719-010    | 01 Aug 2020          | 2Years             |
| Coaxial Cable                                    | Schaffner        | RG 213/U     | N/A         | 16 May 2020          | 1Year              |
| Coaxial Cable                                    | Suhner           | RG 214/U     | N/A         | 16 May 2020          | 1Year              |
| Coaxial Cable                                    | Suhner           | Sucoflex_104 | N/A         | 21 Dec 2019          | 1Year              |
| LISN                                             | Rohde & Schwarz  | ENV216       | 101323      | 22 Jan 2020          | 1Year              |
| Coaxial Cable                                    | Tyco Electronics | RG 58C/U     | N/A         | 23 Oct 2019          | 1Year              |
| <b>Rohde &amp; Schwarz TS8997 Testing System</b> |                  |              |             |                      |                    |
| Spectrum Analyzer                                | Rohde & Schwarz  | FSV 40       | 101190      | 08 Aug 2019          | 1Year              |
| OSP                                              | Rohde & Schwarz  | OSP          | OSP120 V02  | 08 Aug 2019          | 1Year              |

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### 4.2 Supporting equipment

| Equipment Name | Manufacturer | Model       | Serial       | Provided by |
|----------------|--------------|-------------|--------------|-------------|
| Control board* | CSR          | CSR USB-SPI | Not labelled | Applicant   |
| USB Charger    | Apple        | A1299       | Not labelled | CMA         |

Remark: \*only used for configure engineering mode

### 4.3 Cables

| Cable Type | Length | Shielding    | Ferrite used | Provided by |
|------------|--------|--------------|--------------|-------------|
| USB Cable* | 1m     | Not shielded | No           | CMA         |

Remark: \*only used for configure engineering mode

### 4.4 Software

| Software Name               | Version | Function                                   | Provided by |
|-----------------------------|---------|--------------------------------------------|-------------|
| CSR Bluesuite<br>BlueTest3* | V2.6.8  | Control the engineering mode of the device | Applicant   |

Remark: \*only used for configure engineering mode

## 5.0 Measurement Uncertainty

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a level of confidence of approximately 95%.

### Radiated emissions

| Frequency                     | Uncertainty ( $U_{lab}$ ) |
|-------------------------------|---------------------------|
| 30MHz ~ 200MHz (Horizontal)   | 4.59dB                    |
| 30MHz ~ 200MHz (Vertical)     | 4.49dB                    |
| 200MHz ~ 1000MHz (Horizontal) | 4.94dB                    |
| 200MHz ~ 1000MHz (Vertical)   | 4.97dB                    |
| 1GHz ~ 6GHz                   | 4.52dB                    |
| 6GHz ~ 18GHz                  | 4.58dB                    |
| 18GHz ~ 40GHz                 | 4.66dB                    |

### Line-conducted emissions

| Frequency      | Uncertainty ( $U_{lab}$ ) |
|----------------|---------------------------|
| 150kHz ~ 30MHz | 2.80dB                    |

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### 6.0 Measurement

#### 6.1 General Test condition

Temperature : 28.9°C  
Test Voltage : DC 3.7V and AC 120V  
Humidity : 48.2%  
Atmosphere Pressure : 100.2kPa

#### 6.2 Number of hopping frequency

##### 6.2.1 Measurement

Requirement : FCC Part 15 § 15.247(a)(1)(iii)  
Measuring procedure : ANSI C63.10:2013, clause 7.8.3  
Span : 83.5MHz  
RBW : 300kHz  
VBW : 300kHz  
Frequency range : 2.4000 – 2.4835GHz  
Modulation tested : GFSK  
Packet Type tested : DH5  
Additional measuring procedure : Nil

##### 6.2.2 Final Result

| No. of hopping channels measured | Limit | Result | Worst case mode |
|----------------------------------|-------|--------|-----------------|
| 79                               | ≥ 15  | PASS   | GFSK and DH5    |

Remark: Detail test result and equipment setting refer to appendix A, A4

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### 6.3 Band-edge measurement

#### 6.3.1 Measurement

- |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Requirement                         | : FCC Part 15 §15.247(d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Measuring procedure                 | : ANSI C63.10:2013, section 7.8.6 and 6.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hopping mode                        | : Enabled and Disable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| RBW                                 | : 100kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| VBW                                 | : 300kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Frequency range                     | : 2310 – 2400MHz and 2483.5 – 2500MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Modulation tested                   | : GFSK, $\pi/4$ DQPSK, 8DPSK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Packet Type tested                  | : DH5, 2DH5, 3DH5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Channel tested for non-hopping mode | : 2402MHz for lowed band edge and 2480MHz for higher band edge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Additional measuring procedure      | : For lower band edge (2400MHz) <ol style="list-style-type: none"><li>1. Using the “Measurement 1” setting shown below the scan plot within the frequency span from 2400 – 2483.5MHz to measure the maximum peak value of fundamental</li><li>2. Using the “Measurement 2” setting shown below the scan plot within the frequency span from 2310 – 2400MHz to measure the bandedge reading</li><li>3. Compare that reading in procedure with the limit which equal to the measured maximum peak in procedure 1 minus 20dB</li></ol> For Upper bandedge (2483.5MHz) <ol style="list-style-type: none"><li>1. Using the “Measurement 1” setting shown below the scan plot within the frequency span from 2400 – 2483.5MHz to measure the maximum peak value of fundamental</li><li>2. Using the “Measurement 2” setting shown below the scan plot within the frequency span from 2483.5 – 2500MHz to measure the bandedge reading</li><li>3. Compare that reading in procedure with the limit which equal to the measured maximum peak in procedure 1 minus 20dB</li></ol> |

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### 6.3.2 Final Result

| Bandedge frequency<br>for lower bandedge<br>(Worst Case)  | Worst<br>case<br>(dBc) <sup>2</sup>    | Detector | Limit <sup>1</sup><br>(dBc) | Result | Worst case   |
|-----------------------------------------------------------|----------------------------------------|----------|-----------------------------|--------|--------------|
| 2399.62500                                                | 41.8                                   | Peak     | $\geq 20.0$                 | PASS   | GFSK and DH5 |
| Bandedge frequency<br>for higher bandedge<br>(Worst Case) | Worst<br>case in<br>(dBc) <sup>2</sup> | Detector | Limit <sup>1</sup>          | Result | Worst case   |
| 2483.525000                                               | 56.1                                   | Peak     | $\geq 20.0$                 | PASS   | GFSK and DH5 |

Remark: 1) The limit is based on the transmitter demonstrated compliance with peak conducted power limit on section 6.4.2 of this report.

2) The Worst case dBc is the peak values measured in procedure 1 minus the worst case bandedge emission

3) Detail test result and equipment setting refer to appendix A, A5-8, A19-20, A35-36

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### 6.4 Carrier Frequency Separation

#### 6.4.1 Measurement

|                                |                                                                                                                                                                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Requirement                    | : FCC Part 15 §15.247(a)                                                                                                                                                                                                                             |
| Measuring procedure            | : ANSI C63.10:2013, section 7.8.2                                                                                                                                                                                                                    |
| Hopping mode                   | : Enabled                                                                                                                                                                                                                                            |
| RBW                            | : 300kHz                                                                                                                                                                                                                                             |
| VBW                            | : 300kHz                                                                                                                                                                                                                                             |
| Frequency range                | : 2401-2404MHz, 2440-2443MHz, 2478-2481MHz                                                                                                                                                                                                           |
| Modulation tested              | : GFSK <sup>2</sup>                                                                                                                                                                                                                                  |
| Packet Type tested             | : DH5 <sup>2</sup>                                                                                                                                                                                                                                   |
| Additional measuring procedure | : Nil                                                                                                                                                                                                                                                |
| Remark                         | : 1) Since the measured value is more than 1.5 times of limit, only middle channel is measured.<br>2) Since the modulation and packet type does not affect the channel separation, GFSK and DH5 are selected as represented modulation and data type |

#### 6.4.2 Final Result

| Carrier Frequency Separation | Limit <sup>1</sup> | Result | Worst case mode |
|------------------------------|--------------------|--------|-----------------|
| 1.009900MHz                  | 0.846667MHz        | PASS   | GFSK and DH5    |

Remark: 1) Limit is 2/3 of the 20dB bandwidth in section 6.7 and conducted peak power is less than 0.125W in section 6.6 of this report.

2) Detail test result and equipment setting refer to appendix A, A37-39

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# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.5 Time of occupancy (dwell time)

#### 6.5.1 Measurement

|                                     |                                                                                                                                                                                                                                                                       |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Requirement                         | : FCC Part 15 §15.247(a)                                                                                                                                                                                                                                              |
| Measuring procedure                 | : ANSI C63.10:2013, section 7.8.4                                                                                                                                                                                                                                     |
| Hopping mode                        | : Disable                                                                                                                                                                                                                                                             |
| RBW                                 | : 500kHz                                                                                                                                                                                                                                                              |
| VBW                                 | : 1MHz                                                                                                                                                                                                                                                                |
| Modulation tested                   | : GFSK <sup>3</sup>                                                                                                                                                                                                                                                   |
| Packet Type tested                  | : DH1, DH3, DH5                                                                                                                                                                                                                                                       |
| Channel tested for non-hopping mode | : 2441MHz                                                                                                                                                                                                                                                             |
| Additional measuring procedure      | : 1) Setup engineering sample to channel 2441MHz and DH1 packet size to perform the measurement according to ANSI C63.10, section 7.8.4<br>2) Find the worst case packet size<br>3) Repeat procedure1 with the worst case packet size for channel 2402MHz and 2480MHz |
| Remark                              | : 1) Since the modulation does not affect the dwell time, GFSK is selected as represented modulation.                                                                                                                                                                 |

#### 6.5.2 Final Result

| Dwell time (worst case) | Limit  | Result | Worst case mode |
|-------------------------|--------|--------|-----------------|
| 313.000ms               | ≤400ms | PASS   | GFSK and DH5    |

Remark: 1) Detail test result and equipment setting refer to appendix A, A9-11

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廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.6 Output Power

#### 6.6.1 Measurement

Requirement : FCC Part 15 §15.247(b) (1)  
Measuring procedure : ANSI C63.10:2013, section 7.8.5  
Hopping mode : Disable  
Modulation tested : GFSK,  $\pi/4$ DQPSK, 8DPSK  
Packet Type tested : DH5<sup>1</sup>  
Channel tested for non-hopping mode : 2402MHz, 2441MHz, 2480MHz  
Additional measuring procedure : Nil  
Remark : 1) Since the packet size does not affect the output power, DH5 is selected as represented packet size.

#### 6.6.2 Final Result

##### (a) Maximum peak conducted output power

| Maximum peak conducted output power | Limit(s) <sup>1</sup> | Result | Modulation    |
|-------------------------------------|-----------------------|--------|---------------|
| 3.0dBm                              | $\leq 21.0$ dBm       | PASS   | GFSK          |
| 3.0dBm                              | $\leq 21.0$ dBm       | PASS   | $\pi/4$ DQPSK |
| 3.0dBm                              | $\leq 21.0$ dBm       | PASS   | 8DPSK         |

Remark: 1) 0.125W (21.0dBm) limit is used for 2/3 20dB bandwidth requirement for channel separation.

2) Detail test result and equipment setting refer to appendix A, A15, A24, A31

##### (b) Maximum peak e.i.r.p.

| Maximum peak e.i.r.p. <sup>1</sup> | Limit(s) <sup>2</sup> | Result | Modulation    |
|------------------------------------|-----------------------|--------|---------------|
| 5.0dBm                             | $\leq 27.0$ dBm       | PASS   | GFSK          |
| 5.0dBm                             | $\leq 27.0$ dBm       | PASS   | $\pi/4$ DQPSK |
| 5.0dBm                             | $\leq 27.0$ dBm       | PASS   | 8DPSK         |

Remark: 1) Maximum peak e.i.r.p. = Maximum peak conducted output power + antenna gain (dBi)

2) Maximum peak e.i.r.p. limit = Maximum peak conducted output power limit + 6dBi

3) Detail test result and equipment setting refer to appendix A, A15, A24, A31

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.7 Occupied Bandwidth

#### 6.7.1 Measurement

Requirement : FCC Part 15 §15.247(a)  
Measuring procedure : ANSI C63.10:2013, section 7.8.7 and 6.9.2  
Hopping mode : Disable  
Modulation tested : GFSK,  $\pi/4$ DQPSK, 8DPSK  
Packet Type tested : DH5<sup>1</sup>  
Channel tested for non-hopping mode : 2402MHz, 2441MHz, 2480MHz  
Additional measuring procedure : Nil  
Remark : 1) Since the packet size does not affect the bandwidth, DH5 is selected as represented packet size.

#### 6.7.2 Final Result

| 20dB bandwidth | 99% OBW   | Modulation    |
|----------------|-----------|---------------|
| 960.0kHz       | 860.0kHz  | GFSK          |
| 1250.0kHz      | 1190.0kHz | $\pi/4$ DQPSK |
| 1270.0kHz      | 1200.0kHz | 8DPSK         |

Remark: 1) Detail test result and equipment setting refer to appendix A, A12-14, A16-18, A21-23, A25-30, A32-34.

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.8 Conducted Spurious emission (Transmitter)

#### 6.8.1 Measurement

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Requirement                         | : FCC Part 15 §15.247(d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Measuring procedure                 | : ANSI C63.10:2013, section 5.5, 5.6, 7.8.8 and 11.12.2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Hopping mode                        | : Disable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| RBW                                 | : Refer to pre-measurement and final measurement setting                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Detector                            | : Refer to pre-measurement and final measurement setting                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Modulation tested                   | : GFSK <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Packet Type tested                  | : DH5 <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Channel tested for non-hopping mode | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Additional measuring procedure      | : 1) Setup engineering sample to channel 2402MHz to perform the measurement according to ANSI C63.10, section 7.8.8 with pre-measurement setting<br>2) If the pre-measurement is over the limit, the final measurement is performed for the specific frequency according to final measurement setting or restricted band frequency<br>3) For non-restricted band frequency, peak detector and 100kHz RBW will be used for final measurement.<br>4) Repeat the procedure 1 to 3 for channel frequency of 2441MHz and 2480MHz |
| Remark                              | : 1) Since the GFSK generates a higher SPD with power level, GFSK is selected as represented modulation for testing.<br>2) Since DH5 generates a higher dwell time, DH5 is selected as representative packet size for testing                                                                                                                                                                                                                                                                                               |

#### 6.8.2 Final Result

| Worst case spurious emission frequency | Worst case spurious emission power <sup>1</sup> | Limit <sup>2</sup> | Margin  | Result | Worst case mode |
|----------------------------------------|-------------------------------------------------|--------------------|---------|--------|-----------------|
| 2399.945000MHz                         | -38.5dBm                                        | -23.2dBm           | -15.3dB | PASS   | GFSK and DH5    |

- Remark: 1) Spurious emission power = measured conducted power + antenna gain(dBi) + ground reflection factor according to ANSI C63.10 section 11.12.2.2 for restricted band emission.  
2) For restricted band emission, limit = restricted band field strength limit (dBuV/m) – 9.54 + 104.75dB according to ANSI C63.10 section 11.12.2.2 For non-restricted band, limit = SPD/100kHz – 20dB.  
3) Detail test result and equipment setting refer to appendix A, A40-45

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.9 Radiated Spurious emission (Transmitter)

#### 6.9.1 Measurement

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 0.4m and 0.8m high above the ground for below 1GHz measurement and 1.5m high above the ground for above 1GHz measurement. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1 m above the ground.

For 30MHz to 300MHz, biconical antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. And the reference point of antenna shall be 1 m above the ground. Same procedure for frequency 300MHz to 1000MHz but Log-periodic antenna is used for final measurements.

For above 1GHz, horn antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. Preamplifier and High Pass filter was used for measurements. The reference point of antenna shall be 1 m above the ground.

The device was rotated through three X, Y, Z orthogonal to determine which attitude and configuration produce the highest emission during measurement for Radiated Emission measurement.

The Frequencies from fundamental up to the tenth harmonics were investigated, and emissions more 20dB below limit were not reported.

Bluetooth hopping + charging mode with GFSK modulation and DH5 packet type are selected as worst case mode for spurious radiated emission test from cabinet.

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.9.2 Final Result

a) Test mode: Bluetooth + charging mode

| Polarization | Frequency (MHz) | Reading at 3m (dBμV) | Transducer Factor (dB/m) | Field Strength at 3m <sup>1</sup> (dBμV/m) | Limit at 3m (dBμV/m) | Margin (dB) | Detector (PK/QP/AV) |
|--------------|-----------------|----------------------|--------------------------|--------------------------------------------|----------------------|-------------|---------------------|
| V            | 77.559          | 9.9                  | 9.8                      | 19.7                                       | 40.0                 | -20.3       | QP                  |
| H            | 123.206         | 11.6                 | 12.6                     | 24.2                                       | 43.5                 | -19.3       | QP                  |
| V            | 134.617         | 11.3                 | 12.6                     | 23.9                                       | 43.5                 | -19.6       | QP                  |
| H            | 203.069         | 8.8                  | 14.5                     | 23.3                                       | 43.5                 | -20.2       | QP                  |
| H            | 247.936         | 11.6                 | 14.5                     | 26.1                                       | 46.0                 | -19.9       | QP                  |
| H            | 341.684         | 17.6                 | 16.9                     | 34.5                                       | 46.0                 | -11.5       | QP                  |
| V            | 342.540         | 16.0                 | 16.9                     | 32.9                                       | 46.0                 | -13.1       | QP                  |
| H            | 2400.000        | 64.0                 | -4.7                     | 59.3                                       | 74.0                 | -14.7       | Peak                |
| H            | 2400.000        | 32.5                 | -4.7                     | 27.8                                       | 54.0                 | -26.2       | Average             |
| H            | 2483.500        | 64.2                 | -4.7                     | 59.5                                       | 74.0                 | -14.5       | Peak                |
| H            | 2483.500        | 31.1                 | -4.7                     | 26.4                                       | 54.0                 | -27.6       | Average             |
| V            | 4803.865        | 58.3                 | 2.3                      | 60.6                                       | 74.0                 | -13.4       | Peak                |
| V            | 4803.889        | 27.9                 | 2.3                      | 30.2                                       | 54.0                 | -23.8       | Average             |
| H            | 4882.019        | 58.6                 | 2.3                      | 60.9                                       | 74.0                 | -13.1       | Peak                |
| H            | 4882.135        | 25.8                 | 2.3                      | 28.1                                       | 54.0                 | -25.9       | Average             |
| H            | 4959.808        | 61.0                 | 2.8                      | 63.8                                       | 74.0                 | -10.2       | Peak                |
| H            | 4960.213        | 30.0                 | 2.8                      | 32.8                                       | 54.0                 | -21.2       | Average             |
| V            | 7205.842        | 46.3                 | 9.6                      | 55.9                                       | 74.0                 | -18.1       | Peak                |
| V            | 7206.152        | 22.0                 | 9.6                      | 31.6                                       | 54.0                 | -22.4       | Average             |
| H            | 7323.017        | 52.9                 | 9.6                      | 62.5                                       | 74.0                 | -11.5       | Peak                |
| H            | 7323.228        | 26.3                 | 9.6                      | 35.9                                       | 54.0                 | -18.1       | Average             |
| H            | 7440.100        | 53.1                 | 9.6                      | 62.7                                       | 74.0                 | -11.3       | Peak                |
| H            | 7440.102        | 22.9                 | 9.6                      | 32.5                                       | 54.0                 | -21.5       | Average             |

Remark: 1) Field Strength = Reading + transducer factor.

2) Other emission with more than 20dB margin are not reported in this report.

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廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.10 Radiated Spurious emission (other mode)

#### 6.10.1 Measurement

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 0.4m and 0.8m high above the ground for below 1GHz measurement and 1.5m high above the ground for above 1GHz measurement. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1 m above the ground.

For 30MHz to 300MHz, biconical antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. And the reference point of antenna shall be 1 m above the ground. Same procedure for frequency 300MHz to 1000MHz but Log-periodic antenna is used for final measurements.

For above 1GHz, horn antenna with its vertical and horizontal plane is placed 3m from the EUT and rotated about its vertical and horizontal axis for maximum response at each azimuth about the EUT. Preamplifier and High Pass filter was used for measurements. The reference point of antenna shall be 1 m above the ground.

The device was rotated through three X, Y, Z orthogonal to determine which attitude and configuration produce the highest emission during measurement for Radiated Emission measurement.

The Frequencies from fundamental up to the tenth harmonics were investigated, and emissions more 20dB below limit were not reported.

Receiving mode are selected for spurious radiated emission test from cabinet.

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.10.2 Final Result

Test mode: Receiving mode

| Polarization | Frequency (MHz) | Reading at 3m (dBμV) | Transducer Factor (dB/m) | Field Strength at 3m <sup>1</sup> (dBμV/m) | Limit at 3m (dBμV/m) | Margin (dB) | Detector (PK/QP/AV) |
|--------------|-----------------|----------------------|--------------------------|--------------------------------------------|----------------------|-------------|---------------------|
| H            | 56.192          | 14.2                 | 10.4                     | 24.6                                       | 40.0                 | -15.4       | QP                  |
| V            | 90.909          | 16.8                 | 10.2                     | 27.0                                       | 43.5                 | -16.5       | QP                  |
| H            | 111.510         | 19.3                 | 11.2                     | 30.5                                       | 43.5                 | -13.0       | QP                  |
| V            | 149.624         | 16.0                 | 13.5                     | 29.5                                       | 43.5                 | -14.0       | QP                  |
| V            | 182.763         | 13.3                 | 15.3                     | 28.6                                       | 43.5                 | -14.9       | QP                  |
| H            | 216.091         | 14.6                 | 14.5                     | 29.1                                       | 46.0                 | -16.9       | QP                  |
| H            | 248.047         | 18.5                 | 14.5                     | 33.0                                       | 46.0                 | -13.0       | QP                  |

Remark: 1) Field Strength = Reading + transducer factor.

2) Other emission with more than 20dB margin are not reported in this report.

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 6.11 Conducted Emission

#### 6.11.1 Measurement

Requirement : FCC Part 15 §15.207(a)  
Measuring procedure : ANSI C63.4:2014, section 7.3  
Test mode : Bluetooth+charging  
RBW : 9kHz  
VBW : 30kHz  
Modulation tested : GFSK  
Packet Type tested : DH5  
Additional measuring procedure : Nil  
Remark : Nil

#### 6.11.2 Final Result

| Worst case conducted emission frequency | Worst case conducted emission | Limit     | Margin   | Detector | Lines | Worst case mode    | Result |
|-----------------------------------------|-------------------------------|-----------|----------|----------|-------|--------------------|--------|
| 17.4965MHz                              | 39.53dBμV                     | 50.00dBμV | -10.47dB | AV       | N     | Bluetooth+charging | PASS   |

Remark: 1) Detail test result and equipment setting refer to appendix A, A46-47

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廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 7.0 Frequency Hopping System Requirement

#### Test Requirement: Section 15.247(a)(1), (g), (h)

The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom order 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.

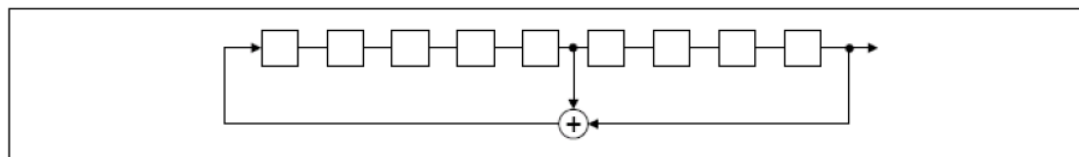
Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmissions bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

#### Compliance for section 15.247(a)(1)

According to Bluetooth Core Specification, the pseudorandom sequence may be generated in a nine-stage shift register whose 5<sup>th</sup> and 9<sup>th</sup> 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 stage: 9
- Length of pseudorandom sequence:  $2^9-1=511$  bits
- Longest sequence of zero: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

FCC ID: 2ADFF-KSBTAP2

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Document name: FCC/ISED for FHSS - Document Ref No: RT-EL-EMC-048 - Issue Date: 13 Mar 2019 - Edition: 2

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# TEST REPORT

Date : Jul 28, 2019

|    |    |    |    |  |  |   |    |  |   |    |  |  |  |  |    |    |   |
|----|----|----|----|--|--|---|----|--|---|----|--|--|--|--|----|----|---|
| 20 | 62 | 46 | 77 |  |  | 7 | 64 |  | 8 | 73 |  |  |  |  | 16 | 75 | 1 |
|    |    |    |    |  |  |   |    |  |   |    |  |  |  |  |    |    |   |

According to Bluetooth Core Specification, Bluetooth receivers are designed to have input and IF bandwidths that match the hopping channel bandwidths of any Bluetooth transmitters and shift frequencies in synchronization with the transmitted signals.

According to Bluetooth Core Specification, the Bluetooth system transmits the packet with the pseudorandom hopping frequency with a continuous data and the short burst transmission from the Bluetooth system is also transmitted under the frequency hopping system with the pseudorandom hopping frequency system.

According to Bluetooth Core specification, the Bluetooth system incorporates with an adaptive system to detect other user within the spectrum band so that it individually and independently to avoid hopping on the occupied channels.

According to the Bluetooth Core specification, the Bluetooth system is designed not have the ability to coordinate with other FHSS System in effort to avoid the simultaneous occupancy of the individual hopping frequencies by multiple transmitter.

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# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### 8.0 External photo, Internal Photo and Test configuration Photo

The External Photo, Internal Photo and Test Configuration Photo associated with this report for the tested product are saved in separated pdf file listed in the following

| File content             | File name                         |
|--------------------------|-----------------------------------|
| External Photo           | 2AFF-KSBTAP2 External photo.pdf   |
| Internal Photo           | 2AFF-KSBTAP2 Internal photo.pdf   |
| Test Configuration Photo | 2AFF-KSBTAP2 Test setpu photo.pdf |

FCC ID: 2ADFF-KSBTAP2

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Document name: FCC/ISED for FHSS - Document Ref No: RT-EL-EMC-048 - Issue Date: 13 Mar 2019 - Edition: 2

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# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

## APPENDIX A Test Result

FCC ID: 2ADFF-KSBTAP2

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# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### FCC Part 47 §15.247 2400-2483.5 MHz 2016

#### DUT Information

##### Frequencies

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

#### Hardware Setup: WMS Measurements\TS8997

Spectrum Analyzer: SA FSV 40 (SA FSV 40) @ VISA (ADR  
TCPIP::192.168.48.148::inst0::instr), SN 1321.3008K39/101190,  
FW 2.30 SP4

Vector Generator: VG SMBV100A (VG SMBV100A) @ VISA (ADR  
TCPIP::192.168.48.149::inst0::instr), SN 262024, FW 3.1.19.8-  
3.20.281.28.7

Generator: SMB100A (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.152::inst0::instr), SN 103230, FW 3.20.390.24  
/ Drv:Rev 2.21.0, 07/2016, CVI 2015

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

OSP:

OSP-B157W (OSP-B157W) @ VISA (ADR  
TCP/IP::192.168.48.157::inst0::instr), SN 1527.1144.03 / 101057,  
FW 1.23.0.2

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

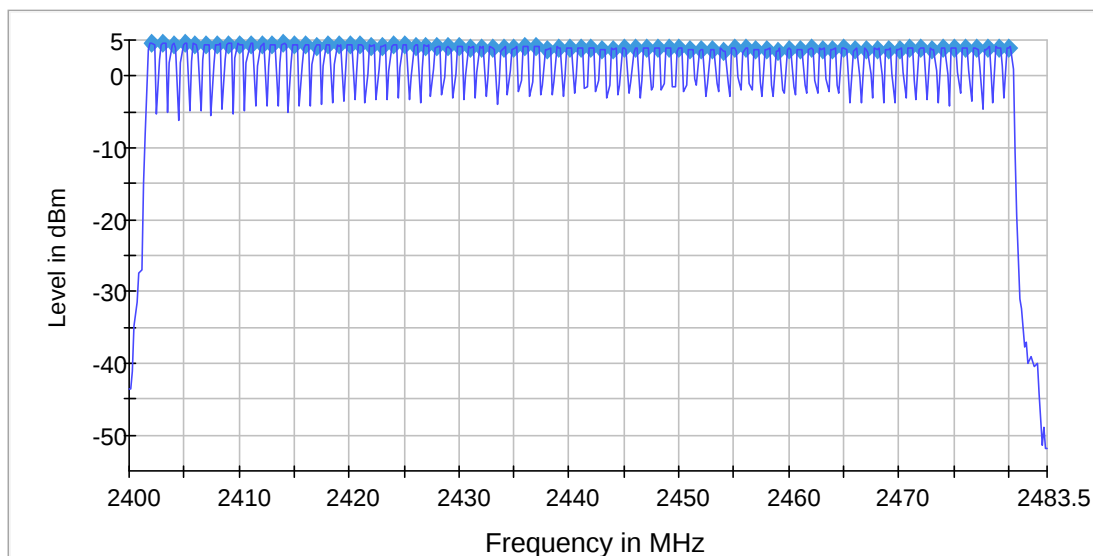
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Hopping Frequencies (Hopping; GFSK, DH5)

#### Channels

| Channels | Limit Min | Limit Max | Result |
|----------|-----------|-----------|--------|
| 79       | 15        | ---       | PASS   |



#### Measurement

| Setting               | Instrument Value | Target Value       |
|-----------------------|------------------|--------------------|
| Start Frequency       | 2.40000 GHz      | 2.40000 GHz        |
| Stop Frequency        | 2.48350 GHz      | 2.48350 GHz        |
| Span                  | 83.500 MHz       | 83.500 MHz         |
| RBW                   | 200.000 kHz      | $\leq 299.000$ kHz |
| VBW                   | 200.000 kHz      | $\geq 200.000$ kHz |
| SweepPoints           | 418              | ~ 418              |
| SweepTime             | 1.060 ms         | AUTO               |
| Reference Level       | 0.000 dBm        | 0.000 dBm          |
| Attenuation           | 20.000 dB        | AUTO               |
| Detector              | MaxPeak          | MaxPeak            |
| SweepCount            | 100              | 100                |
| Filter                | 3 dB             | 3 dB               |
| Trace Mode            | Max Hold         | Max Hold           |
| SweepType             | Sweep            | AUTO               |
| Preamplifier          | off              | off                |
| Stablemode            | Trace            | Trace              |
| Stablevalue           | 0.50 dB          | 0.50 dB            |
| Run                   | 71 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.17 dB          | 0.50 dB            |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Band Edge low (Hopping; GFSK; DH5)

#### Result

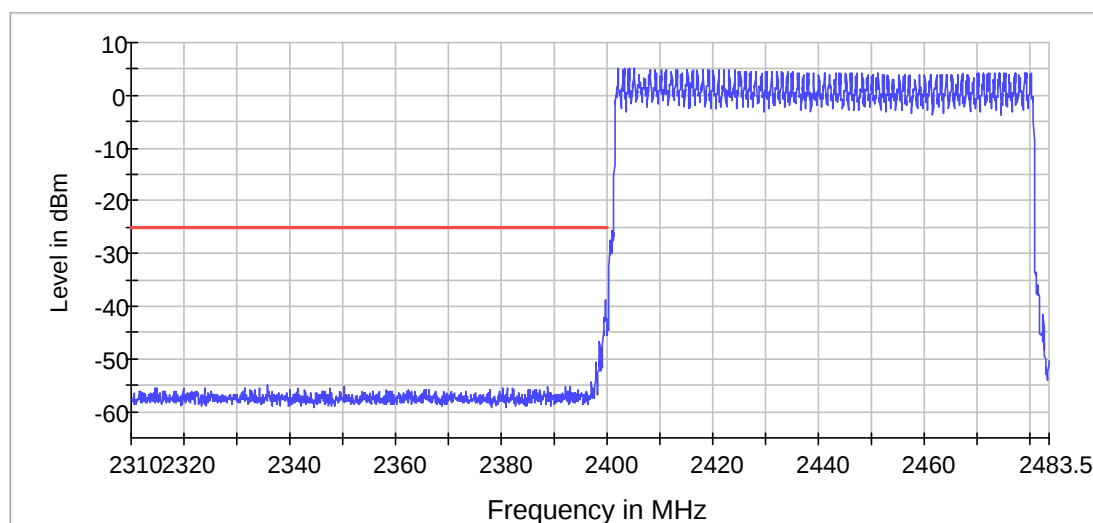
| DUT Frequency (MHz) | Result |
|---------------------|--------|
| hopping             | PASS   |

#### Inband Peak

| Frequency (MHz) | Level (dBm) |
|-----------------|-------------|
| 2404.025000     | 5.0         |

#### Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|-----------------|-------------|-------------|-------------|--------|
| 2399.625000     | -38.7       | 13.7        | -25.0       | PASS   |
| 2399.675000     | -38.9       | 14.0        | -25.0       | PASS   |
| 2399.575000     | -39.6       | 14.6        | -25.0       | PASS   |
| 2399.725000     | -41.2       | 16.2        | -25.0       | PASS   |
| 2399.375000     | -42.2       | 17.2        | -25.0       | PASS   |
| 2399.775000     | -42.2       | 17.3        | -25.0       | PASS   |
| 2399.825000     | -42.4       | 17.4        | -25.0       | PASS   |
| 2399.525000     | -42.6       | 17.6        | -25.0       | PASS   |
| 2399.475000     | -43.0       | 18.1        | -25.0       | PASS   |
| 2399.425000     | -43.1       | 18.2        | -25.0       | PASS   |
| 2399.325000     | -43.1       | 18.2        | -25.0       | PASS   |
| 2399.175000     | -44.6       | 19.6        | -25.0       | PASS   |
| 2399.225000     | -44.6       | 19.6        | -25.0       | PASS   |
| 2399.925000     | -44.8       | 19.9        | -25.0       | PASS   |
| 2399.975000     | -45.2       | 20.3        | -25.0       | PASS   |



— Limit — Sum Level × Fail

FCC ID: 2ADFF-KSBTAP2



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廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Measurement 1

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.31000 GHz      | 2.31000 GHz    |
| Stop Frequency        | 2.40000 GHz      | 2.40000 GHz    |
| Span                  | 90.000 MHz       | 90.000 MHz     |
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 1800             | ~ 1800         |
| SweepTime             | 1.800 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 100              | 100            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 15 / max. 150    | max. 150       |
| Stable                | 3 / 3            | 3              |
| Max Stable Difference | 0.00 dB          | 0.50 dB        |

### Measurement 2

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.40000 GHz      | 2.40000 GHz    |
| Stop Frequency        | 2.48350 GHz      | 2.48350 GHz    |
| Span                  | 83.500 MHz       | 83.500 MHz     |
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 1670             | ~ 1670         |
| SweepTime             | 1.670 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 100              | 100            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 141 / max. 150   | max. 150       |
| Stable                | 3 / 3            | 3              |
| Max Stable Difference | 0.00 dB          | 0.50 dB        |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Band Edge high (Hopping; GFSK; DH5)

#### Result

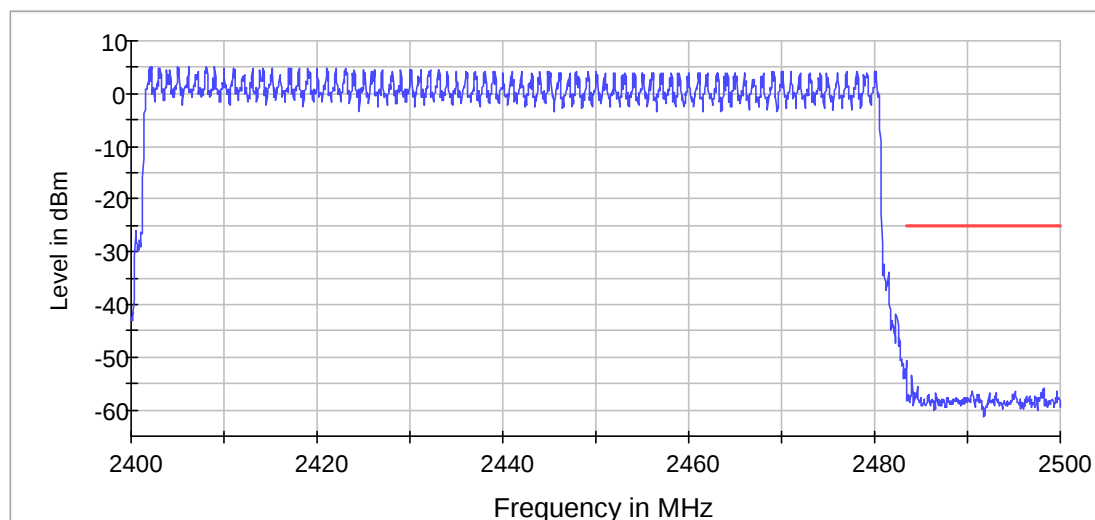
| DUT Frequency (MHz) | Result |
|---------------------|--------|
| hopping             | PASS   |

#### Inband Peak

| Frequency (MHz) | Level (dBm) |
|-----------------|-------------|
| 2405.025000     | 5.0         |

#### Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|-----------------|-------------|-------------|-------------|--------|
| 2484.025000     | -53.5       | 28.6        | -25.0       | PASS   |
| 2483.975000     | -53.6       | 28.6        | -25.0       | PASS   |
| 2484.575000     | -55.4       | 30.5        | -25.0       | PASS   |
| 2484.625000     | -55.5       | 30.5        | -25.0       | PASS   |
| 2498.225000     | -56.0       | 31.0        | -25.0       | PASS   |
| 2498.175000     | -56.3       | 31.3        | -25.0       | PASS   |
| 2484.675000     | -56.3       | 31.3        | -25.0       | PASS   |
| 2499.675000     | -56.4       | 31.4        | -25.0       | PASS   |
| 2490.525000     | -56.4       | 31.5        | -25.0       | PASS   |
| 2495.125000     | -56.5       | 31.6        | -25.0       | PASS   |
| 2495.175000     | -56.6       | 31.6        | -25.0       | PASS   |
| 2499.625000     | -56.6       | 31.6        | -25.0       | PASS   |
| 2498.275000     | -56.7       | 31.7        | -25.0       | PASS   |
| 2490.575000     | -56.7       | 31.7        | -25.0       | PASS   |
| 2486.625000     | -56.8       | 31.8        | -25.0       | PASS   |



— Limit — Sum Level × Fail

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Measurement 1

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.40000 GHz      | 2.40000 GHz    |
| Stop Frequency        | 2.48350 GHz      | 2.48350 GHz    |
| Span                  | 83.500 MHz       | 83.500 MHz     |
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 1670             | ~ 1670         |
| SweepTime             | 1.670 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 100              | 100            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 135 / max. 150   | max. 150       |
| Stable                | 3 / 3            | 3              |
| Max Stable Difference | 0.00 dB          | 0.50 dB        |

### Measurement 2

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.48350 GHz      | 2.48350 GHz    |
| Stop Frequency        | 2.50000 GHz      | 2.50000 GHz    |
| Span                  | 16.500 MHz       | 16.500 MHz     |
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 330              | ~ 330          |
| SweepTime             | 37.969 $\mu$ s   | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 100              | 100            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | FFT              | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 4 / max. 150     | max. 150       |
| Stable                | 3 / 3            | 3              |
| Max Stable Difference | 0.00 dB          | 0.50 dB        |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

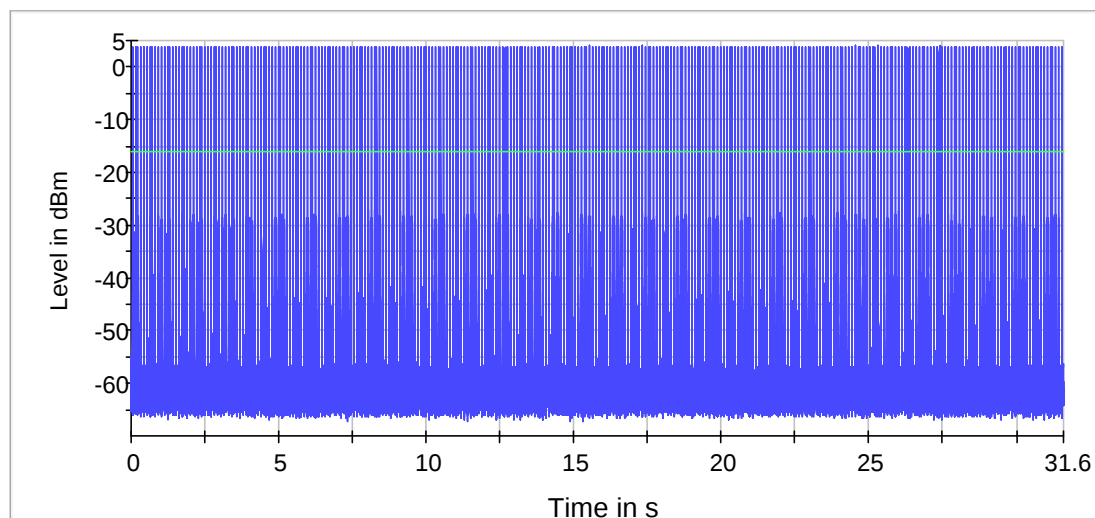
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Time of Channel Occupancy (2441 MHz; GFSK; DH1)

#### Result

| DUT Frequency (MHz) | Result | Number of Hops | Average time of occupancy (ms) | Threshold (dBm) |
|---------------------|--------|----------------|--------------------------------|-----------------|
| 2441.000000         | PASS   | 319            | 134.820                        | -16.0           |



Trace Threshold

#### Measurement

| Setting          | Instrument Value | Target Value  |
|------------------|------------------|---------------|
| Center Frequency | 2.44100 GHz      | 2.44100 GHz   |
| Span             | ZeroSpan         | ZeroSpan      |
| RBW              | 500.000 kHz      | ~ 650.000 kHz |
| VBW              | 1.000 MHz        | ~ 1.500 MHz   |
| SweepPoints      | 30001            | ~ 30001       |
| SweepTime        | 31.600 s         | 31.600 s      |
| Reference Level  | -10.000 dBm      | -10.000 dBm   |
| Attenuation      | 0.000 dB         | 0.000 dB      |
| Detector         | MaxPeak          | MaxPeak       |
| SweepCount       | 1                | 1             |
| Filter           | Channel          | Channel       |
| Trace Mode       | Clear Write      | Clear Write   |
| SweepType        | Sweep            | AUTO          |
| Preamplifier     | off              | off           |
| Trigger          | External         | External      |
| Trigger Offset   | 0.000 s          | 0.000 s       |

#### OSP

| Setting          | Instrument Value | Target Value  |
|------------------|------------------|---------------|
| Measurement Time | 31.600 s         | 31.600 s      |
| Tracepoints      | 31600000         | 31600000      |
| Time resolution  | 1.000 $\mu$ s    | 1.000 $\mu$ s |
| Detector         | RMS              | RMS           |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

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## TEST REPORT

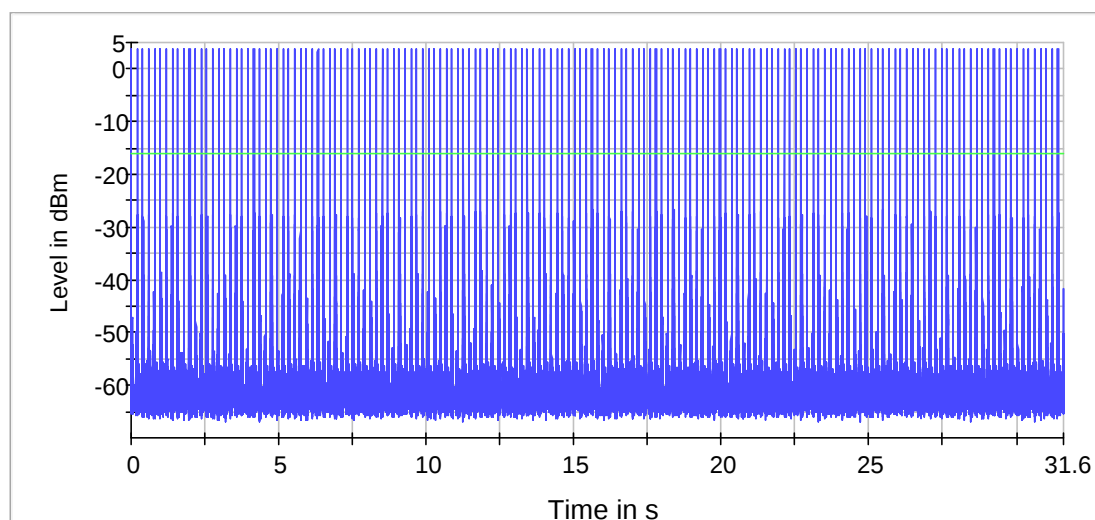
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Time of Channel Occupancy(2) (2441 MHz; GFSK;DH3)

#### Result

| DUT Frequency (MHz) | Result | Number of Hops | Average time of occupancy (ms) | Threshold (dBm) |
|---------------------|--------|----------------|--------------------------------|-----------------|
| 2441.000000         | PASS   | 159            | 268.340                        | -16.0           |



Trace Threshold

#### Measurement

| Setting          | Instrument Value | Target Value  |
|------------------|------------------|---------------|
| Center Frequency | 2.44100 GHz      | 2.44100 GHz   |
| Span             | ZeroSpan         | ZeroSpan      |
| RBW              | 500.000 kHz      | ~ 650.000 kHz |
| VBW              | 1.000 MHz        | ~ 1.500 MHz   |
| SweepPoints      | 30001            | ~ 30001       |
| SweepTime        | 31.600 s         | 31.600 s      |
| Reference Level  | -10.000 dBm      | -10.000 dBm   |
| Attenuation      | 0.000 dB         | 0.000 dB      |
| Detector         | MaxPeak          | MaxPeak       |
| SweepCount       | 1                | 1             |
| Filter           | Channel          | Channel       |
| Trace Mode       | Clear Write      | Clear Write   |
| SweepType        | Sweep            | AUTO          |
| Preamp           | off              | off           |
| Trigger          | External         | External      |
| Trigger Offset   | 0.000 s          | 0.000 s       |

#### OSP

| Setting          | Instrument Value | Target Value  |
|------------------|------------------|---------------|
| Measurement Time | 31.600 s         | 31.600 s      |
| Tracepoints      | 31600000         | 31600000      |
| Time resolution  | 1.000 $\mu$ s    | 1.000 $\mu$ s |
| Detector         | RMS              | RMS           |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

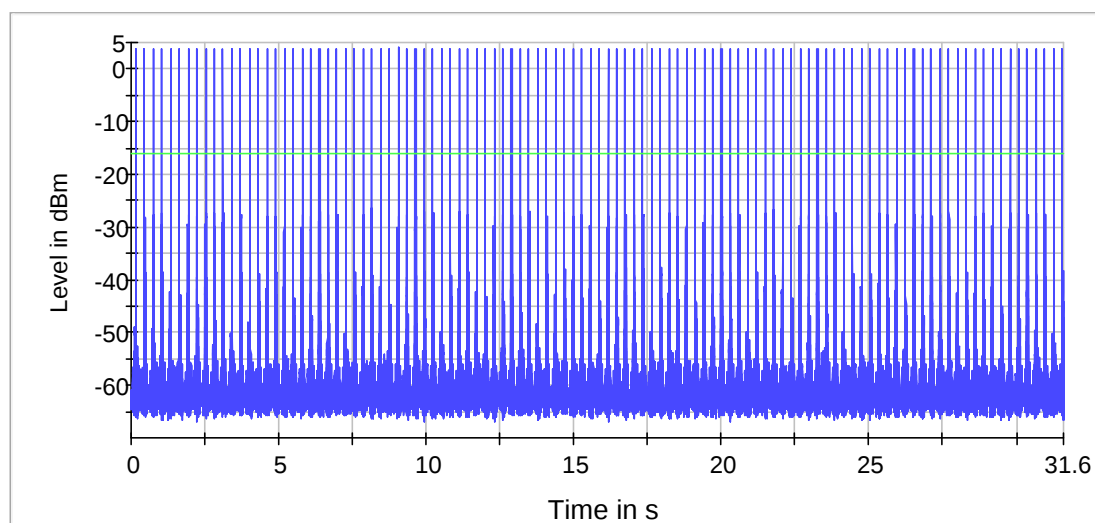
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Time of Channel Occupancy(3) (2441 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Result | Number of Hops | Average time of occupancy (ms) | Threshold (dBm) |
|---------------------|--------|----------------|--------------------------------|-----------------|
| 2441.000000         | PASS   | 106            | 313.000                        | -16.0           |



Trace Threshold

#### Measurement

| Setting          | Instrument Value | Target Value  |
|------------------|------------------|---------------|
| Center Frequency | 2.44100 GHz      | 2.44100 GHz   |
| Span             | ZeroSpan         | ZeroSpan      |
| RBW              | 500.000 kHz      | ~ 650.000 kHz |
| VBW              | 1.000 MHz        | ~ 1.500 MHz   |
| SweepPoints      | 30001            | ~ 30001       |
| SweepTime        | 31.600 s         | 31.600 s      |
| Reference Level  | -10.000 dBm      | -10.000 dBm   |
| Attenuation      | 0.000 dB         | 0.000 dB      |
| Detector         | MaxPeak          | MaxPeak       |
| SweepCount       | 1                | 1             |
| Filter           | Channel          | Channel       |
| Trace Mode       | Clear Write      | Clear Write   |
| SweepType        | Sweep            | AUTO          |
| Preamp           | off              | off           |
| Trigger          | External         | External      |
| Trigger Offset   | 0.000 s          | 0.000 s       |

#### OSP

| Setting          | Instrument Value | Target Value  |
|------------------|------------------|---------------|
| Measurement Time | 31.600 s         | 31.600 s      |
| Tracepoints      | 31600000         | 31600000      |
| Time resolution  | 1.000 $\mu$ s    | 1.000 $\mu$ s |
| Detector         | RMS              | RMS           |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

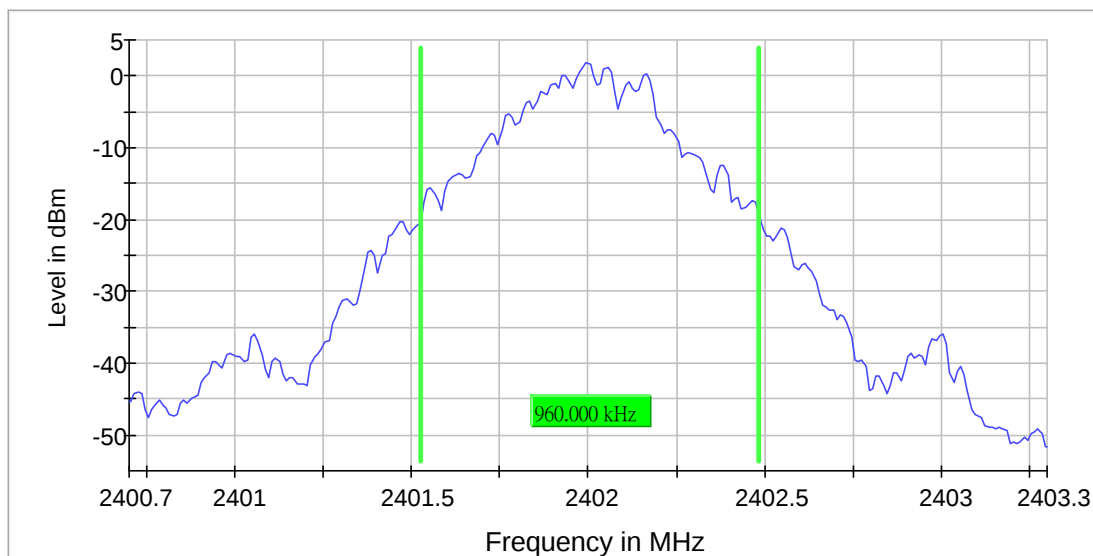
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB (2402 MHz; GFSK, DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2402.000000         | 0.960000        | ---             | ---             | 2401.525000          | 2402.485000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.40070 GHz      | 2.40070 GHz   |
| Stop Frequency        | 2.40330 GHz      | 2.40330 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 µs        | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 200              | 200           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamp                | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.50 dB          | 0.50 dB       |
| Run                   | 13 / max. 150    | max. 150      |
| Stable                | 5 / 5            | 5             |
| Max Stable Difference | 0.38 dB          | 0.50 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

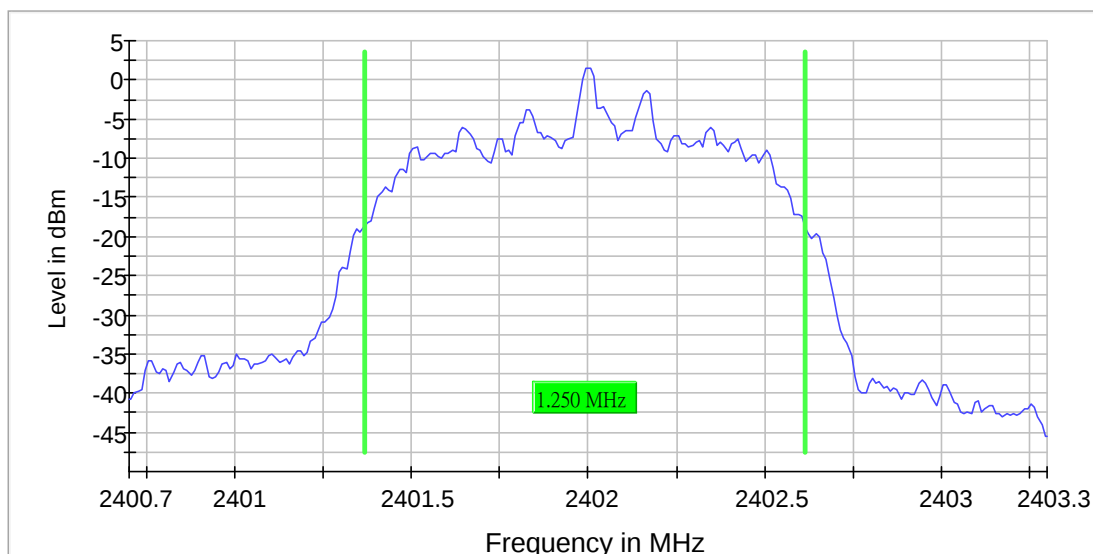
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB(2) (2402 MHz; $\pi/4$ DQPSK; 2DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2402.000000         | 1.250000        | ---             | ---             | 2401.365000          | 2402.615000           |



#### Measurement

| Setting               | Instrument Value | Target Value      |
|-----------------------|------------------|-------------------|
| Start Frequency       | 2.40070 GHz      | 2.40070 GHz       |
| Stop Frequency        | 2.40330 GHz      | 2.40330 GHz       |
| Span                  | 2.600 MHz        | 2.600 MHz         |
| RBW                   | 20.000 kHz       | $\geq 13.000$ kHz |
| VBW                   | 100.000 kHz      | $\geq 60.000$ kHz |
| SweepPoints           | 260              | ~ 260             |
| SweepTime             | 94.727 $\mu$ s   | AUTO              |
| Reference Level       | 0.000 dBm        | 0.000 dBm         |
| Attenuation           | 20.000 dB        | AUTO              |
| Detector              | MaxPeak          | MaxPeak           |
| SweepCount            | 200              | 200               |
| Filter                | 3 dB             | 3 dB              |
| Trace Mode            | Max Hold         | Max Hold          |
| SweepType             | FFT              | AUTO              |
| Preamplifier          | off              | off               |
| Stablemode            | Trace            | Trace             |
| Stablevalue           | 0.50 dB          | 0.50 dB           |
| Run                   | 22 / max. 150    | max. 150          |
| Stable                | 5 / 5            | 5                 |
| Max Stable Difference | 0.11 dB          | 0.50 dB           |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

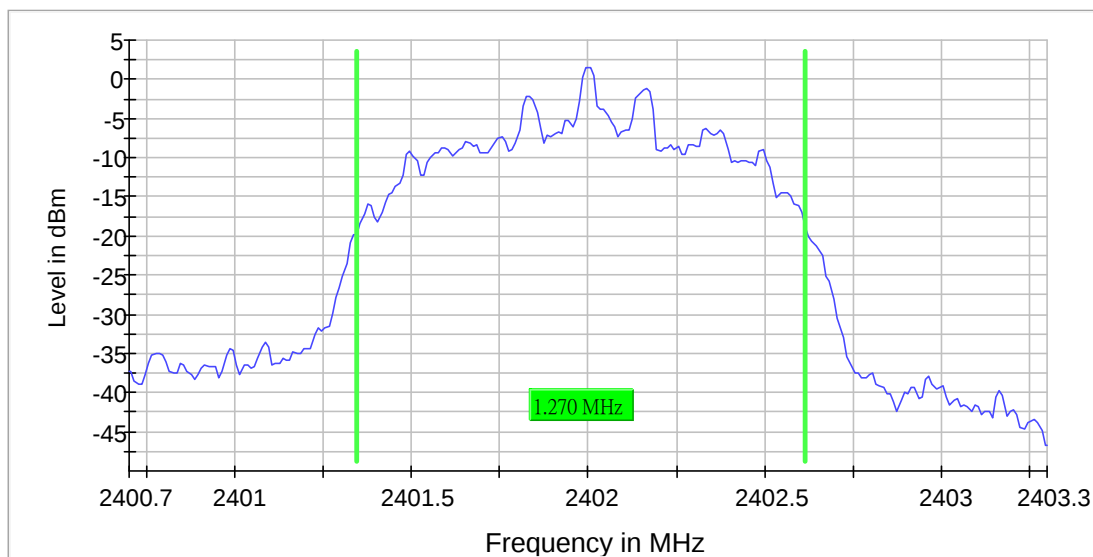
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB(3) (2402 MHz; 8DPSK; 3DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2402.000000         | 1.270000        | ---             | ---             | 2401.345000          | 2402.615000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.40070 GHz      | 2.40070 GHz   |
| Stop Frequency        | 2.40330 GHz      | 2.40330 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 200              | 200           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamp                | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.50 dB          | 0.50 dB       |
| Run                   | 10 / max. 150    | max. 150      |
| Stable                | 5 / 5            | 5             |
| Max Stable Difference | 0.39 dB          | 0.50 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

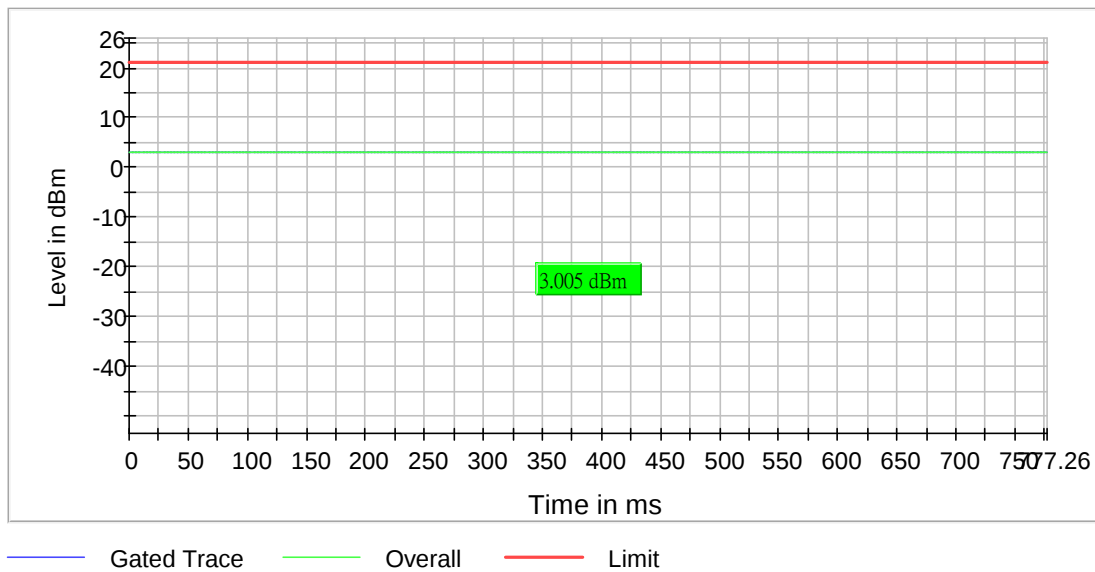
Report No. : AY0041769(5)

Date : Jul 28, 2019

### RF output power (2402 MHz; GFSK, DH5)

#### Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---------------------|-----------------|-----------------|------------------|---------------|--------|
| 2402.000000         | 3.0             | 21.0            | 3.0              | 77.894        | PASS   |





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## TEST REPORT

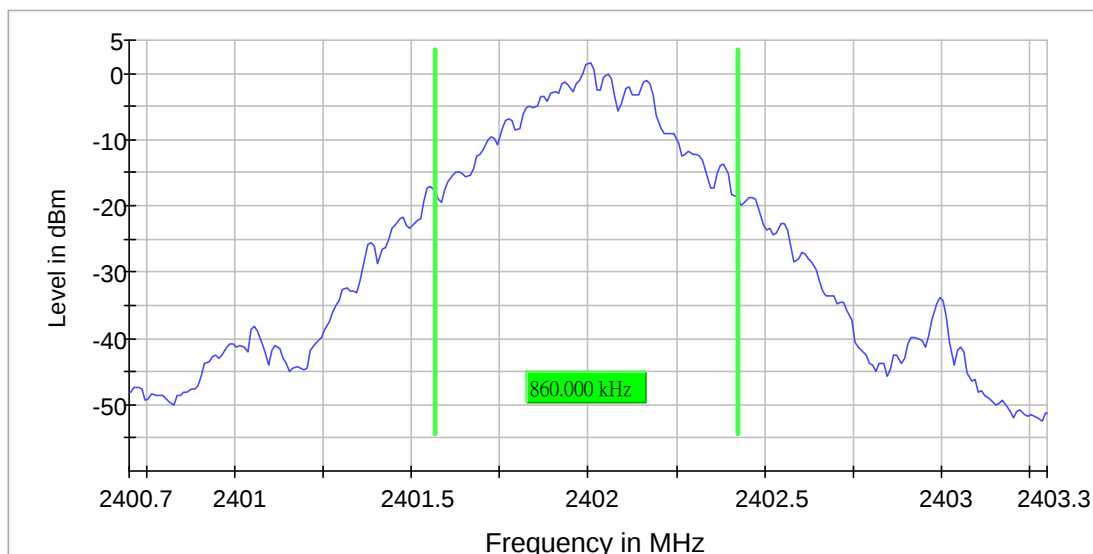
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Occupied Channel Bandwidth 99% (2402 MHz; GFSK; DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2402.000000         | 0.860000        | ---             | ---             | 2401.565000          | 2402.425000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.40070 GHz      | 2.40070 GHz   |
| Stop Frequency        | 2.40330 GHz      | 2.40330 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 500              | 500           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamp                | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.30 dB          | 0.30 dB       |
| Run                   | 14 / max. 150    | max. 150      |
| Stable                | 3 / 3            | 3             |
| Max Stable Difference | 0.19 dB          | 0.30 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

Report No. : AY0041769(5)

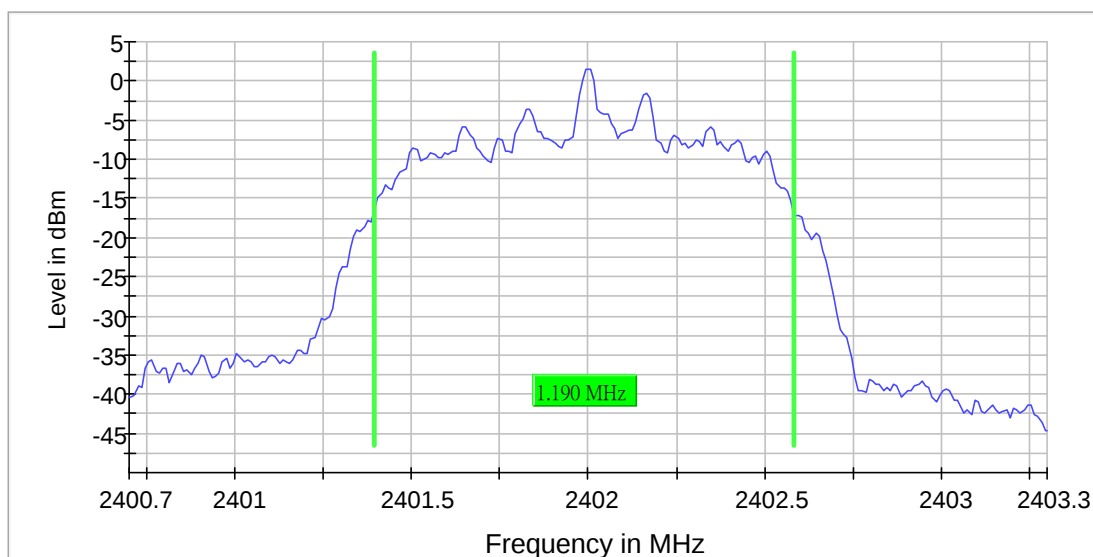
Date : Jul 28, 2019

### Occupied Channel Bandwidth 99%(2) (2402 MHz; $\pi/4$ DQPSK; 2DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2402.000000         | 1.190000        | ---             | ---             | 2401.395000          | 2402.585000           |

(



#### Measurement

| Setting               | Instrument Value | Target Value      |
|-----------------------|------------------|-------------------|
| Start Frequency       | 2.40070 GHz      | 2.40070 GHz       |
| Stop Frequency        | 2.40330 GHz      | 2.40330 GHz       |
| Span                  | 2.600 MHz        | 2.600 MHz         |
| RBW                   | 20.000 kHz       | $\geq 13.000$ kHz |
| VBW                   | 100.000 kHz      | $\geq 60.000$ kHz |
| SweepPoints           | 260              | $\sim 260$        |
| SweepTime             | 94.727 $\mu$ s   | AUTO              |
| Reference Level       | 0.000 dBm        | 0.000 dBm         |
| Attenuation           | 20.000 dB        | AUTO              |
| Detector              | MaxPeak          | MaxPeak           |
| SweepCount            | 500              | 500               |
| Filter                | 3 dB             | 3 dB              |
| Trace Mode            | Max Hold         | Max Hold          |
| SweepType             | FFT              | AUTO              |
| Preamp                | off              | off               |
| Stablemode            | Trace            | Trace             |
| Stablevalue           | 0.30 dB          | 0.30 dB           |
| Run                   | 17 / max. 150    | max. 150          |
| Stable                | 3 / 3            | 3                 |
| Max Stable Difference | 0.12 dB          | 0.30 dB           |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

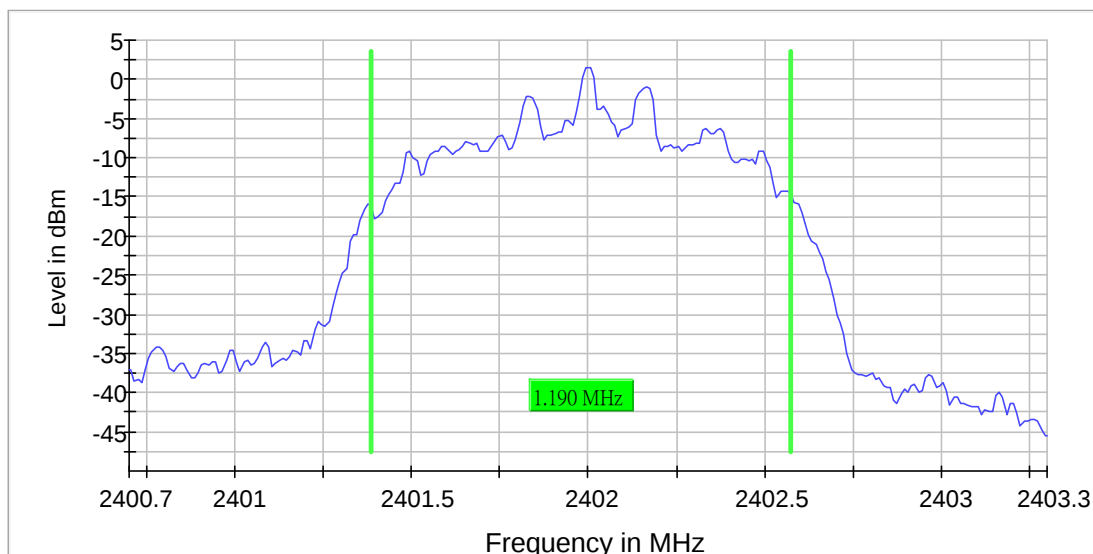
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Occupied Channel Bandwidth 99%(3) (2402 MHz; 8DPSK; 3DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2402.000000         | 1.190000        | ---             | ---             | 2401.385000          | 2402.575000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.40070 GHz      | 2.40070 GHz   |
| Stop Frequency        | 2.40330 GHz      | 2.40330 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 µs        | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 500              | 500           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamplifier          | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.30 dB          | 0.30 dB       |
| Run                   | 17 / max. 150    | max. 150      |
| Stable                | 3 / 3            | 3             |
| Max Stable Difference | 0.17 dB          | 0.30 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Band Edge low (2402 MHz; GFSK; DH5)

#### Result

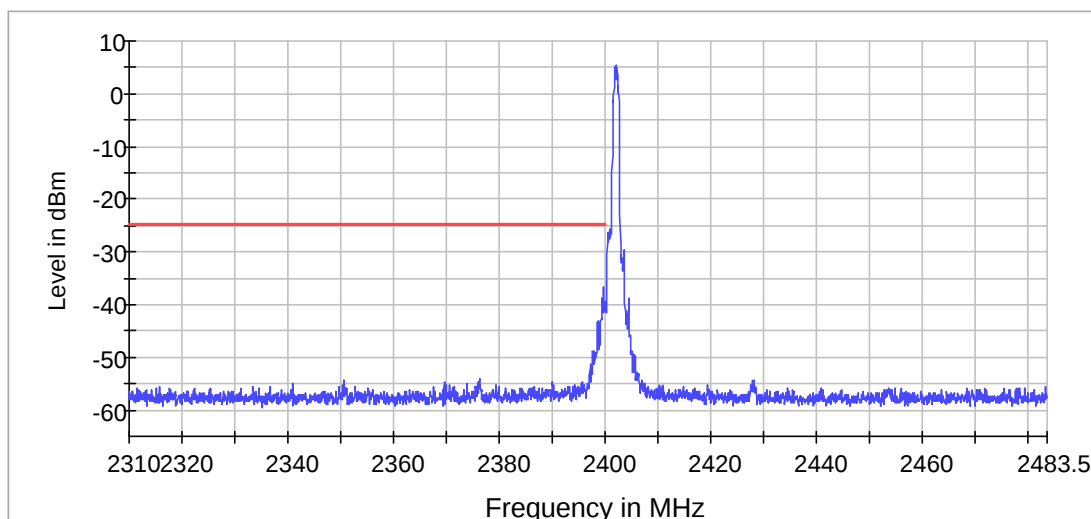
| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2402.000000         | PASS   |

#### Inband Peak

| Frequency (MHz) | Level (dBm) |
|-----------------|-------------|
| 2402.025000     | 5.3         |

#### Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|-----------------|-------------|-------------|-------------|--------|
| 2399.625000     | -36.5       | 11.8        | -24.7       | PASS   |
| 2399.675000     | -37.0       | 12.3        | -24.7       | PASS   |
| 2399.575000     | -37.9       | 13.2        | -24.7       | PASS   |
| 2399.725000     | -38.5       | 13.8        | -24.7       | PASS   |
| 2399.425000     | -38.7       | 13.9        | -24.7       | PASS   |
| 2399.375000     | -38.8       | 14.1        | -24.7       | PASS   |
| 2399.875000     | -39.2       | 14.5        | -24.7       | PASS   |
| 2399.925000     | -39.5       | 14.8        | -24.7       | PASS   |
| 2399.475000     | -39.5       | 14.8        | -24.7       | PASS   |
| 2399.825000     | -40.3       | 15.6        | -24.7       | PASS   |
| 2399.525000     | -40.4       | 15.7        | -24.7       | PASS   |
| 2399.325000     | -40.6       | 15.9        | -24.7       | PASS   |
| 2399.975000     | -41.3       | 16.6        | -24.7       | PASS   |
| 2399.775000     | -41.5       | 16.7        | -24.7       | PASS   |
| 2399.225000     | -42.5       | 17.8        | -24.7       | PASS   |



— Limit    — Sum Level    × Fail

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Measurement 1

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.31000 GHz      | 2.31000 GHz    |
| Stop Frequency        | 2.40000 GHz      | 2.40000 GHz    |
| Span                  | 90.000 MHz       | 90.000 MHz     |
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 1800             | ~ 1800         |
| SweepTime             | 1.800 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 100              | 100            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 12 / max. 150    | max. 150       |
| Stable                | 3 / 3            | 3              |
| Max Stable Difference | 0.04 dB          | 0.50 dB        |

### Measurement 2

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.40000 GHz      | 2.40000 GHz    |
| Stop Frequency        | 2.48350 GHz      | 2.48350 GHz    |
| Span                  | 83.500 MHz       | 83.500 MHz     |
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 1670             | ~ 1670         |
| SweepTime             | 1.670 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 100              | 100            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 12 / max. 150    | max. 150       |
| Stable                | 3 / 3            | 3              |
| Max Stable Difference | 0.29 dB          | 0.50 dB        |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

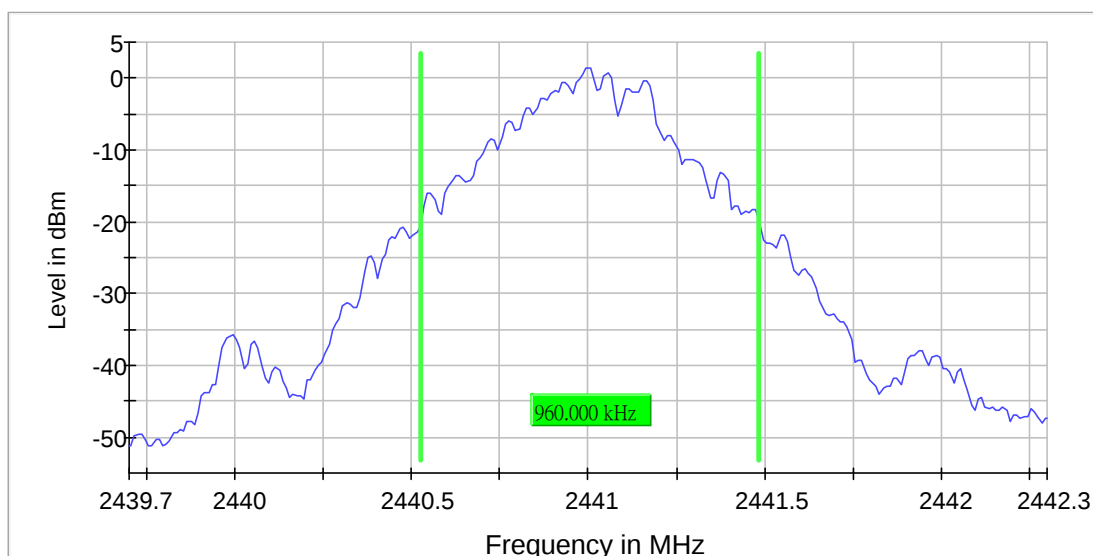
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB (2441 MHz; GFSK; DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2441.000000         | 0.960000        | ---             | ---             | 2440.525000          | 2441.485000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.43970 GHz      | 2.43970 GHz   |
| Stop Frequency        | 2.44230 GHz      | 2.44230 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 200              | 200           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamp                | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.50 dB          | 0.50 dB       |
| Run                   | 12 / max. 150    | max. 150      |
| Stable                | 5 / 5            | 5             |
| Max Stable Difference | 0.31 dB          | 0.50 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

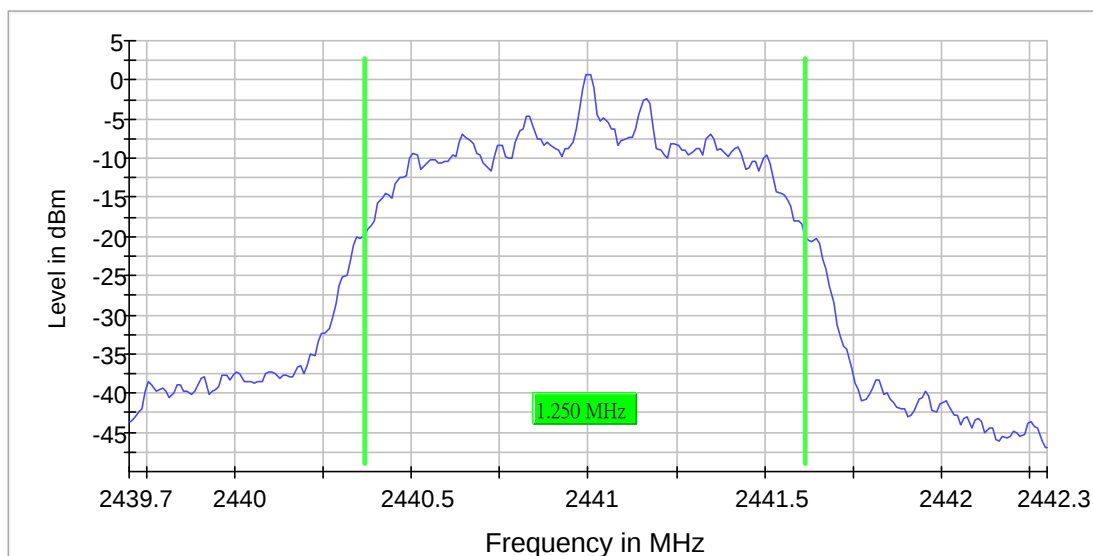
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB(2) (2441 MHz; $\pi/4$ DQPSK; 2DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2441.000000         | 1.250000        | ---             | ---             | 2440.365000          | 2441.615000           |



#### Measurement

| Setting               | Instrument Value | Target Value      |
|-----------------------|------------------|-------------------|
| Start Frequency       | 2.43970 GHz      | 2.43970 GHz       |
| Stop Frequency        | 2.44230 GHz      | 2.44230 GHz       |
| Span                  | 2.600 MHz        | 2.600 MHz         |
| RBW                   | 20.000 kHz       | $\geq 13.000$ kHz |
| VBW                   | 100.000 kHz      | $\geq 60.000$ kHz |
| SweepPoints           | 260              | ~ 260             |
| SweepTime             | 94.727 $\mu$ s   | AUTO              |
| Reference Level       | 0.000 dBm        | 0.000 dBm         |
| Attenuation           | 20.000 dB        | AUTO              |
| Detector              | MaxPeak          | MaxPeak           |
| SweepCount            | 200              | 200               |
| Filter                | 3 dB             | 3 dB              |
| Trace Mode            | Max Hold         | Max Hold          |
| SweepType             | FFT              | AUTO              |
| Preamplifier          | off              | off               |
| Stablemode            | Trace            | Trace             |
| Stablevalue           | 0.50 dB          | 0.50 dB           |
| Run                   | 11 / max. 150    | max. 150          |
| Stable                | 5 / 5            | 5                 |
| Max Stable Difference | 0.24 dB          | 0.50 dB           |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

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## TEST REPORT

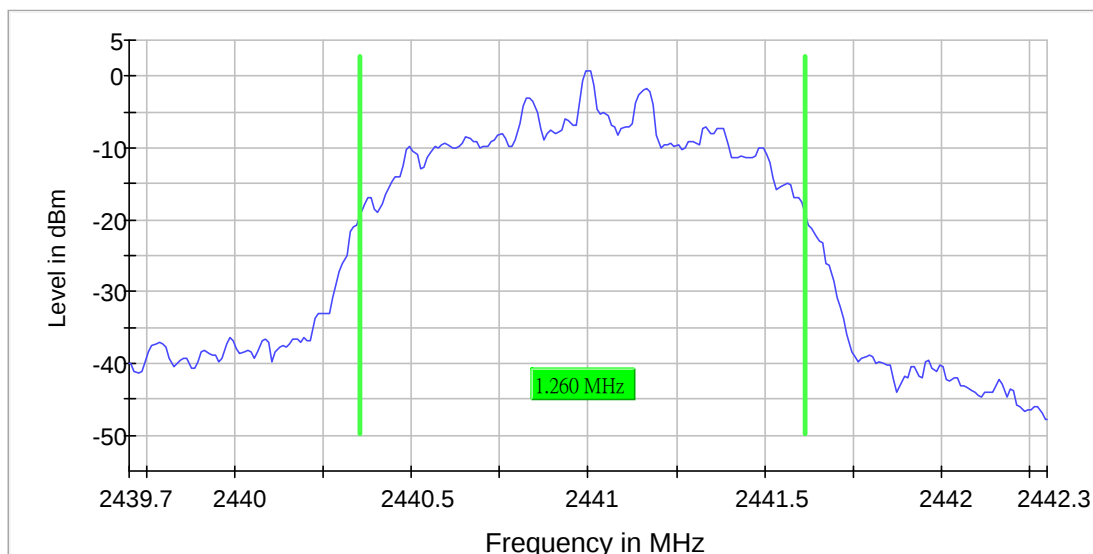
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB(3) (2441 MHz; 8DPSK; 3DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2441.000000         | 1.260000        | ---             | ---             | 2440.355000          | 2441.615000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.43970 GHz      | 2.43970 GHz   |
| Stop Frequency        | 2.44230 GHz      | 2.44230 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 200              | 200           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamplifier          | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.50 dB          | 0.50 dB       |
| Run                   | 16 / max. 150    | max. 150      |
| Stable                | 5 / 5            | 5             |
| Max Stable Difference | 0.34 dB          | 0.50 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

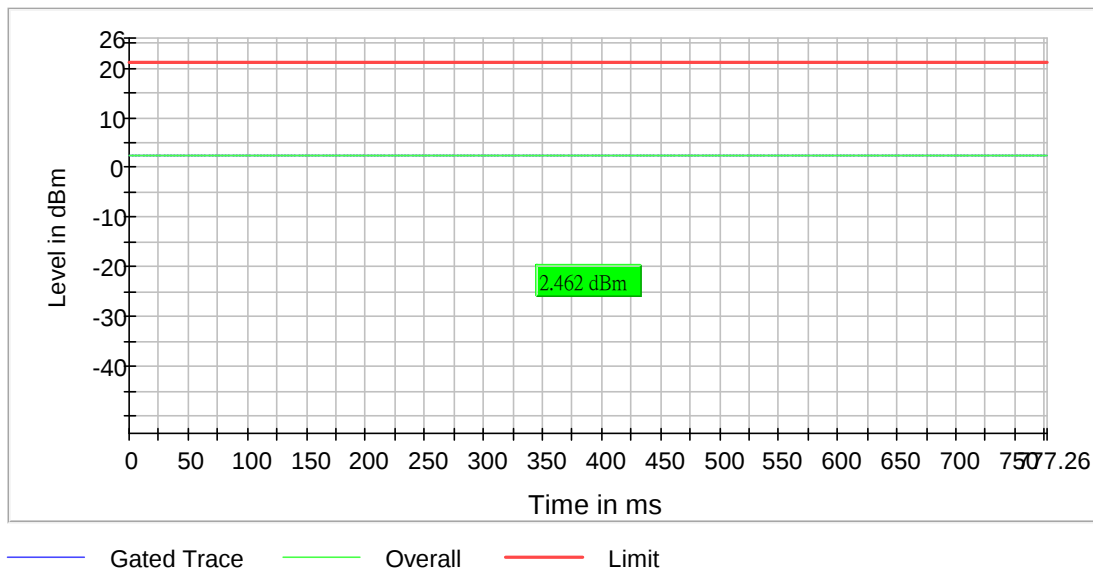
Report No. : AY0041769(5)

Date : Jul 28, 2019

### RF output power (2441 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---------------------|-----------------|-----------------|------------------|---------------|--------|
| 2441.000000         | 2.5             | 21.0            | 2.5              | 77.894        | PASS   |





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## TEST REPORT

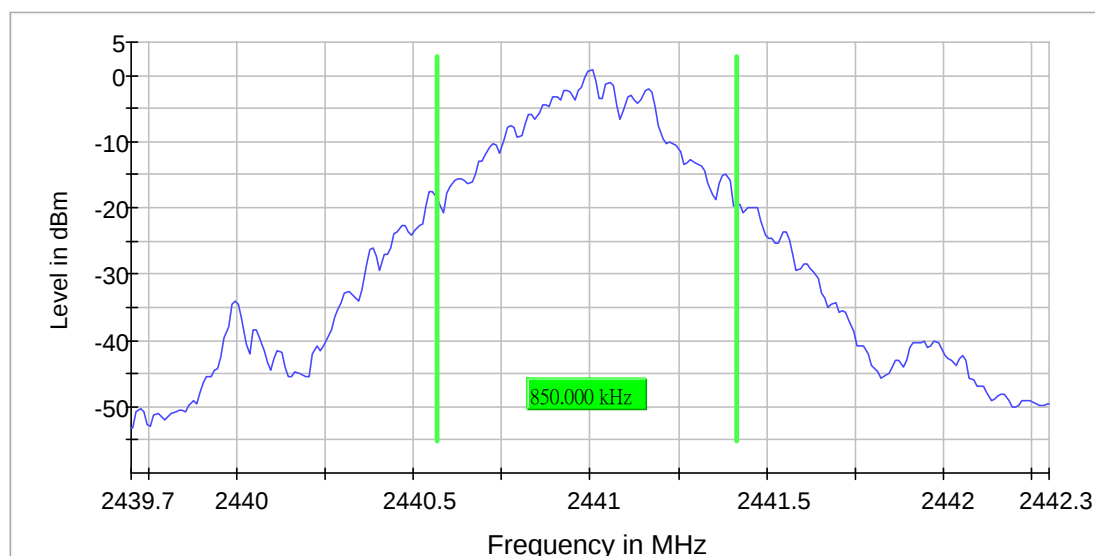
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Occupied Channel Bandwidth 99% (2441 MHz; GFSK; DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2441.000000         | 0.850000        | ---             | ---             | 2440.565000          | 2441.415000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.43970 GHz      | 2.43970 GHz   |
| Stop Frequency        | 2.44230 GHz      | 2.44230 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 500              | 500           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamplifier          | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.30 dB          | 0.30 dB       |
| Run                   | 12 / max. 150    | max. 150      |
| Stable                | 3 / 3            | 3             |
| Max Stable Difference | 0.13 dB          | 0.30 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

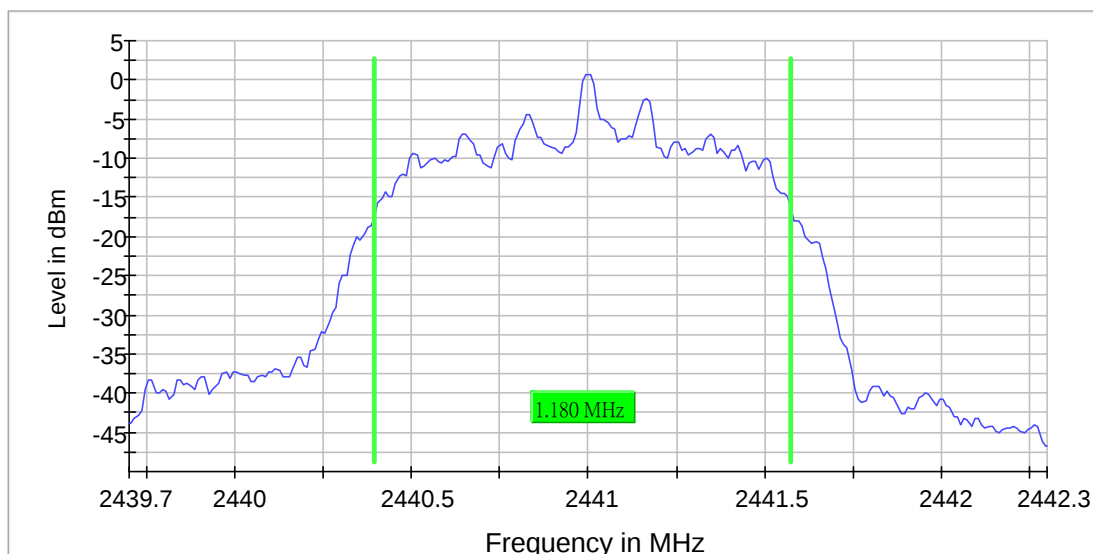
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Occupied Channel Bandwidth 99%(2) (2441 MHz; $\pi/4$ DQPSK; 2DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2441.000000         | 1.180000        | ---             | ---             | 2440.395000          | 2441.575000           |



#### Measurement

| Setting               | Instrument Value | Target Value      |
|-----------------------|------------------|-------------------|
| Start Frequency       | 2.43970 GHz      | 2.43970 GHz       |
| Stop Frequency        | 2.44230 GHz      | 2.44230 GHz       |
| Span                  | 2.600 MHz        | 2.600 MHz         |
| RBW                   | 20.000 kHz       | $\geq 13.000$ kHz |
| VBW                   | 100.000 kHz      | $\geq 60.000$ kHz |
| SweepPoints           | 260              | ~ 260             |
| SweepTime             | 94.727 $\mu$ s   | AUTO              |
| Reference Level       | 0.000 dBm        | 0.000 dBm         |
| Attenuation           | 20.000 dB        | AUTO              |
| Detector              | MaxPeak          | MaxPeak           |
| SweepCount            | 500              | 500               |
| Filter                | 3 dB             | 3 dB              |
| Trace Mode            | Max Hold         | Max Hold          |
| SweepType             | FFT              | AUTO              |
| Preamplifier          | off              | off               |
| Stablemode            | Trace            | Trace             |
| Stablevalue           | 0.30 dB          | 0.30 dB           |
| Run                   | 8 / max. 150     | max. 150          |
| Stable                | 3 / 3            | 3                 |
| Max Stable Difference | 0.23 dB          | 0.30 dB           |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

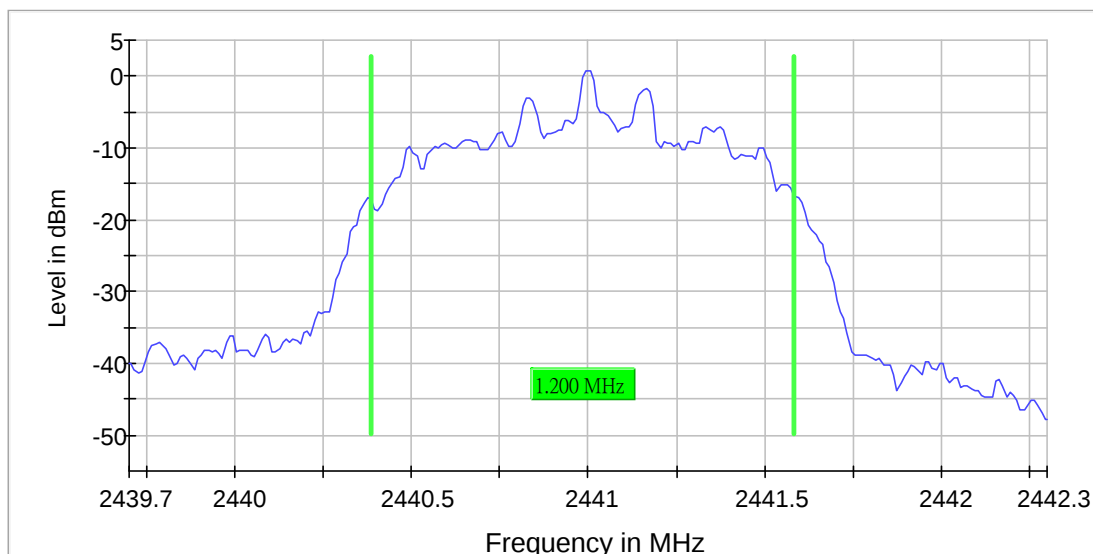
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Occupied Channel Bandwidth 99%(3) (2441 MHz; 8DPSK; 3DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2441.000000         | 1.200000        | ---             | ---             | 2440.385000          | 2441.585000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.43970 GHz      | 2.43970 GHz   |
| Stop Frequency        | 2.44230 GHz      | 2.44230 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 500              | 500           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamplifier          | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.30 dB          | 0.30 dB       |
| Run                   | 11 / max. 150    | max. 150      |
| Stable                | 3 / 3            | 3             |
| Max Stable Difference | 0.04 dB          | 0.30 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

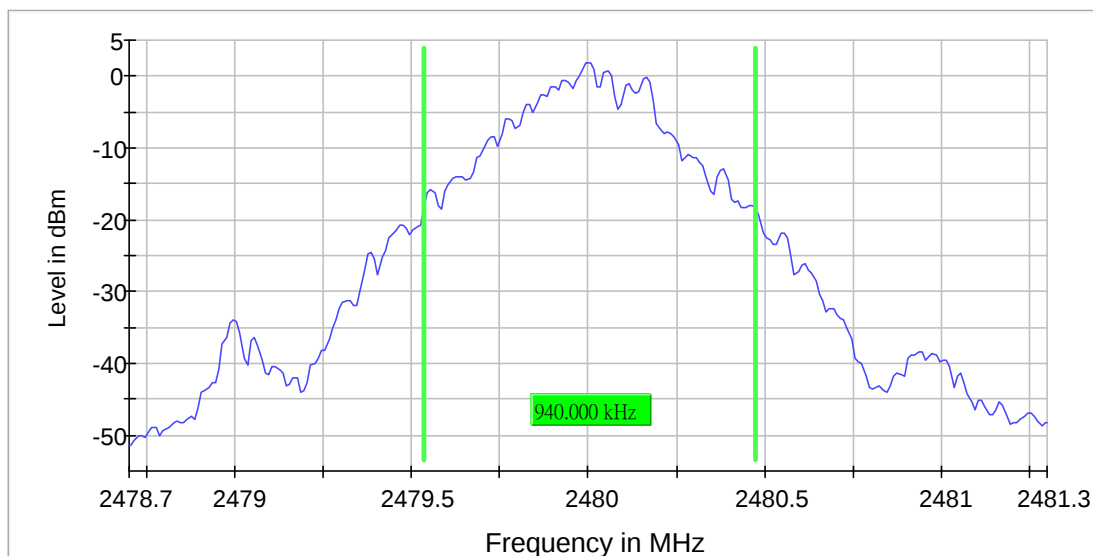
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB (2480 MHz; GFSK; DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2480.000000         | 0.940000        | ---             | ---             | 2479.535000          | 2480.475000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.47870 GHz      | 2.47870 GHz   |
| Stop Frequency        | 2.48130 GHz      | 2.48130 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 200              | 200           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamp                | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.50 dB          | 0.50 dB       |
| Run                   | 20 / max. 150    | max. 150      |
| Stable                | 5 / 5            | 5             |
| Max Stable Difference | 0.00 dB          | 0.50 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

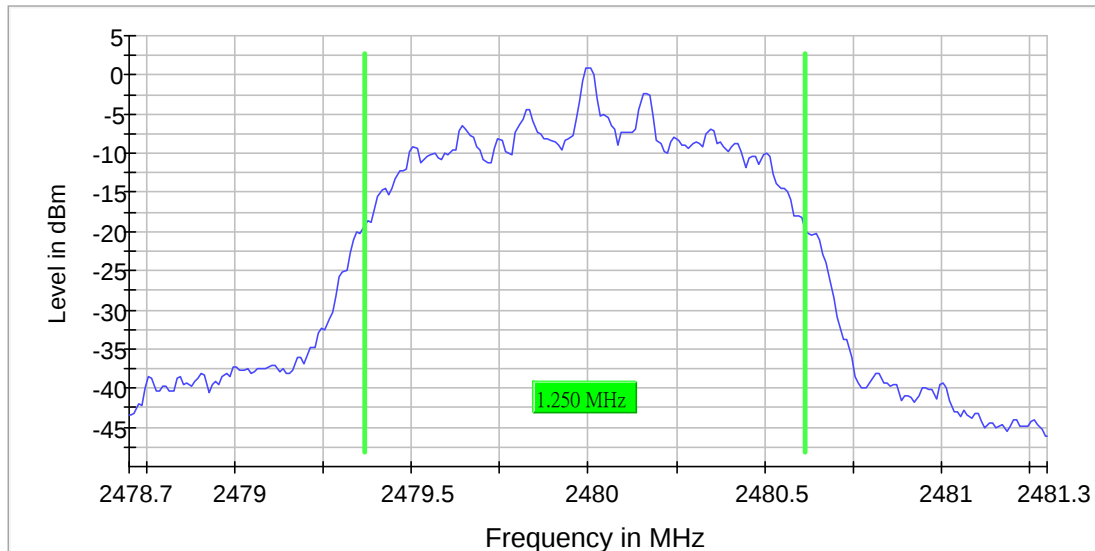
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB(2) (2480 MHz; $\pi/4$ DQPSK; 2DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2480.000000         | 1.250000        | ---             | ---             | 2479.365000          | 2480.615000           |



#### Measurement

| Setting               | Instrument Value | Target Value      |
|-----------------------|------------------|-------------------|
| Start Frequency       | 2.47870 GHz      | 2.47870 GHz       |
| Stop Frequency        | 2.48130 GHz      | 2.48130 GHz       |
| Span                  | 2.600 MHz        | 2.600 MHz         |
| RBW                   | 20.000 kHz       | $\geq 13.000$ kHz |
| VBW                   | 100.000 kHz      | $\geq 60.000$ kHz |
| SweepPoints           | 260              | ~ 260             |
| SweepTime             | 94.727 $\mu$ s   | AUTO              |
| Reference Level       | 0.000 dBm        | 0.000 dBm         |
| Attenuation           | 20.000 dB        | AUTO              |
| Detector              | MaxPeak          | MaxPeak           |
| SweepCount            | 200              | 200               |
| Filter                | 3 dB             | 3 dB              |
| Trace Mode            | Max Hold         | Max Hold          |
| SweepType             | FFT              | AUTO              |
| Preamplifier          | off              | off               |
| Stablemode            | Trace            | Trace             |
| Stablevalue           | 0.50 dB          | 0.50 dB           |
| Run                   | 21 / max. 150    | max. 150          |
| Stable                | 5 / 5            | 5                 |
| Max Stable Difference | 0.09 dB          | 0.50 dB           |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

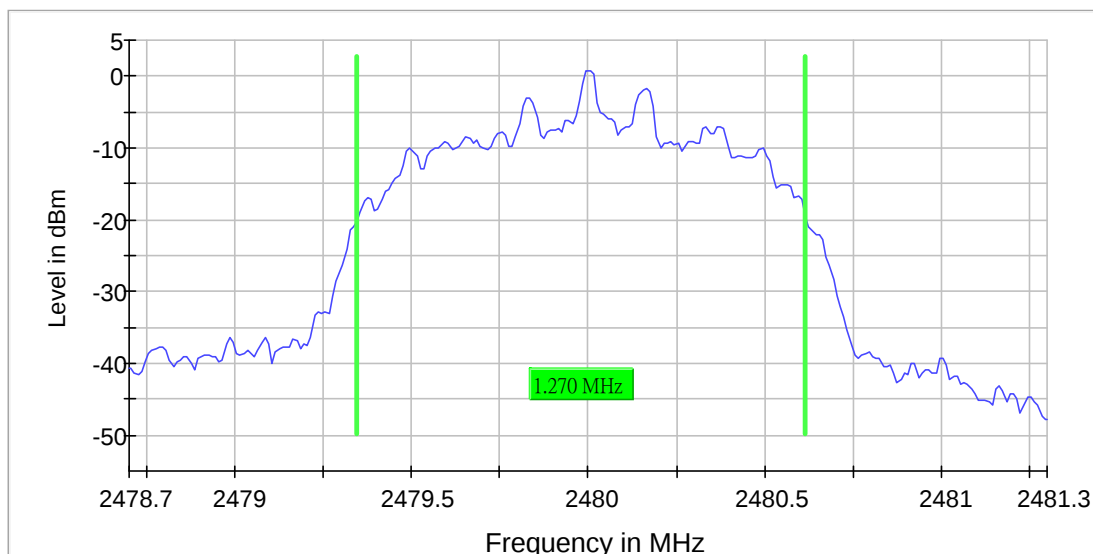
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Emission Bandwidth 20 dB(3) (2480 MHz; 8DPSK; 3DH5)

#### 20 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2480.000000         | 1.270000        | ---             | ---             | 2479.345000          | 2480.615000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.47870 GHz      | 2.47870 GHz   |
| Stop Frequency        | 2.48130 GHz      | 2.48130 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 200              | 200           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamplifier          | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.50 dB          | 0.50 dB       |
| Run                   | 13 / max. 150    | max. 150      |
| Stable                | 5 / 5            | 5             |
| Max Stable Difference | 0.20 dB          | 0.50 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

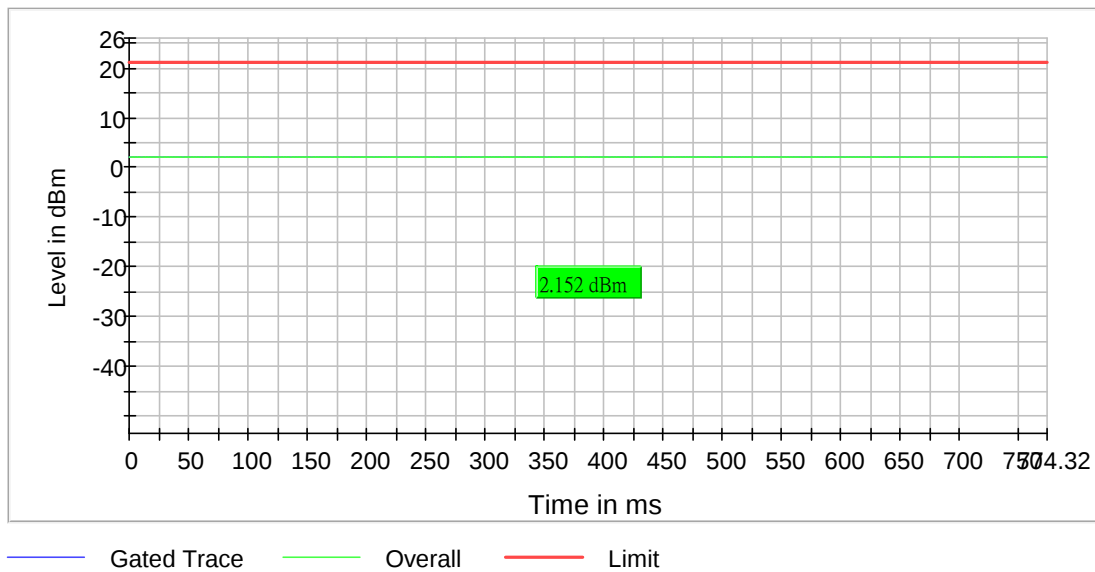
Report No. : AY0041769(5)

Date : Jul 28, 2019

### RF output power (2480 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---------------------|-----------------|-----------------|------------------|---------------|--------|
| 2480.000000         | 2.2             | 21.0            | 2.2              | 77.893        | PASS   |





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## TEST REPORT

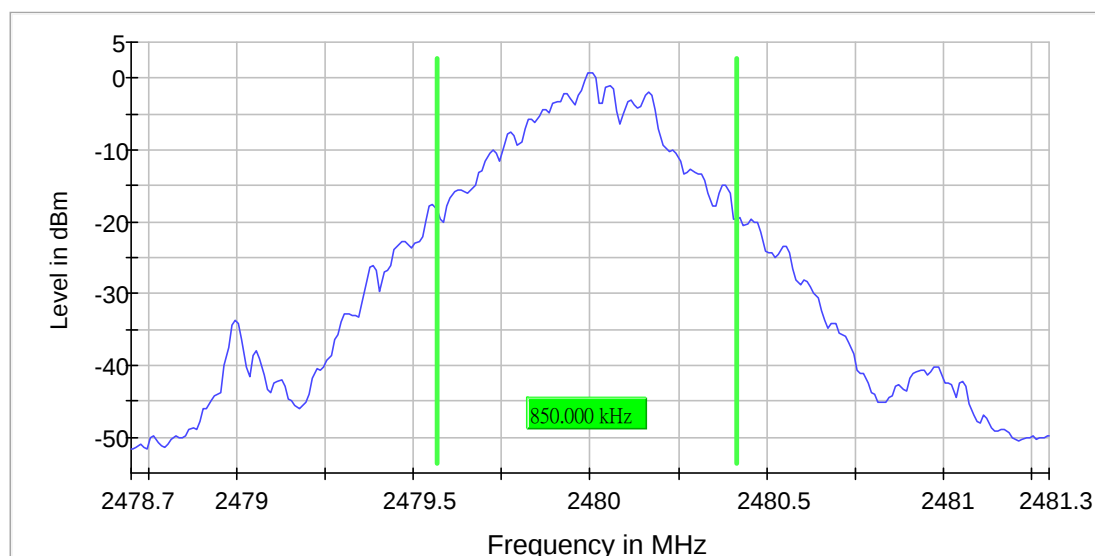
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Occupied Channel Bandwidth 99% (2480 MHz; GFSK; DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2480.000000         | 0.850000        | ---             | ---             | 2479.565000          | 2480.415000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.47870 GHz      | 2.47870 GHz   |
| Stop Frequency        | 2.48130 GHz      | 2.48130 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 500              | 500           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamp                | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.30 dB          | 0.30 dB       |
| Run                   | 21 / max. 150    | max. 150      |
| Stable                | 3 / 3            | 3             |
| Max Stable Difference | 0.03 dB          | 0.30 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

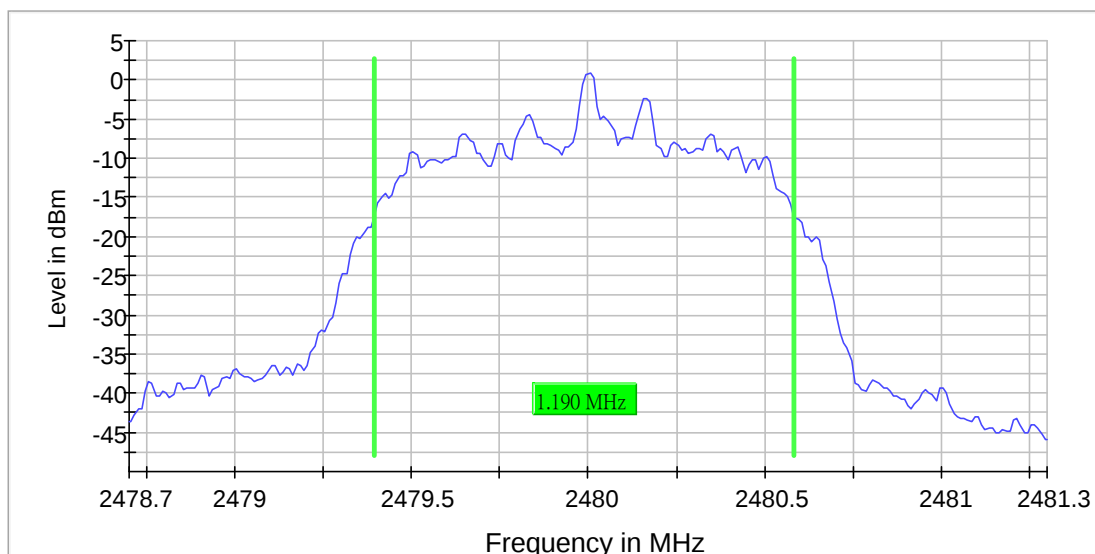
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Occupied Channel Bandwidth 99%(2) (2480 MHz; $\pi/4$ DQPSK; 2DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2480.000000         | 1.190000        | ---             | ---             | 2479.395000          | 2480.585000           |



#### Measurement

| Setting               | Instrument Value | Target Value      |
|-----------------------|------------------|-------------------|
| Start Frequency       | 2.47870 GHz      | 2.47870 GHz       |
| Stop Frequency        | 2.48130 GHz      | 2.48130 GHz       |
| Span                  | 2.600 MHz        | 2.600 MHz         |
| RBW                   | 20.000 kHz       | $\geq 13.000$ kHz |
| VBW                   | 100.000 kHz      | $\geq 60.000$ kHz |
| SweepPoints           | 260              | ~ 260             |
| SweepTime             | 94.727 $\mu$ s   | AUTO              |
| Reference Level       | 0.000 dBm        | 0.000 dBm         |
| Attenuation           | 20.000 dB        | AUTO              |
| Detector              | MaxPeak          | MaxPeak           |
| SweepCount            | 500              | 500               |
| Filter                | 3 dB             | 3 dB              |
| Trace Mode            | Max Hold         | Max Hold          |
| SweepType             | FFT              | AUTO              |
| Preamplifier          | off              | off               |
| Stablemode            | Trace            | Trace             |
| Stablevalue           | 0.30 dB          | 0.30 dB           |
| Run                   | 15 / max. 150    | max. 150          |
| Stable                | 3 / 3            | 3                 |
| Max Stable Difference | 0.17 dB          | 0.30 dB           |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

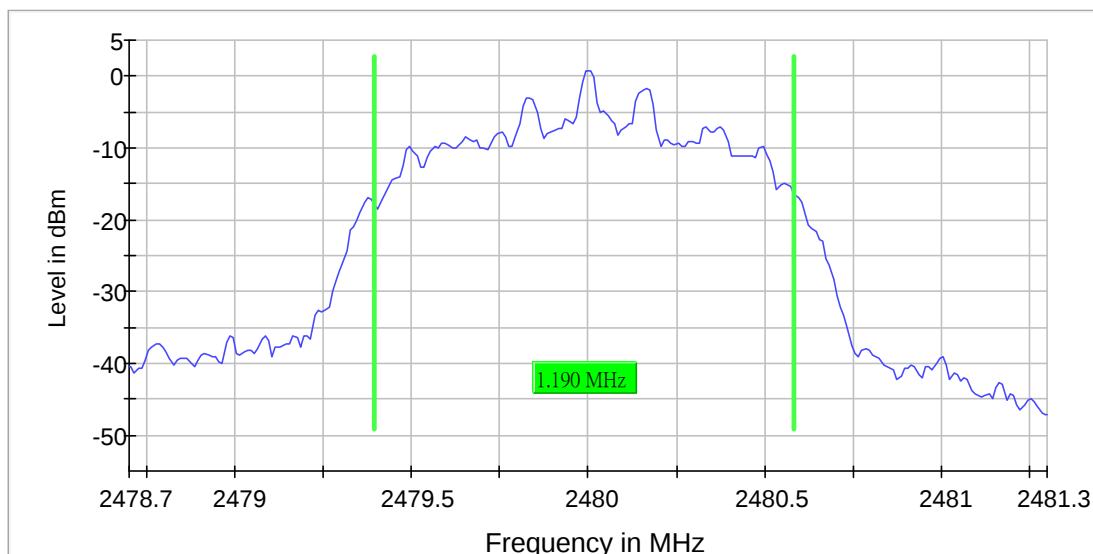
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Occupied Channel Bandwidth 99%(3) (2480 MHz; 8DPSK; 3DH5)

#### 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---------------------|-----------------|-----------------|-----------------|----------------------|-----------------------|
| 2480.000000         | 1.190000        | ---             | ---             | 2479.395000          | 2480.585000           |



#### Measurement

| Setting               | Instrument Value | Target Value  |
|-----------------------|------------------|---------------|
| Start Frequency       | 2.47870 GHz      | 2.47870 GHz   |
| Stop Frequency        | 2.48130 GHz      | 2.48130 GHz   |
| Span                  | 2.600 MHz        | 2.600 MHz     |
| RBW                   | 20.000 kHz       | >= 13.000 kHz |
| VBW                   | 100.000 kHz      | >= 60.000 kHz |
| SweepPoints           | 260              | ~ 260         |
| SweepTime             | 94.727 $\mu$ s   | AUTO          |
| Reference Level       | 0.000 dBm        | 0.000 dBm     |
| Attenuation           | 20.000 dB        | AUTO          |
| Detector              | MaxPeak          | MaxPeak       |
| SweepCount            | 500              | 500           |
| Filter                | 3 dB             | 3 dB          |
| Trace Mode            | Max Hold         | Max Hold      |
| SweepType             | FFT              | AUTO          |
| Preamp                | off              | off           |
| Stablemode            | Trace            | Trace         |
| Stablevalue           | 0.30 dB          | 0.30 dB       |
| Run                   | 17 / max. 150    | max. 150      |
| Stable                | 3 / 3            | 3             |
| Max Stable Difference | 0.04 dB          | 0.30 dB       |

FCC ID: 2ADFF-KSBTAP2



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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Band Edge high (2480 MHz; GFSK; DH5)

#### Result

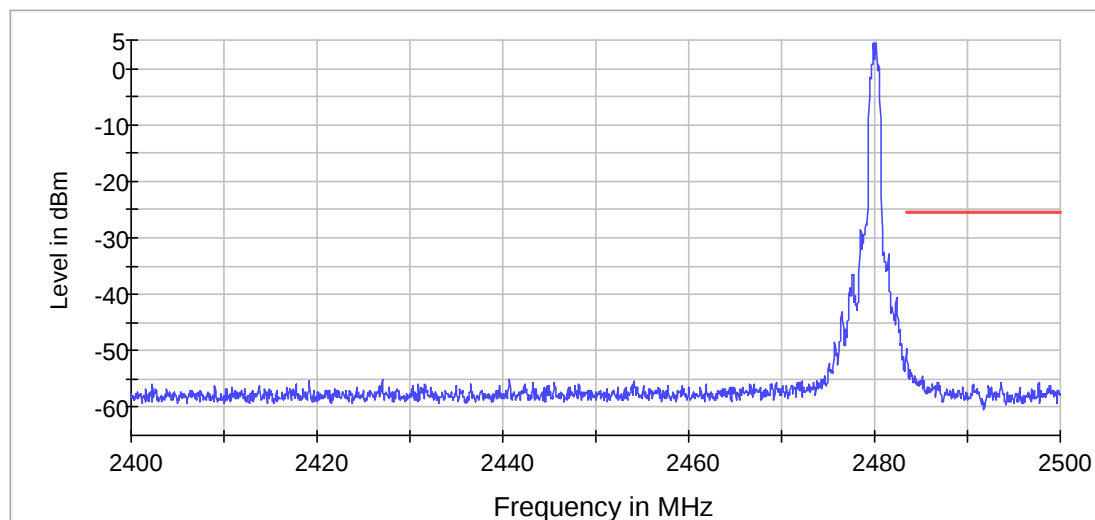
| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2480.000000         | PASS   |

#### Inband Peak

| Frequency (MHz) | Level (dBm) |
|-----------------|-------------|
| 2480.025000     | 4.4         |

#### Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|-----------------|-------------|-------------|-------------|--------|
| 2483.525000     | -51.7       | 26.1        | -25.6       | PASS   |
| 2483.575000     | -52.6       | 27.0        | -25.6       | PASS   |
| 2483.625000     | -52.8       | 27.3        | -25.6       | PASS   |
| 2483.825000     | -53.4       | 27.9        | -25.6       | PASS   |
| 2483.875000     | -53.5       | 27.9        | -25.6       | PASS   |
| 2483.925000     | -54.0       | 28.4        | -25.6       | PASS   |
| 2484.025000     | -54.3       | 28.8        | -25.6       | PASS   |
| 2483.975000     | -54.4       | 28.8        | -25.6       | PASS   |
| 2484.325000     | -54.5       | 28.9        | -25.6       | PASS   |
| 2483.775000     | -54.5       | 28.9        | -25.6       | PASS   |
| 2485.125000     | -54.5       | 28.9        | -25.6       | PASS   |
| 2483.675000     | -54.6       | 29.1        | -25.6       | PASS   |
| 2485.175000     | -54.6       | 29.1        | -25.6       | PASS   |
| 2484.225000     | -54.7       | 29.1        | -25.6       | PASS   |
| 2484.275000     | -54.7       | 29.2        | -25.6       | PASS   |



— Limit — Sum Level × Fail

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

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## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Measurement 1

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.40000 GHz      | 2.40000 GHz    |
| Stop Frequency        | 2.48350 GHz      | 2.48350 GHz    |
| Span                  | 83.500 MHz       | 83.500 MHz     |
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 1670             | ~ 1670         |
| SweepTime             | 1.670 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 100              | 100            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 9 / max. 150     | max. 150       |
| Stable                | 3 / 3            | 3              |
| Max Stable Difference | 0.03 dB          | 0.50 dB        |

### Measurement 2

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.48350 GHz      | 2.48350 GHz    |
| Stop Frequency        | 2.50000 GHz      | 2.50000 GHz    |
| Span                  | 16.500 MHz       | 16.500 MHz     |
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 330              | ~ 330          |
| SweepTime             | 37.969 $\mu$ s   | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 100              | 100            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | FFT              | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 4 / max. 150     | max. 150       |
| Stable                | 3 / 3            | 3              |
| Max Stable Difference | 0.00 dB          | 0.50 dB        |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

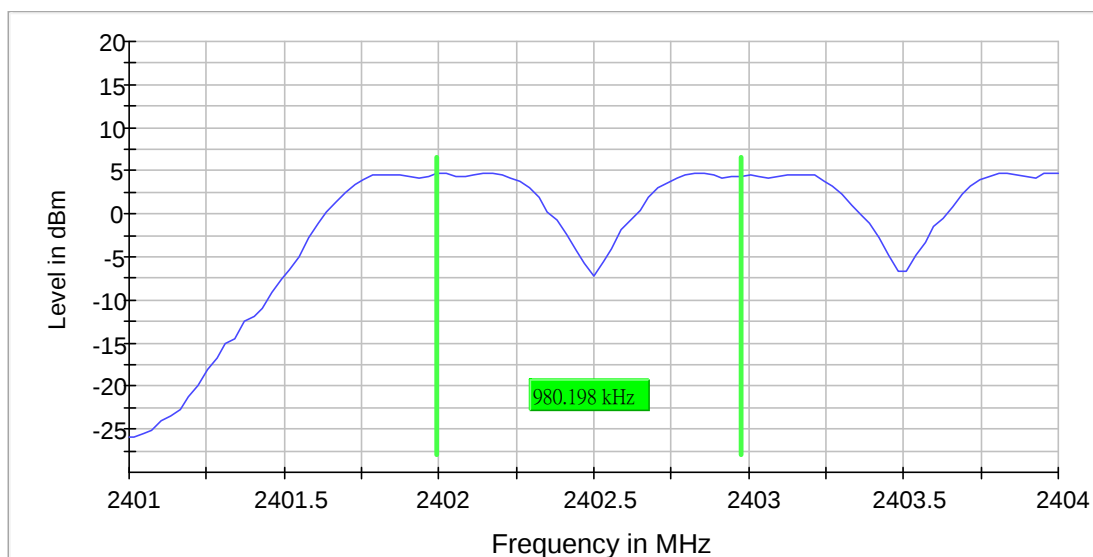
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Carrier Frequency Separation (2402 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Frequency Separation (MHz) | Limit Min (MHz) | Limit Max (MHz) | Center Frequency low Channel (MHz) | Center Frequency high Channel (MHz) |
|---------------------|----------------------------|-----------------|-----------------|------------------------------------|-------------------------------------|
| 2402.000000         | 0.980198                   | 0.846667        | ---             | 2401.995050                        | 2402.975248                         |



#### Measurement

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.40100 GHz      | 2.40100 GHz    |
| Stop Frequency        | 2.40400 GHz      | 2.40400 GHz    |
| Span                  | 3.000 MHz        | 3.000 MHz      |
| RBW                   | 300.000 kHz      | <= 300.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 101              | ~ 10           |
| SweepTime             | 1.000 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 200              | 200            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | Sweep          |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 17 / max. 150    | max. 150       |
| Stable                | 10 / 10          | 10             |
| Max Stable Difference | 0.47 dB          | 0.50 dB        |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

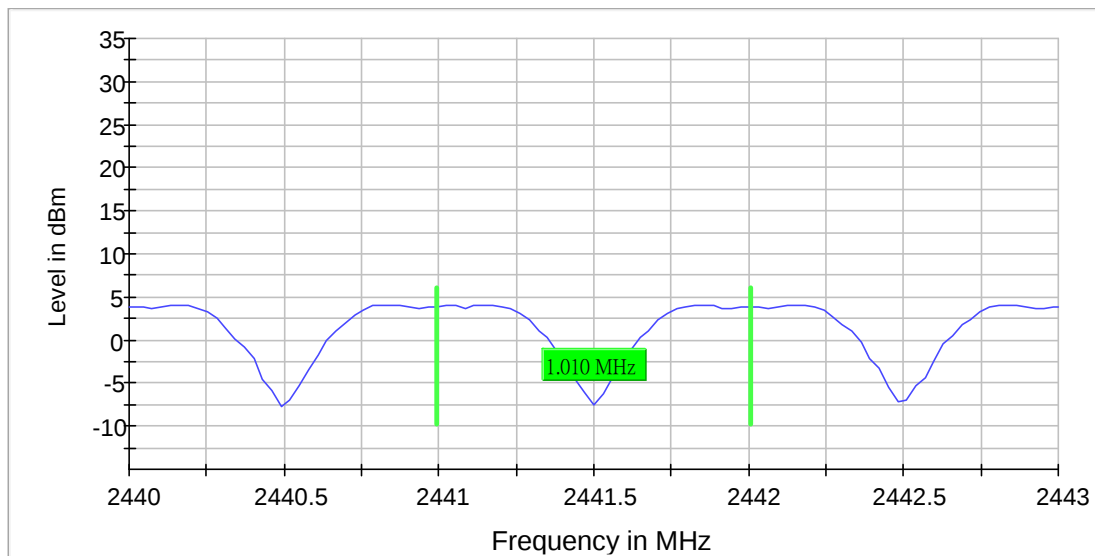
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Carrier Frequency Separation (2441 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Frequency Separation (MHz) | Limit Min (MHz) | Limit Max (MHz) | Center Frequency low Channel (MHz) | Center Frequency high Channel (MHz) |
|---------------------|----------------------------|-----------------|-----------------|------------------------------------|-------------------------------------|
| 2441.000000         | 1.009900                   | 0.840000        | ---             | 2440.995050                        | 2442.004950                         |



#### Measurement

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.44000 GHz      | 2.44000 GHz    |
| Stop Frequency        | 2.44300 GHz      | 2.44300 GHz    |
| Span                  | 3.000 MHz        | 3.000 MHz      |
| RBW                   | 300.000 kHz      | <= 300.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 101              | ~ 10           |
| SweepTime             | 1.000 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 200              | 200            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | Sweep          |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 11 / max. 150    | max. 150       |
| Stable                | 10 / 10          | 10             |
| Max Stable Difference | 0.00 dB          | 0.50 dB        |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

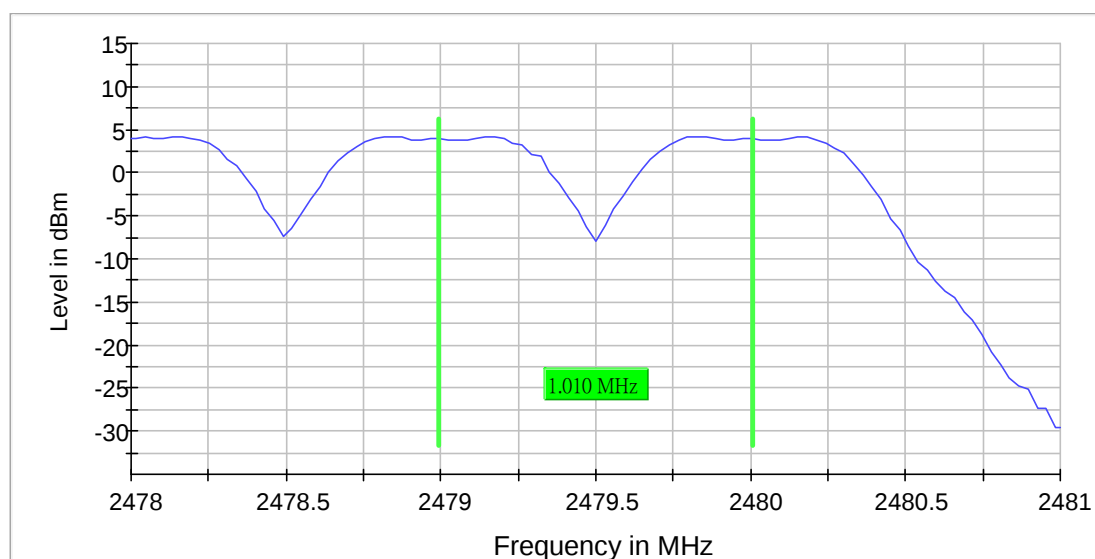
Report No. : AY0041769(5)

Date : Jul 28, 2019

### Carrier Frequency Separation (2479 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Frequency Separation (MHz) | Limit Min (MHz) | Limit Max (MHz) | Center Frequency low Channel (MHz) | Center Frequency high Channel (MHz) |
|---------------------|----------------------------|-----------------|-----------------|------------------------------------|-------------------------------------|
| 2479.000000         | 1.009900                   | 0.846667        | ---             | 2478.995050                        | 2480.004950                         |



#### Measurement

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| Start Frequency       | 2.47800 GHz      | 2.47800 GHz    |
| Stop Frequency        | 2.48100 GHz      | 2.48100 GHz    |
| Span                  | 3.000 MHz        | 3.000 MHz      |
| RBW                   | 300.000 kHz      | <= 300.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 101              | ~ 10           |
| SweepTime             | 1.000 ms         | AUTO           |
| Reference Level       | 0.000 dBm        | 0.000 dBm      |
| Attenuation           | 20.000 dB        | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 200              | 200            |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | Sweep          |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 0.50 dB          | 0.50 dB        |
| Run                   | 27 / max. 150    | max. 150       |
| Stable                | 10 / 10          | 10             |
| Max Stable Difference | 0.02 dB          | 0.50 dB        |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Tx Spurious Emission (2402 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2402.000000         | PASS   |

#### Inband Peak

| Frequency (MHz) | Level (dBm) |
|-----------------|-------------|
| 2405.025000     | 6.8         |

#### Final measurements

| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---    |

#### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 2399.975000     | -38.5       | 15.2        | -23.2       |
| 2399.525000     | -38.9       | 15.7        | -23.2       |
| 2399.575000     | -39.5       | 16.3        | -23.2       |
| 2399.475000     | -40.0       | 16.7        | -23.2       |
| 2399.625000     | -42.6       | 19.4        | -23.2       |
| 2399.925000     | -42.9       | 19.7        | -23.2       |
| 2399.875000     | -43.0       | 19.7        | -23.2       |
| 2399.675000     | -43.2       | 19.9        | -23.2       |
| 2399.425000     | -43.4       | 20.2        | -23.2       |
| 2399.825000     | -43.5       | 20.3        | -23.2       |
| 2399.725000     | -43.6       | 20.3        | -23.2       |
| 2399.775000     | -43.7       | 20.4        | -23.2       |
| 2399.375000     | -45.4       | 22.2        | -23.2       |
| 4803.975000     | -47.1       | 23.9        | -23.2       |
| 2399.325000     | -47.2       | 24.0        | -23.2       |

#### Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|-----------------------|----------------------|-----------------|-------------------|
| 30.000000             | 1500.000000          | 1               | 1                 |
| 1500.000000           | 2400.000000          | 1               | 1                 |
| 2400.000000           | 2483.500000          | 1               | 1                 |
| 2483.500000           | 3983.500000          | 1               | 1                 |
| 3983.500000           | 5483.500000          | 1               | 1                 |
| 5483.500000           | 6983.500000          | 1               | 1                 |
| 6983.500000           | 8483.500000          | 1               | 1                 |
| 8483.500000           | 9983.500000          | 1               | 1                 |
| 9983.500000           | 11483.500000         | 1               | 1                 |
| 11483.500000          | 12983.500000         | 1               | 1                 |
| 12983.500000          | 14483.500000         | 1               | 1                 |
| 14483.500000          | 15983.500000         | 1               | 1                 |
| 15983.500000          | 17483.500000         | 1               | 1                 |
| 17483.500000          | 18983.500000         | 1               | 1                 |
| 18983.500000          | 20483.500000         | 1               | 1                 |
| 20483.500000          | 21983.500000         | 1               | 1                 |
| 21983.500000          | 23483.500000         | 1               | 1                 |
| 23483.500000          | 24983.500000         | 1               | 1                 |

FCC ID: 2ADFF-KSBTAP2



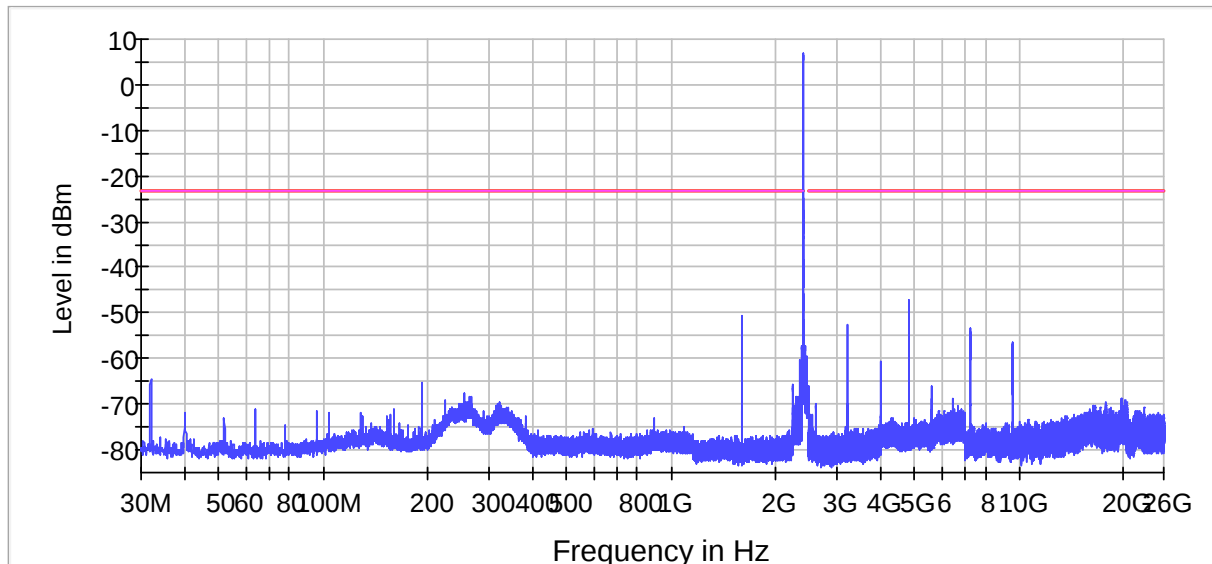
# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019



— Limit    — Sum Level    — Threshold    × Critical    × Final Critical

### Pre Measurement 1

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 29400            | ~ 29400        |
| SweepTime             | 29.400 ms        | AUTO           |
| Reference Level       | -30.000 dBm      | -30.000 dBm    |
| Attenuation           | 0.000 dB         | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 30               | 30             |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 1.00 dB          | 1.00 dB        |
| Run                   | 11 / max. 40     | max. 40        |
| Stable                | 1 / 1            | 1              |
| Max Stable Difference | 0.00 dB          | 1.00 dB        |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Tx Spurious Emission (2441 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2441.000000         | PASS   |

#### Inband Peak

| Frequency (MHz) | Level (dBm) |
|-----------------|-------------|
| 2405.025000     | 6.5         |

#### Final measurements

| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---    |

#### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 4882.075000     | -41.0       | 17.5        | -23.5       |
| 4882.025000     | -41.1       | 17.6        | -23.5       |
| 4881.975000     | -41.5       | 18.1        | -23.5       |
| 4881.675000     | -41.6       | 18.1        | -23.5       |
| 4881.625000     | -42.3       | 18.8        | -23.5       |
| 4881.725000     | -42.5       | 19.1        | -23.5       |
| 4882.325000     | -43.0       | 19.5        | -23.5       |
| 4882.375000     | -43.1       | 19.6        | -23.5       |
| 4882.275000     | -43.6       | 20.1        | -23.5       |
| 4881.925000     | -43.7       | 20.2        | -23.5       |
| 4881.775000     | -43.8       | 20.3        | -23.5       |
| 4881.875000     | -44.3       | 20.9        | -23.5       |
| 4882.175000     | -44.5       | 21.0        | -23.5       |
| 4882.125000     | -44.5       | 21.0        | -23.5       |
| 4881.825000     | -44.7       | 21.2        | -23.5       |

#### Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|-----------------------|----------------------|-----------------|-------------------|
| 30.000000             | 1500.000000          | 1               | 1                 |
| 1500.000000           | 2400.000000          | 1               | 1                 |
| 2400.000000           | 2483.500000          | 1               | 1                 |
| 2483.500000           | 3983.500000          | 1               | 1                 |
| 3983.500000           | 5483.500000          | 1               | 1                 |
| 5483.500000           | 6983.500000          | 1               | 1                 |
| 6983.500000           | 8483.500000          | 1               | 1                 |
| 8483.500000           | 9983.500000          | 1               | 1                 |
| 9983.500000           | 11483.500000         | 1               | 1                 |
| 11483.500000          | 12983.500000         | 1               | 1                 |
| 12983.500000          | 14483.500000         | 1               | 1                 |
| 14483.500000          | 15983.500000         | 1               | 1                 |
| 15983.500000          | 17483.500000         | 1               | 1                 |
| 17483.500000          | 18983.500000         | 1               | 1                 |
| 18983.500000          | 20483.500000         | 1               | 1                 |
| 20483.500000          | 21983.500000         | 1               | 1                 |
| 21983.500000          | 23483.500000         | 1               | 1                 |
| 23483.500000          | 24983.500000         | 1               | 1                 |

FCC ID: 2ADFF-KSBTAP2



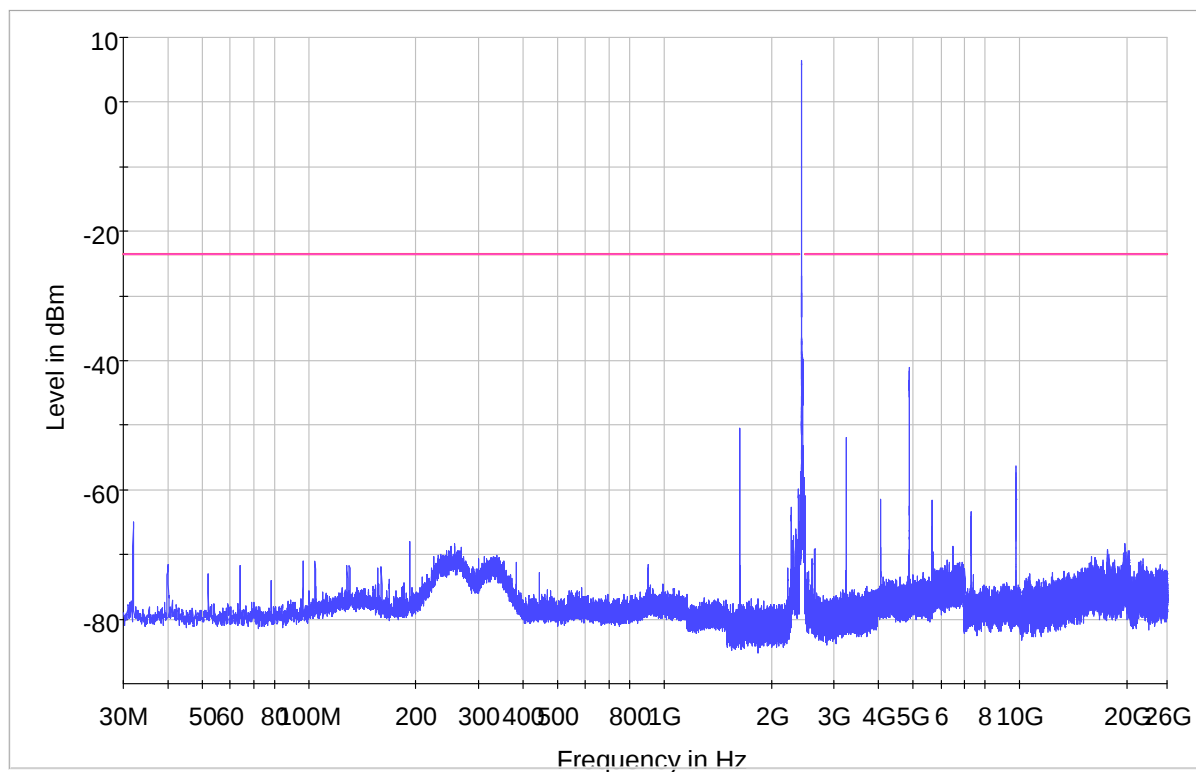
# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019



— Limit Critical — Sum Level — Threshold  
× ×

### Pre Measurement 1

| Setting               | Instrument Value | Target Value   |
|-----------------------|------------------|----------------|
| RBW                   | 100.000 kHz      | <= 100.000 kHz |
| VBW                   | 300.000 kHz      | >= 300.000 kHz |
| SweepPoints           | 29400            | ~ 29400        |
| SweepTime             | 29.400 ms        | AUTO           |
| Reference Level       | -30.000 dBm      | -30.000 dBm    |
| Attenuation           | 0.000 dB         | AUTO           |
| Detector              | MaxPeak          | MaxPeak        |
| SweepCount            | 30               | 30             |
| Filter                | 3 dB             | 3 dB           |
| Trace Mode            | Max Hold         | Max Hold       |
| SweepType             | Sweep            | AUTO           |
| Preamp                | off              | off            |
| Stablemode            | Trace            | Trace          |
| Stablevalue           | 1.00 dB          | 1.00 dB        |
| Run                   | 21 / max. 40     | max. 40        |
| Stable                | 1 / 1            | 1              |
| Max Stable Difference | 0.82 dB          | 1.00 dB        |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Tx Spurious Emission (2480 MHz; GFSK; DH5)

#### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 2480.000000         | PASS   |

#### Inband Peak

| Frequency (MHz) | Level (dBm) |
|-----------------|-------------|
| 2405.025000     | 6.3         |

#### Final measurements

| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---    |

#### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 4959.675000     | -39.7       | 16.0        | -23.7       |
| 4960.025000     | -39.7       | 16.0        | -23.7       |
| 4959.975000     | -40.1       | 16.4        | -23.7       |
| 4959.625000     | -40.2       | 16.5        | -23.7       |
| 4959.725000     | -40.5       | 16.8        | -23.7       |
| 4960.075000     | -40.7       | 17.0        | -23.7       |
| 4960.325000     | -40.9       | 17.2        | -23.7       |
| 4960.375000     | -41.0       | 17.2        | -23.7       |
| 4959.925000     | -41.2       | 17.5        | -23.7       |
| 4960.275000     | -41.7       | 18.0        | -23.7       |
| 4959.775000     | -41.7       | 18.0        | -23.7       |
| 4960.125000     | -42.3       | 18.6        | -23.7       |
| 4959.825000     | -42.4       | 18.7        | -23.7       |
| 4960.175000     | -42.8       | 19.0        | -23.7       |
| 4960.425000     | -42.9       | 19.1        | -23.7       |

#### Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|-----------------------|----------------------|-----------------|-------------------|
| 30.000000             | 1500.000000          | 1               | 1                 |
| 1500.000000           | 2400.000000          | 1               | 1                 |
| 2400.000000           | 2483.500000          | 1               | 1                 |
| 2483.500000           | 3983.500000          | 1               | 1                 |
| 3983.500000           | 5483.500000          | 1               | 1                 |
| 5483.500000           | 6983.500000          | 1               | 1                 |
| 6983.500000           | 8483.500000          | 1               | 1                 |
| 8483.500000           | 9983.500000          | 1               | 1                 |
| 9983.500000           | 11483.500000         | 1               | 1                 |
| 11483.500000          | 12983.500000         | 1               | 1                 |
| 12983.500000          | 14483.500000         | 1               | 1                 |
| 14483.500000          | 15983.500000         | 1               | 1                 |
| 15983.500000          | 17483.500000         | 1               | 1                 |
| 17483.500000          | 18983.500000         | 1               | 1                 |
| 18983.500000          | 20483.500000         | 1               | 1                 |
| 20483.500000          | 21983.500000         | 1               | 1                 |
| 21983.500000          | 23483.500000         | 1               | 1                 |
| 23483.500000          | 24983.500000         | 1               | 1                 |

FCC ID: 2ADFF-KSBTAP2



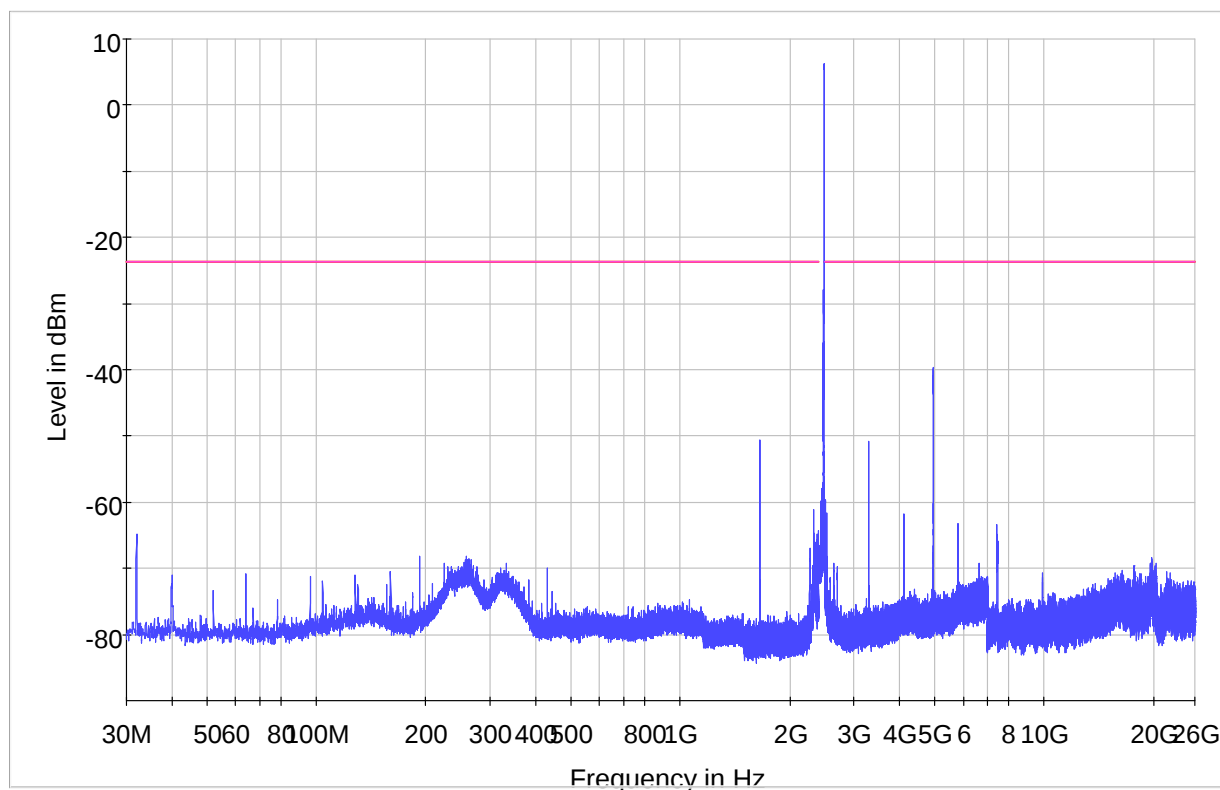
# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019



— Limit Critical      — Sum Level Final Critical      — Threshold

### Pre Measurement 1

| Setting               | Instrument Value | Target Value       |
|-----------------------|------------------|--------------------|
| RBW                   | 100.000 kHz      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 29400            | ~ 29400            |
| SweepTime             | 29.400 ms        | AUTO               |
| Reference Level       | -30.000 dBm      | -30.000 dBm        |
| Attenuation           | 0.000 dB         | AUTO               |
| Detector              | MaxPeak          | MaxPeak            |
| SweepCount            | 30               | 30                 |
| Filter                | 3 dB             | 3 dB               |
| Trace Mode            | Max Hold         | Max Hold           |
| SweepType             | Sweep            | AUTO               |
| Preamplifier          | off              | off                |
| Stablemode            | Trace            | Trace              |
| Stablevalue           | 1.00 dB          | 1.00 dB            |
| Run                   | 17 / max. 40     | max. 40            |
| Stable                | 1 / 1            | 1                  |
| Max Stable Difference | 0.00 dB          | 1.00 dB            |

FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

### Conducted Emission

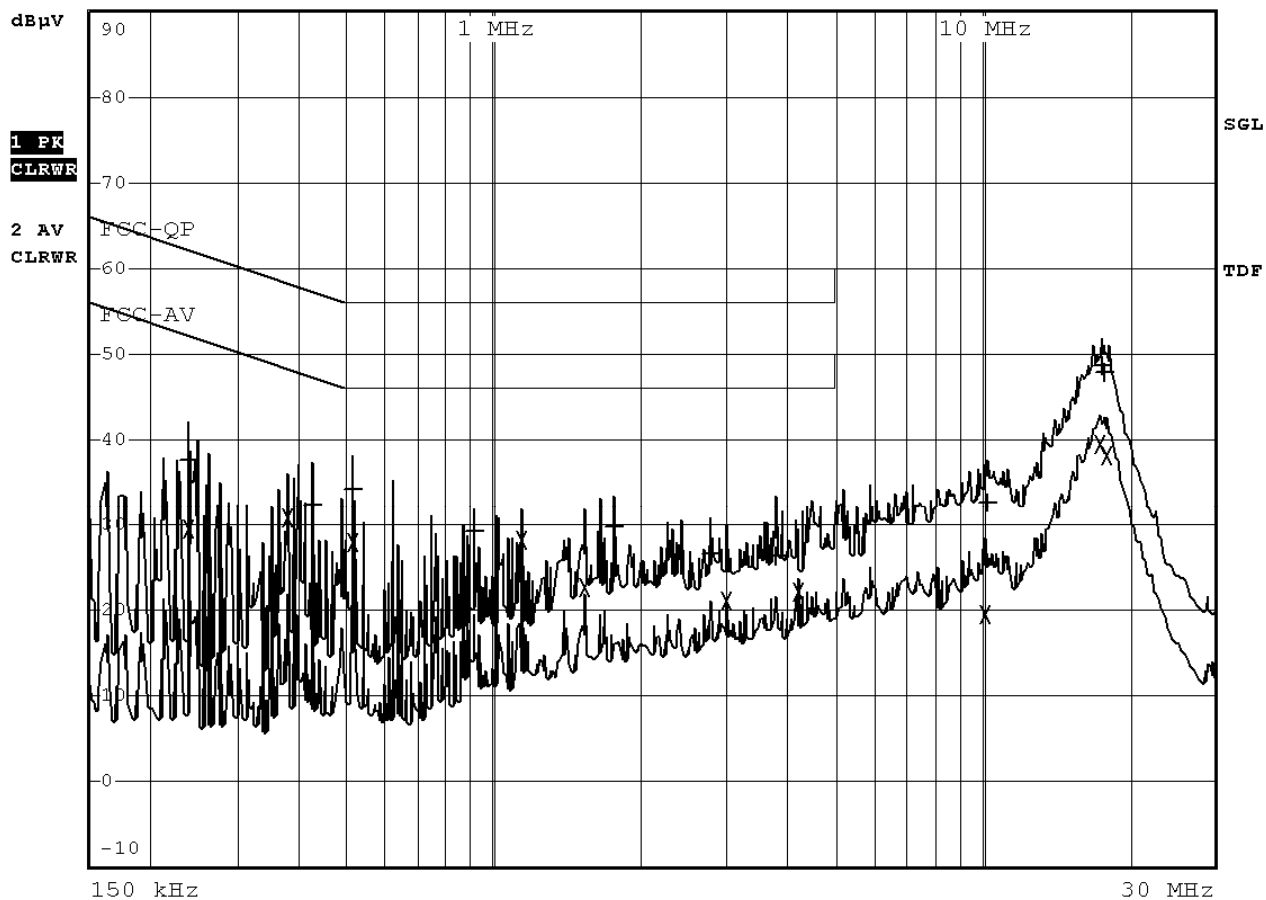
Test mode: Bluetooth + charging



RBW 9 kHz

MT 1 s

Att 10 dB AUTO PREAMP OFF



FCC ID: 2ADFF-KSBTAP2



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AY0041769(5)

Date : Jul 28, 2019

| EDIT PEAK LIST (Final Measurement Results) |             |            |        |                |
|--------------------------------------------|-------------|------------|--------|----------------|
| Trace1:                                    | FCC-QP      |            |        |                |
| Trace2:                                    | FCC-AV      |            |        |                |
| Trace3:                                    | ---         |            |        |                |
| TRACE                                      | FREQUENCY   | LEVEL dBμV |        | DELTA LIMIT dB |
| 1 Quasi Peak                               | 240 kHz     | 37.71      | N gnd  | -24.38         |
| 2 Average                                  | 240 kHz     | 29.49      | N gnd  | -22.60         |
| 2 Average                                  | 379.5 kHz   | 30.75      | N gnd  | -17.53         |
| 1 Quasi Peak                               | 429 kHz     | 32.49      | N gnd  | -24.78         |
| 1 Quasi Peak                               | 513.5 kHz   | 34.09      | L1 gnd | -21.90         |
| 2 Average                                  | 513.5 kHz   | 27.97      | N gnd  | -18.02         |
| 1 Quasi Peak                               | 909.5 kHz   | 29.28      | N gnd  | -26.71         |
| 2 Average                                  | 1.148 MHz   | 28.16      | N gnd  | -17.83         |
| 2 Average                                  | 1.535 MHz   | 22.64      | N gnd  | -23.35         |
| 1 Quasi Peak                               | 1.769 MHz   | 29.67      | N gnd  | -26.32         |
| 1 Quasi Peak                               | 2.786 MHz   | 26.55      | N gnd  | -29.44         |
| 2 Average                                  | 2.9975 MHz  | 21.02      | N gnd  | -24.97         |
| 1 Quasi Peak                               | 3.794 MHz   | 26.48      | N gnd  | -29.52         |
| 2 Average                                  | 4.226 MHz   | 22.22      | N gnd  | -23.77         |
| 2 Average                                  | 10.2155 MHz | 19.53      | L1 gnd | -30.46         |
| 1 Quasi Peak                               | 10.2965 MHz | 32.71      | N gnd  | -27.28         |
| 2 Average                                  | 17.4965 MHz | 39.53      | N gnd  | -10.46         |
| 1 Quasi Peak                               | 17.609 MHz  | 48.67      | N gnd  | -11.32         |
| 1 Quasi Peak                               | 17.9105 MHz | 47.86      | N gnd  | -12.13         |
| 2 Average                                  | 18.122 MHz  | 38.22      | N gnd  | -11.77         |

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

FCC ID: 2ADFF-KSBTAP2

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