TEST REPORT

FCC ID: TUVGFT-B007 Product: Bluetooth Speaker Model No.: GFT-B007 Additional Model No.: Please refer to page 5 Trade Mark: N/A Report No.: TCT171225E040 Issued Date: Jan. 22, 2018

Issued for:

Eastern Times Technology Co., Ltd. Building D, Nan An Industry Park, Youganpu Village, Fenggang Town, Dongguan City, Guangdong, China

Issued By:

Shenzhen Tongce Testing Lab. 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China TEL: +86-755-27673339 FAX: +86-755-27673332

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TABLE OF CONTENTS

| 1. Test Certification | |
|---|----|
| 2. Test Result Summary | 4 |
| 3. EUT Description | 5 |
| 4. Genera Information | |
| 4.1. Test environment and mode | 7 |
| 4.2. Description of Support Units | |
| 5. Facilities and Accreditations | |
| 5.1. Facilities | 8 |
| 5.2. Location | |
| 5.3. Measurement Uncertainty | |
| 6. Test Results and Measurement Data | |
| 6.1. Antenna requirement | 9 |
| 6.2. Conducted Emission | 10 |
| 6.3. Conducted Output Power | |
| 6.4. 20dB Occupy Bandwidth | |
| 6.5. Carrier Frequencies Separation | |
| 6.6. Hopping Channel Number | |
| 6.7. Dwell Time | |
| 6.8. Pseudorandom Frequency Hopping Sequence | |
| 6.9. Conducted Band Edge Measurement | |
| 6.10. Conducted Spurious Emission Measurement | |
| 6.11. Radiated Spurious Emission Measurement | |
| Appendix A: Photographs of Test Setup | |
| Appendix B: Photographs of EUT | |



1. Test Certification

| Product: | Bluetooth Speaker | | | |
|--------------------------|--|--|---------------------|---------|
| Model No.: | GFT-B007 | $(\mathcal{C}^{(1)})$ | (\mathcal{C}) | (c |
| Additional Model: | Please refer to page | 5 | | 0 |
| Trade Mark: | N/A | $\left(\mathcal{C}^{\prime}\right)$ | | |
| Applicant: | Eastern Times Techr | nology Co., Ltd. | | |
| Address: | Building D, Nan An Ir Dongguan City, Guar | ndustry Park, Youganp ngdong, China | ou Village, Fenggan | g Town, |
| Manufacturer: | Eastern Times Techr | nology Co., Ltd. | | |
| Address: | Building D, Nan An Ir Dongguan City, Guar | ndustry Park, Youganp ngdong, China | ou Village, Fenggan | g Town, |
| Date of Test: | Dec. 26, 2017 - Jan. | 19, 2018 | | |
| Applicable Standards: | FCC CFR Title 47 Pa | art 15 Subpart C Secti | on 15.247 | |

The above equipment has been tested by Shenzhen Tongce Testing Lab. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

| Tested By: | Amens Xu | Date: | Jan. 19, 2018 | (é |
|--------------|------------|-------|---------------|------|
| No. | Brews Xu | | | R. |
| Reviewed By: | Beny zhao | Date: | Jan. 22, 2018 | |
| | Beryl Zhao | | Ś | |
| Approved By: | Tomsm | Date: | Jan. 22, 2018 | |
| | Tomsin | | | -(,0 |



2. Test Result Summary

| Requirement | CFR 47 Section | Result |
|--|-------------------------------------|--------|
| Antenna Requirement | §15.203/§15.247 (c) | PASS |
| AC Power Line Conducted Emission | §15.207 | PASS |
| Conducted Peak Output Power | §15.247 (b)(1) §2.1046 | PASS |
| 20dB Occupied Bandwidth | §15.247 (a)(1) §2.1049 | PASS |
| Carrier Frequencies Separation | §15.247 (a)(1) | PASS |
| Hopping Channel Number | §15.247 (a)(1) | PASS |
| Dwell Time | §15.247 (a)(1) | PASS |
| Radiated Emission | §15.205/§15.209 §2.1053, §2.1057 | PASS |
| Band Edge | §15.247(d) §2.1051, §2.1057 | PASS |
| Note: 1. PASS: Test item meets the require | ement. | |
| 2. Fail: Test item does not meet the | requirement. | |
| N/A: Test case does not apply to The test result judgment is decide | | |
| | | |
| | | |



3. EUT Description

| Product Name: | Bluetooth Speaker |
|-----------------------------|--|
| Model : | GFT-B007 |
| Additional Model: | GFT-B001, GFT-B009, GFT-B011, GFT-B013, GFT-B015, GFT-B019, GFT-B021, GFT-B023, GFT-B025, GFT-B029, GFT-B031, GFT-B033, GFT-B035, GFT-B039, GFT-B051, GFT-B053, GFT-B055, GFT-B059, GFT-B061, GFT-B063, GFT-B065, ET-8013, ET-8019, ET-8081, ET-8082, ET-8083, ET-8085, ET-8086, ET-8087, ET-8088, ET-8089, ET-8090, ET-8091, ET-8092, ET-8093, ET-8095, ET-8096, ET-8097, ET-8098, ET-8099, A2, A15, A16 |
| Trade Mark: | N/A |
| Hardware Version: | KSW-A6-2823-2925 |
| Software Version: | ATS2823 |
| BT Version: | V4.2 (This report is for BDR+EDR) |
| Operation Frequency: | 2402MHz~2480MHz |
| Transfer Rate: | 1/2/3 Mbits/s |
| Number of Channel: | 79 |
| Modulation Type: | GFSK, π/4-DQPSK, 8DPSK |
| Modulation Technology: | FHSS |
| Antenna Type: | PCB Antenna |
| Antenna Gain: | 0dBi |
| Power Supply: | Rechargeable Li-ion Battery DC 3.7V |
| Remark: | All models above are identical in interior structure, electrical circuits and components, and just colors and model names are different for the marketing requirement. |



TCT通测检测 TESTING CENTRE TECHNOLOGY

Report No.: TCT171225E040

Operation Frequency each of channel for GFSK, $\pi/4$ -DQPSK, 8DPSK

| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency | |
|----------------------|--------------------------|-----------|-------------|-----------|---------------|----------|-----------|--|
| 0 | 2402MHz | 20 | 2422MHz | 40 | 2442MHz | 60 | 2462MHz | |
| 1 | 2403MHz | 21 | 2423MHz | 41 | 2443MHz | 61 | 2463MHz | |
| . | 🔨 | 9 | 🔨 | 9 | X | 9 | | |
| 10 | 2412MHz | 30 | 2432MHz | 50 | 2452MHz | 70 | 2472MHz | |
| 11 | 2413MHz | 31 | 2433MHz | 51 | 2453MHz | 71 | 2473MHz | |
| | <u>(</u>) | (| <u>(</u>) | | <u>, ())</u> | | (LC) | |
| 18 | 2420MHz | 38 | 2440MHz | 58 | 2460MHz | 78 | 2480MHz | |
| 19 | | | | | | | | |
| Remark: modulatic | Channel 0, 3 on mode. | 89 &78 ha | ve been tes | ted for G | FSK, π/4-D0 | QPSK, 8E | DPSK | |



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4. Genera Information

4.1. Test environment and mode

| Operating Environment: | |
|------------------------|--|
| Temperature: | 25.0 °C |
| Humidity: | 56 % RH |
| Atmospheric Pressure: | 1010 mbar |
| Test Mode: | |
| Engineering mode: | Keep the EUT in continuous transmitting by select channel and modulations with Fully-charged battery |

The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

4.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Equipment | Model No. | Serial No. | FCC ID | Trade Name |
|-----------|-----------|------------|--------|------------|
| , 0 | 1 | | | |

Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
- 3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

Page 7 of 62

5. Facilities and Accreditations

5.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

• FCC - Registration No.: 645098

Shenzhen Tongce Testing Lab

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

• IC - Registration No.: 10668A-1

The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

5.2. Location

Shenzhen Tongce Testing Lab

Address: 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China

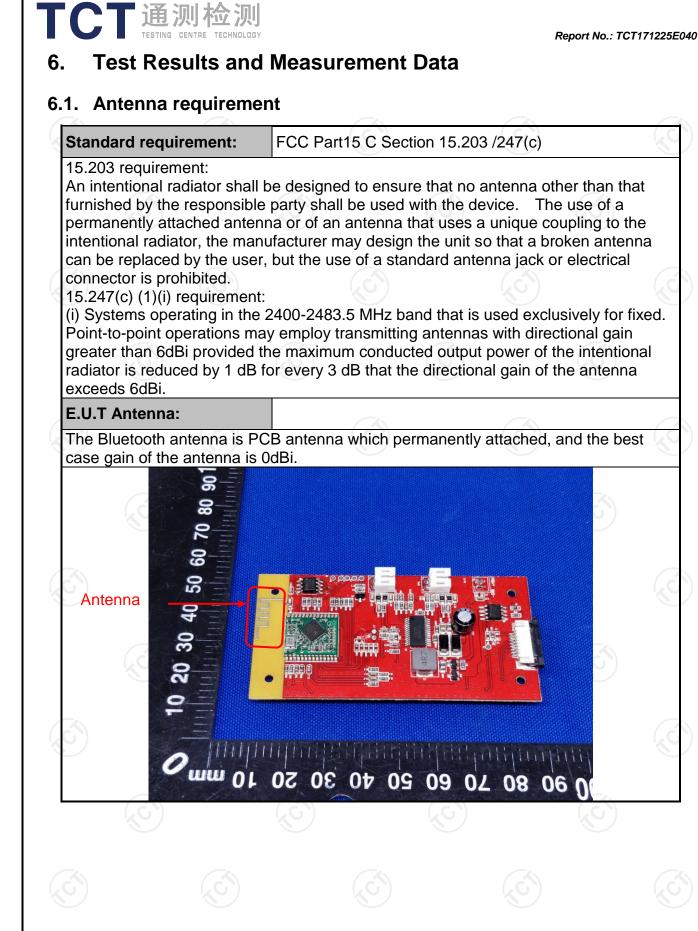
Tel: 86-755-27673339

5.3. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

| No. | Item | MU |
|-----|-------------------------------|---------|
| 1 | Conducted Emission | ±2.56dB |
| 2 | RF power, conducted | ±0.12dB |
| 3 | Spurious emissions, conducted | ±0.11dB |
| 4 | All emissions, radiated(<1G) | ±3.92dB |
| 5 | All emissions, radiated(>1G) | ±4.28dB |
| 6 | Temperature | ±0.1°C |
| 7 | Humidity | ±1.0% |





Page 9 of 62



6.2. Conducted Emission

6.2.1. Test Specification

| Test Requirement: | FCC Part15 C Section 15.207 | | | | | |
|---|--|---|--|--|--|--|
| Test Method: | ANSI C63.10:2013 | | | | | |
| Frequency Range: | 150 kHz to 30 MHz | <u>(</u> (1) | | | | |
| Receiver setup: | RBW=9 kHz, VBW=30 |) kHz, Sweep time | e=auto | | | |
| | Frequency range | Limit (| dBuV) | | | |
| | (MHz) | Quasi-peak | Áverage | | | |
| Limits: | 0.15-0.5 | 66 to 56* | 56 to 46* | | | |
| | 0.5-5 | 56 | 46 | | | |
| | 5-30 | 60 | 50 | | | |
| | Referenc | e Plane | | | | |
| Test Setup: | E.U.T AC power Filter AC power Filter AC power EMI Receiver Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m | | | | | |
| | Remarkc E.U.T: Equipment Under Test LISN: Line Impedence Stabilization N | | | | | |
| Test Mode: | Remarkc E.U.T. Equipment Under Test LISN: Line Impedence Stabilization N Test table height=0.8m Refer to item 4.1 | letwork | | | | |
| | Remark E.U.T. Equipment Under Test LISN Line Impedence Stabilization N Test table height=0.8m Refer to item 4.1 1. The E.U.T is conner impedance stabiliz provides a 50ohm/s measuring equipme 2. The peripheral device power through a L coupling impedance refer to the block photographs). 3. Both sides of A.C. conducted interferent emission, the relative the interface cables | etwork ected to an adapte zation network 50uH coupling im nt. ces are also conne ISN that provides e with 50ohm tern diagram of the . line are checken nce. In order to fin re positions of equ must be changed | (L.I.S.N.). This pedance for the ected to the main a 500hm/50ul- nination. (Please test setup and ed for maximum nd the maximum ipment and all o according to | | | |
| Test Mode: Test Procedure: Test Result: | Remark E.U.T. Equipment Under Test LISN Line Impedence Stabilization No Test table height=0.8m Refer to item 4.1 1. The E.U.T is connel impedance stabiliz provides a 500hm/s measuring equipme 2. The peripheral device power through a L coupling impedance refer to the block photographs). 3. Both sides of A.C. conducted interferent emission, the relative | etwork ected to an adapte zation network 50uH coupling im nt. ces are also conne ISN that provides e with 50ohm tern diagram of the . line are checken nce. In order to fin re positions of equ must be changed | (L.I.S.N.). This pedance for the ected to the main a 50ohm/50uh nination. (Please test setup and ed for maximun nd the maximun ipment and all o according to | | | |

Page 10 of 62

6.2.2. Test Instruments

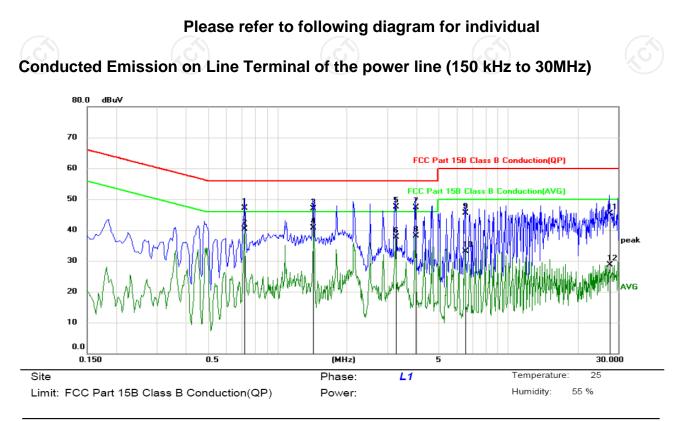
| Conducted Emission Shielding Room Test Site (843) | | | | | | | | | | |
|---|--|-----------------------|-----|---------------|--|--|--|--|--|--|
| Equipment | Equipment Manufacturer Model Serial Number | | | | | | | | | |
| Test Receiver | est Receiver R&S ESPI | | | Jun. 12, 2018 | | | | | | |
| LISN | Schwarzbeck | Schwarzbeck NSLK 8126 | | Sep. 27, 2018 | | | | | | |
| Coax cable (9KHz-30MHz) | тст | CE-05 | N/A | Sep. 27, 2018 | | | | | | |
| EMI Test Software | Shurple Technology | EZ-EMC | N/A | N/A | | | | | | |

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

Page 11 of 62

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6.2.3. Test data

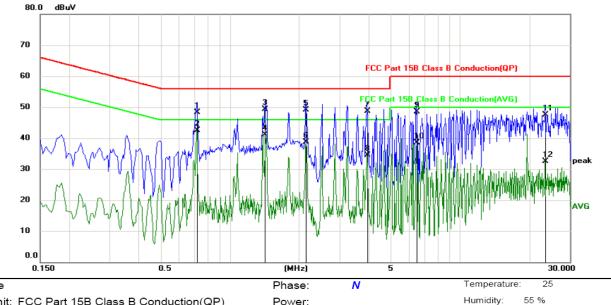


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | | |
|-----|-----|---------|------------------|-------------------|------------------|-------|--------|----------|---------|
| | | MHz | dBuV | dB | dBuV | dBu∨ | dB | Detector | Comment |
| 1 | | 0.7215 | 35.97 | 11.23 | 47.20 | 56.00 | -8.80 | QP | |
| 2 | | 0.7215 | 29.10 | 11.23 | 40.33 | 46.00 | -5.67 | AVG | |
| 3 | | 1.4325 | 35.49 | 11.41 | 46.90 | 56.00 | -9.10 | QP | |
| 4 | * | 1.4325 | 29.35 | 11.41 | 40.76 | 46.00 | -5.24 | AVG | |
| 5 | | 3.2595 | 36.31 | 11.24 | 47.55 | 56.00 | -8.45 | QP | |
| 6 | | 3.2595 | 26.42 | 11.24 | 37.66 | 46.00 | -8.34 | AVG | |
| 7 | | 3.9795 | 36.36 | 10.97 | 47.33 | 56.00 | -8.67 | QP | |
| 8 | | 3.9795 | 27.09 | 10.97 | 38.06 | 46.00 | -7.94 | AVG | |
| 9 | | 6.5130 | 34.75 | 10.85 | 45.60 | 60.00 | -14.40 | QP | |
| 10 | | 6.5130 | 22.20 | 10.85 | 33.05 | 50.00 | -16.95 | AVG | |
| 11 | | 27.4245 | 34.63 | 10.69 | 45.32 | 60.00 | -14.68 | QP | |
| 12 | | 27.4245 | 17.95 | 10.69 | 28.64 | 50.00 | -21.36 | AVG | |

Note:

ote: Freq. = Emission frequency in MHz Reading level $(dB\mu V)$ = Receiver reading Corr. Factor (dB) = Antenna factor + Cable loss Measurement $(dB\mu V)$ = Reading level $(dB\mu V)$ + Corr. Factor (dB)Limit $(dB\mu V)$ = Limit stated in standard Margin (dB) = Measurement $(dB\mu V)$ – Limits $(dB\mu V)$ Q.P. =Quasi-Peak AVG =average * is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz

Report No.: TCT171225E040



Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)

Site Limit: FCC Part 15B Class B Conduction(QP) Power:

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | | |
|-----|-----|---------|------------------|-------------------|------------------|-------|--------|----------|---------|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.7215 | 37.15 | 11.23 | 48.38 | 56.00 | -7.62 | QP | |
| 2 | * | 0.7215 | 31.23 | 11.23 | 42.46 | 46.00 | -3.54 | AVG | |
| 3 | | 1.4235 | 37.93 | 11.41 | 49.34 | 56.00 | -6.66 | QP | |
| 4 | | 1.4235 | 29.61 | 11.41 | 41.02 | 46.00 | -4.98 | AVG | |
| 5 | | 2.1435 | 37.42 | 11.64 | 49.06 | 56.00 | -6.94 | QP | |
| 6 | | 2.1435 | 27.00 | 11.64 | 38.64 | 46.00 | -7.36 | AVG | |
| 7 | | 3.9615 | 37.69 | 10.98 | 48.67 | 56.00 | -7.33 | QP | |
| 8 | | 3.9615 | 23.48 | 10.98 | 34.46 | 46.00 | -11.54 | AVG | |
| 9 | | 6.4770 | 37.74 | 10.84 | 48.58 | 60.00 | -11.42 | QP | |
| 10 | | 6.4770 | 27.67 | 10.84 | 38.51 | 50.00 | -11.49 | AVG | |
| 11 | | 23.4195 | 36.79 | 10.71 | 47.50 | 60.00 | -12.50 | QP | |
| 12 | | 23.4195 | 21.70 | 10.71 | 32.41 | 50.00 | -17.59 | AVG | |

Note1:

Freq. = Emission frequency in MHz

Reading level $(dB\mu V) = Receiver reading$ Corr. Factor (dB) = Antenna factor + Cable loss

Measurement $(dB\mu V) = Reading \, level \, (dB\mu V) + Corr. Factor (dB)$

Limit $(dB\mu V) = Limit$ stated in standard

Margin (dB) = Measurement (dB μ V) – Limits (dB μ V)

Q.P. =Quasi-Peak AVG =average

* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

Note2:

Measurements were conducted in all three channels (high, middle, low) and three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode (High channel and 8DPSK) was submitted only.



6.3. Conducted Output Power

6.3.1. Test Specification

| Test Requirement: | FCC Part15 C Section 15.247 (b)(3) | | | | |
|-------------------|---|--|--|--|--|
| Test Method: | ANSI C63.10:2013 | | | | |
| Limit: | Section 15.247 (b) The maximum peak conducted output power of the intentional radiator shall not exceed the following: (1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band 0.125 watts. | | | | |
| Test Setup: | Spectrum Analyzer | | | | |
| Test Mode: | Transmitting mode with modulation | | | | |
| Test Procedure: | Use the following spectrum analyzer settings: Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel RBW > the 20 dB bandwidth of the emission being measured VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. | | | | |
| Test Result: | PASS | | | | |

6.3.2. Test Instruments

| Equipment | Manufacturer | Model | Serial Number | Calibration Due |
|----------------------------|--------------|--------|---------------|-----------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100060 | Sep. 27, 2018 |
| RF Cable (9KHz-26.5GHz) | тст | RE-06 | N/A | Sep. 27, 2018 |
| Antenna Connector | тст | RFC-01 | N/A | Sep. 27, 2018 |

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

Page 14 of 62

6.3.3. Test Data

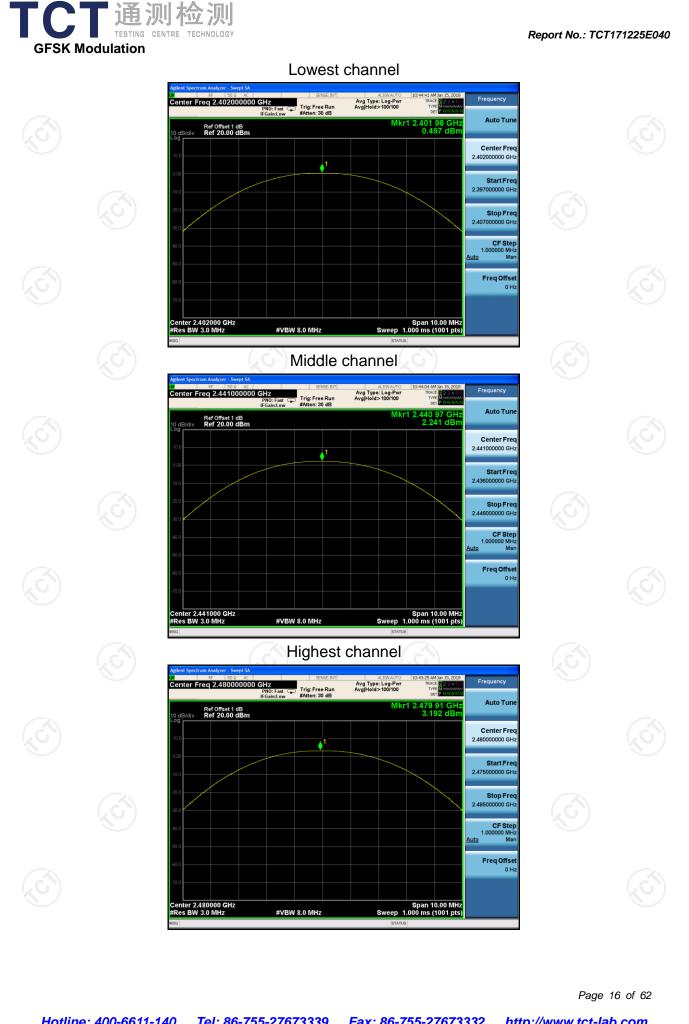
| GFSK mode | | | |
|--------------|----------------------------|-------------|--------|
| Test channel | Peak Output Power (dBm) | Limit (dBm) | Result |
| Lowest | 0.50 | 21.00 | PASS |
| Middle | 2.24 | 21.00 | PASS |
| Highest | 3.19 | 21.00 | PASS |

| | Pi/4DQPSK mode | | | |
|---|----------------|----------------------------|-------------|--------|
| ~ | Test channel | Peak Output Power (dBm) | Limit (dBm) | Result |
| | Lowest | 1.97 | 21.00 | PASS |
| | Middle | 3.66 | 21.00 | PASS |
| | Highest | 4.63 | 21.00 | PASS |

| 8DPSK | mode |
|-------|------|
| | |

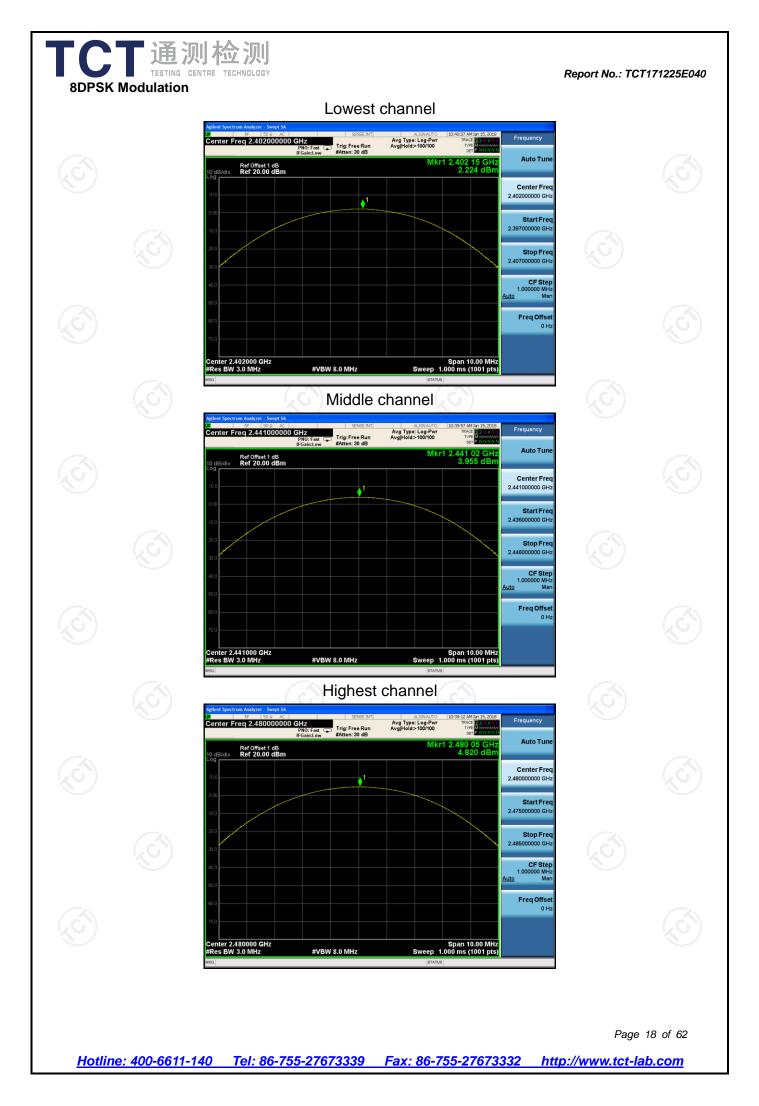
| Test channel | Peak Output Power (dBm) | Limit (dBm) | Result | | | |
|--------------|----------------------------|-------------|--------|--|--|--|
| Lowest | 2.22 | 21.00 | PASS | | | |
| Middle | 3.96 | 21.00 | PASS | | | |
| Highest | 4.82 | 21.00 | PASS | | | |

Test plots as follows:



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6.4. 20dB Occupy Bandwidth

6.4.1. Test Specification

| NSI C63.10:2013 | J. J | | | | |
|--|---|---|--|--|--|
| | J. | | | | |
| | | | | | |
| ectrum Analyzer | EUT | (c | | | |
| Fransmitting mode with modulation | | | | | |
| The testing follows ANSI C63.10:2013 Measurement Guidelines. The RF output of EUT was connected to the spectro analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Use the following spectrum analyzer settings for 20 Bandwidth measurement. Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel; 1% ≪RE ≤5% of the 20 dB bandwidth; VBW≥3RBW; Sweep = auto; Detector function = peak; Trace = m | | | | | |
| ASS | | | | | |
| | The testing follows ANSI Guidelines. The RF output of EUT wa analyzer by RF cable ar was compensated to the measurement. Set to the maximum pow EUT transmit continuous Use the following spectru Bandwidth measuremen Span = approximately 2 bandwidth, centered on ≤5% of the 20 dB band Sweep = auto; Detector hold. Measure and record the | ansmitting mode with modulation The testing follows ANSI C63.10:2013 Measu Guidelines. The RF output of EUT was connected to the s analyzer by RF cable and attenuator. The pa was compensated to the results for each measurement. Set to the maximum power setting and enable EUT transmit continuously. Use the following spectrum analyzer settings Bandwidth measurement. Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel; ≤5% of the 20 dB bandwidth; VBW≥3RBW; Sweep = auto; Detector function = peak; Tran- hold. Measure and record the results in the test rep | | | |

6.4.2. Test Instruments

| Equipment | Manufacturer | Model | Serial Number | Calibration Due |
|----------------------------|--------------|--------|---------------|-----------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100060 | Sep. 27, 2018 |
| RF Cable (9KHz-26.5GHz) | тст | RE-06 | N/A | Sep. 27, 2018 |
| Antenna Connector | ТСТ | RFC-01 | N/A | Sep. 27, 2018 |

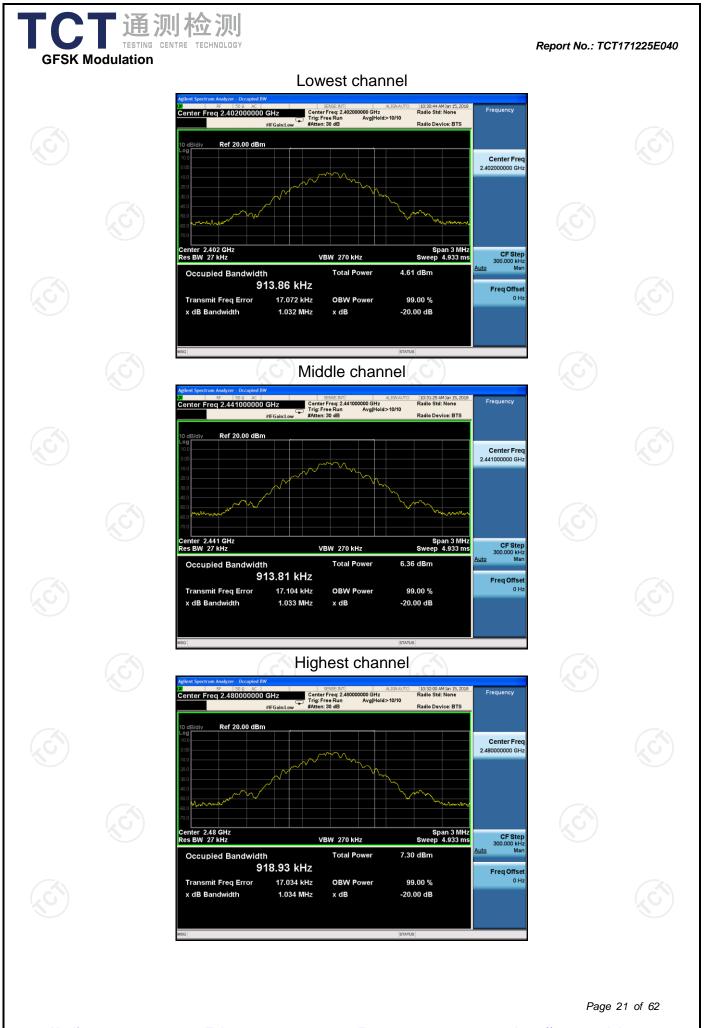
Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.4.3. Test data

| Test channe | 20 | dB Occupy Band | dwidth (kHz) | |
|-------------|------|----------------|--------------|------------|
| Test channe | GFSK | π/4-DQPSK | 8DPSK | Conclusion |
| Lowest | 1032 | 1338 | 1359 | PASS |
| Middle | 1033 | 1339 | 1360 | PASS |
| Highest | 1034 | 1339 | 1364 | PASS |
| | | | | |

Test plots as follows:

| | ots as follow | ws: | | | | | | |
|--------|---------------|-------------|--------------|-----------|--------------------|------------|------------------------------|----------------------------|
| | | | | | | | | |
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| Hotlin | e: 400-6611- | -140 Tel: 8 | 36-755-27673 | 1339 Fax: | <u>86-755-2767</u> | '3332 http | Page ://www.tct-la | 20 of 62 1 b.com |











6.5. Carrier Frequencies Separation

6.5.1. Test Specification

| Test Requirement: | FCC Part15 C Section 15.247 (a)(1) |
|-------------------|---|
| Test Method: | ANSI C63.10:2013 |
| Limit: | Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater. |
| Test Setup: | Spectrum Analyzer EUT |
| Test Mode: | Hopping mode |
| Test Procedure: | The testing follows ANSI C63.10:2013 Measurement Guidelines. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. Use the following spectrum analyzer settings: Span = wide enough to capture the peaks of two adjacent channels; RBW is set to approximately 30% of the channel spacing, adjust as necessary to best identify the center of each individual channel; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Record the value in report. |
| Test Result: | PASS (C) |
| | |

6.5.2. Test Instruments

| Equipment | Manufacturer | Model | Serial Number | Calibration Due |
|----------------------------|--------------|--------|---------------|-----------------|
| Spectrum Analyzer | Agilent | N9020A | MY49100060 | Sep. 27, 2018 |
| RF Cable (9KHz-26.5GHz) | тст | RE-06 | N/A | Sep. 27, 2018 |
| Antenna Connector | тст | RFC-01 | N/A | Sep. 27, 2018 |

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to

international system unit (SI).

6.5.3. Test data

| | GFSK mc | de | | |
|--------------|---|--------|------|--|
| Test channel | Carrier Frequencies Separation (kHz) | | | |
| Lowest | 1000 | 689.33 | PASS | |
| Middle | 998 | 689.33 | PASS | |
| Highest | 1000 | 689.33 | PASS | |

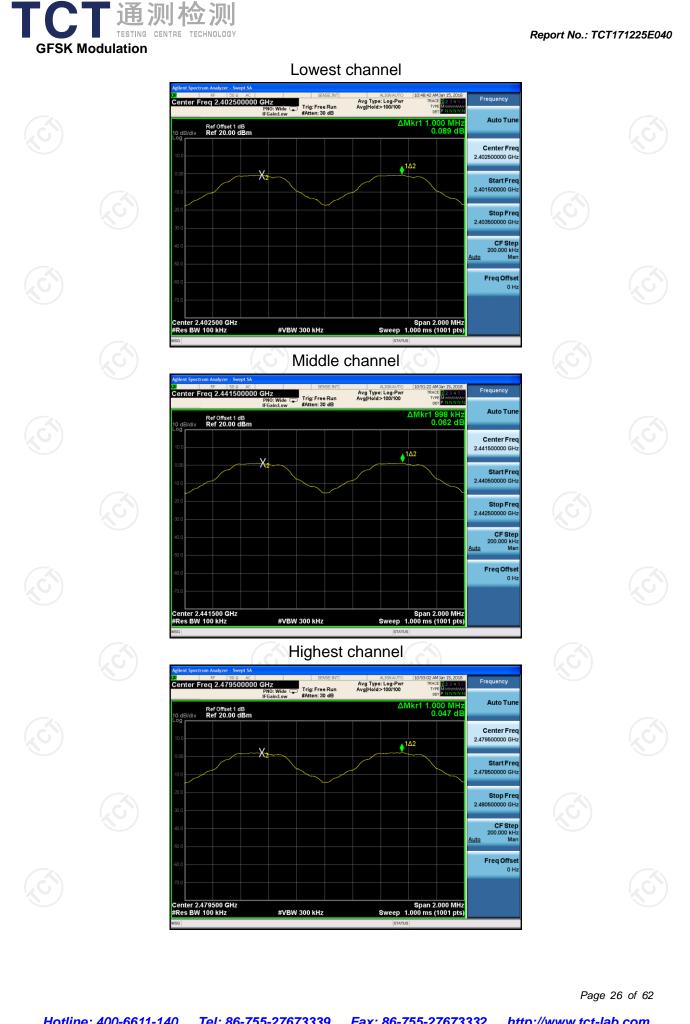
| | Pi/4 DQPSK | mode | | |
|--|------------------------|--------|------|--|
| Test channelCarrier Frequencies Separation (kHz)Limit (kHz)Result | | | | |
| Lowest 1000 | | 892.67 | PASS | |
| Middle | Middle 1000 892.67 PAS | | PASS | |
| Highest | 998 | 892.67 | PASS | |

| | 8DPSK m | ode | | |
|--|-------------------------|--------|------|--|
| Test channelCarrier Frequencies Separation (kHz)Limit (kHz)Result | | | | |
| Lowest | 1004 | 909.33 | PASS | |
| Middle | Middle 1002 909.33 PASS | | PASS | |
| Highest | 1004 | 909.33 | PASS | |

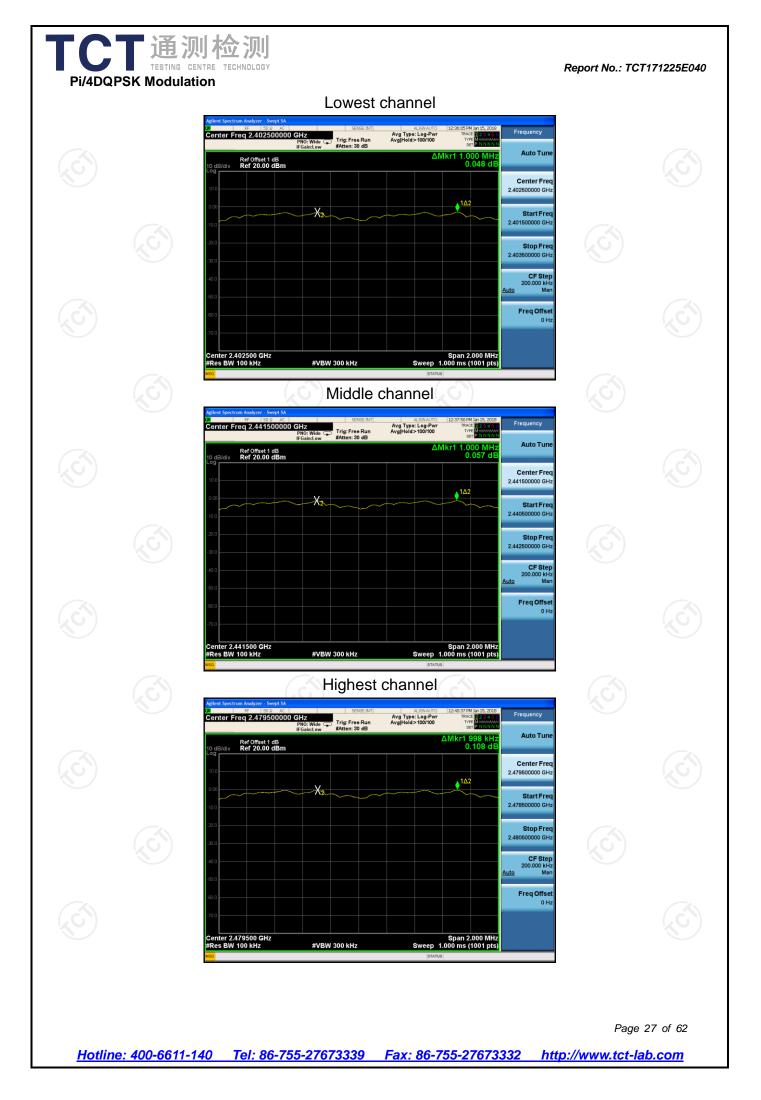
| Note: | According to section 6.4 | | |
|-------|--------------------------|--------------------------------------|--|
| | Mode | 20dB bandwidth (kHz) (worse case) | Limit (kHz) (Carrier Frequencies Separation) |
| | GFSK | 1034 | 689.33 |
| | π/4-DQPSK | 1339 | 892.67 |
| | 8DPSK | 1364 | 909.33 |
| | | | |

Test plots as follows:

Page 25 of 62



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6.6. Hopping Channel Number

6.6.1. Test Specification

| Test Requirement: | FCC Part15 C Section 15.247 (a)(1) |
|-------------------|---|
| Test Method: | ANSI C63.10:2013 |
| Limit: | Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. |
| Test Setup: | |
| | Spectrum Analyzer EUT |
| Test Mode: | Hopping mode |
| Test Procedure: | The testing follows ANSI C63.10:2013 Measurement Guidelines. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. Use the following spectrum analyzer settings: Span = the frequency band of operation; set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. The number of hopping frequency used is defined as the number of total channel. Record the measurement data in report. |
| Test Result: | PASS S |

6.6.2. Test Instruments

| Equipment Manufacturer | | Model | Serial Number | Calibration Due | |
|------------------------|----------------------------|---------|---------------|-----------------|---------------|
| | Spectrum Analyzer | Agilent | N9020A | MY49100060 | Sep. 27, 2018 |
| | RF Cable (9KHz-26.5GHz) | тст | RE-06 | N/A | Sep. 27, 2018 |
| | Antenna Connector | TCT | RFC-01 | N/A | Sep. 27, 2018 |

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

TCT 通测检测 TESTING CENTRE TECHNOLOGY 6.6.3. Test data

Report No.: TCT171225E040

| | Mode | | Hopping chanr numbers | nel | Limit | Res | ult |
|---------------|----------------------|----------------------|--------------------------|-------------|-------------|-----------------------|----------|
| GFSK, P | /4-DQPSK, 8 | BDPSK | 79 | | 15 | PAS | S |
| Test plots as | follows: | | | | | | |
| | | | | | | | |
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| Hotlino: 400 |) <u>-6611-140</u> 7 | <u>[el: 86-755-2</u> | 7673330 Fax: | 86-755-2767 | 12222 http: | Page ://www.tct-la | |