

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC155540 1 of 67 Page:

FCC Radio Test Report FCC ID: 2AGGR-B45

Original Grant

TB-FCC155540 Report No.

Applicant Shenzhen Rivers Technology Co., Limited

Equipment Under Test (EUT)

EUT Name Keyboard

Model No. B45

B46, B47, B48, B49, B50 Series Model No.

Brand Name Bastron

Receipt Date 2017-06-25

Test Date 2017-06-26 to 2017-07-12

Issue Date 2017-07-12

Standards FCC Part 15: 2016, Subpart C(15.247)

Test Method ANSI C63.10: 2013

Conclusions PASS

In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC requirements

Test/Witness Engineer

Approved& Authorized

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0

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1. General Information about EUT

1.1 Client Information

Applicant: Shenzhen Rivers Technology Co.,Limited

Address : A#1611, Zhantao Technology Building, Longhua New District,

Shenzhen, China

Manufacturer : Shenzhen Rivers Technology Co., Limited

Address : 6F, First Building, Taiming Industrial Park, New Longhua District,

Shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

| EUT Name | A | Keyboard | Keyboard | | | | |
|--|-----------------------------|--|--|--|--|--|--|
| Models No. | : | B45, B46, B47, B48, B49, | B45, B46, B47, B48, B49, B50 | | | | |
| Model Difference | : | | ical in the same PCB layout and electrical is model name for commercial. | | | | |
| COLUMN TO SERVICE SERV | | Operation Frequency: | Bluetooth V2.1+EDR: 2402~2480 MHz | | | | |
| | | Number of Channel: | Bluetooth: 79 Channels see Note 2 | | | | |
| Product | | Max Peak Output Power: Bluetooth: -1.543dBm(π /4-DQPSK) | | | | | |
| Description | | Antenna Gain: | -0.68 dBi PCB Antenna | | | | |
| | | Modulation Type: | GFSK 1Mbps(1 Mbps) | | | | |
| | | | π /4-DQPSK(2 Mbps) | | | | |
| Power Supply | ÷ | DC Voltage Supply from U | SB Port. | | | | |
| | 3 | DC Supply by the Battery. | | | | | |
| Power Rating | • | DC 5.0 V from the USB Cable. | | | | | |
| | DC 3.7V by 4000mAh Li-ion E | | on Battery. | | | | |
| Connecting I/O | : | Please refer to the User's | Manual | | | | |
| Port(S) | | | | | | | |

Note: The EUT has four bluetooth Module, the three module is N51822(BLE) for keyboard(please see the separate test report), the other Module is JL(BT 2.1+EDR) for play music.

Nota

(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) Channel List:

| Bluetooth Channel List | | | | | | |
|------------------------|--------------------|---------|--------------------|---------|--------------------|--|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | |
| 00 | 2402 | 27 | 2429 | 54 | 2456 | |
| 01 | 2403 | 28 | 2430 | 55 | 2457 | |
| 02 | 2404 | 29 | 2431 | 56 | 2458 | |



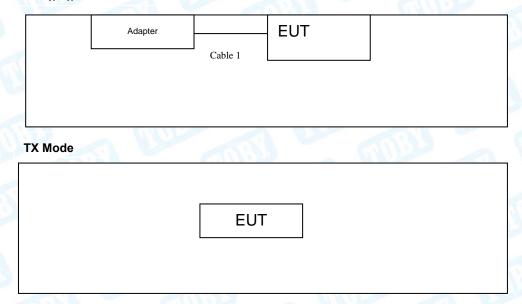
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| The same of the sa | C1 B B | | | | |
|--|--------|----|------|--------|------|
| 03 | 2405 | 30 | 2432 | 57 | 2459 |
| 04 | 2406 | 31 | 2433 | 58 | 2460 |
| 05 | 2407 | 32 | 2434 | 59 | 2461 |
| 06 | 2408 | 33 | 2435 | 60 | 2462 |
| 07 | 2409 | 34 | 2436 | 61 | 2463 |
| 08 | 2410 | 35 | 2437 | 62 | 2464 |
| 09 | 2411 | 36 | 2438 | 63 | 2465 |
| 10 | 2412 | 37 | 2439 | 64 | 2466 |
| 11 | 2413 | 38 | 2440 | 65 | 2467 |
| 12 | 2414 | 39 | 2441 | 66 | 2468 |
| 13 | 2415 | 40 | 2442 | 67 | 2469 |
| 14 | 2416 | 41 | 2443 | 68 | 2470 |
| 15 | 2417 | 42 | 2444 | 69 | 2471 |
| 16 | 2418 | 43 | 2445 | 70 | 2472 |
| 17 | 2419 | 44 | 2446 | 71 | 2473 |
| 18 | 2420 | 45 | 2447 | 72 | 2474 |
| 19 | 2421 | 46 | 2448 | 73 | 2475 |
| 20 | 2422 | 47 | 2449 | 74 | 2476 |
| 21 | 2423 | 48 | 2450 | 75 | 2477 |
| 22 | 2424 | 49 | 2451 | 76 | 2478 |
| 23 | 2425 | 50 | 2452 | 77 | 2479 |
| 24 | 2426 | 51 | 2453 | 78 | 2480 |
| 25 | 2427 | 52 | 2454 | MILLER | 2 10 |
| 26 | 2428 | 53 | 2455 | 610 | |
| | | | | | |

⁽³⁾ The Antenna information about the equipment is provided by the applicant.

1.3 Block Diagram Showing the Configuration of System Tested

Charging with TX Mode





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1.4 Description of Support Units

| Equipment Information | | | | | | | | |
|--|-------------------|----|------|---|--|--|--|--|
| Name Model FCC ID/VOC Manufacturer Used "√" | | | | | | | | |
| AC/DC Adapter TEKA012 VOC TEKA | | | | √ | | | | |
| AC/DC Adapter: Input:100~240V, 50/60Hz, 0.2A. Output: 5V, 1A | | | | | | | | |
| | Cable Information | | | | | | | |
| Number Shielded Type Ferrite Core Length Note | | | | | | | | |
| Cable 1 | NO | NO | 1.5M | | | | | |

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

| For Conducted Test | | | | |
|-----------------------------|-------------------|--|--|--|
| Final Test Mode Description | | | | |
| Mode 1 | USB Charging Mode | | | |

| For Radiated Test | | | | |
|-----------------------------|---------------------------------------|--|--|--|
| Final Test Mode Description | | | | |
| Mode 1 | TX GFSK Mode | | | |
| Mode 2 | TX Mode(GFSK) Channel 00/39/78 | | | |
| Mode 3 | TX Mode(π /4-DQPSK) Channel 00/39/78 | | | |
| Mode 4 | Hopping Mode(GFSK) | | | |
| Mode 5 | Hopping Mode(π /4-DQPSK) | | | |

Note

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate. We have pretested all the test modes above.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

TX Mode: GFSK (1 Mbps)

TX Mode: π /4-DQPSK (2 Mbps)

(2) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on X-plane as the normal use. Therefore only the test data of this X-plane was used for radiated emission measurement test.



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1.6 Description of Test Software Setting

During testing channel power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of Bluetooth mode.

| Test Software Version | FCCAssist_1.5.exe | | |
|-----------------------|-------------------|---------|----------|
| Frequency | 2402 MHz | 2441MHz | 2480 MHz |
| GFSK | DEF | DEF | DEF |
| π /4-DQPSK | DEF | DEF | DEF |

1.7 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 %.

| Test Item | Parameters | Expanded Uncertainty (U _{Lab}) |
|--------------------|---|--|
| Conducted Emission | Level Accuracy: 9kHz~150kHz 150kHz to 30MHz | ±3.42 dB ±3.42 dB |
| Radiated Emission | Level Accuracy: 9kHz to 30 MHz | ±4.60 dB |
| Radiated Emission | Level Accuracy: 30MHz to 1000 MHz | ±4.40 dB |
| Radiated Emission | Level Accuracy: Above 1000MHz | ±4.20 dB |



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1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



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2. Test Summary

| | FC | C Part 15 Subpart C(15.247)/ RSS | 247 Issue 1 | | |
|----------------------|--------------------|--|-------------|--|--|
| Standard Section | | Took Mana | | D | |
| FCC | IC | Test Item | Judgment | Remark | |
| 15.203 | | Antenna Requirement | PASS | N/A | |
| 15.207 | RSS-GEN 7.2.2 | Conducted Emission | PASS | N/A | |
| 15.205 | RSS-Gen 7.2.3 | Restricted Bands | PASS | N/A | |
| 15.247(a)(1) | RSS 247 5.1 (2) | Hopping Channel Separation | PASS | N/A | |
| 15.247(a)(1) | RSS 247 5.1 (4) | Dwell Time | PASS | N/A | |
| 15.247(b)(1) | RSS 247 5.4 (2) | Peak Output Power | PASS | N/A | |
| 15.247(b)(1) | RSS 247 5.1 (4) | Number of Hopping Frequency | PASS | N/A | |
| 15.247(d) | RSS 247 5.5 | Band Edge | PASS | N/A | |
| 15.247(c)& 15.209 | RSS 247 5.5 | Radiated Spurious Emission | PASS | N/A | |
| 15.247(a) | RSS 247 5.1 (1) | 99% Occupied Bandwidth & 20dB Bandwidth | PASS | 99%OBW GFSK:893.0451kHz π/4-DQPSK: 1184.90kHz | |

Note: N/A is an abbreviation for Not Applicable.



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3. Test Equipment

| Conducte | d Emission Te | st | | | |
|---------------------------|----------------------------------|-------------|------------|---------------|------------------|
| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Due Date |
| EMI Test Receiver | Rohde & Schwarz | ESCI | 100321 | Jul. 22, 2016 | Jul. 21, 2017 |
| RF Switching Unit | Compliance Direction Systems Inc | RSU-A4 | 34403 | Jul. 22, 2016 | Jul. 21, 2017 |
| AMN | SCHWARZBECK | NNBL 8226-2 | 8226-2/164 | Jul. 22, 2016 | Jul. 21, 2017 |
| LISN | Rohde & Schwarz | ENV216 | 101131 | Jul. 22, 2016 | Jul. 21, 2017 |
| Radiation | Emission Tes | t | | | |
| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Due Date |
| Spectrum Analyzer | Agilent | E4407B | MY45106456 | Jul. 22, 2016 | Jul. 21, 2017 |
| EMI Test Receiver | Rohde & Schwarz | ESPI | 100010/007 | Jul. 22, 2016 | Jul. 21, 2017 |
| Bilog Antenna | ETS-LINDGREN | 3142E | 00117537 | Mar.25, 2017 | Mar. 24, 201 |
| Bilog Antenna | ETS-LINDGREN | 3142E | 00117542 | Mar.25, 2017 | Mar. 24, 201 |
| Horn Antenna | ETS-LINDGREN | 3117 | 00143207 | Mar.24, 2017 | Mar. 23, 201 |
| Horn Antenna | ETS-LINDGREN | 3117 | 00143209 | Mar.24, 2017 | Mar. 23, 201 |
| Loop Antenna | Laplace instrument | RF300 | 0701 | Mar.24, 2017 | Mar. 23, 201 |
| Pre-amplifier | Sonoma | 310N | 185903 | Mar.25, 2017 | Mar. 24, 201 |
| Pre-amplifier | HP | 8449B | 3008A00849 | Mar. 29, 2017 | Mar. 28, 201 |
| Cable | HUBER+SUHNER | 100 | SUCOFLEX | Mar. 29, 2017 | Mar. 28, 201 |
| Positioning Controller | ETS-LINDGREN | 2090 | N/A | N/A | N/A |
| Antenna C | Conducted Em | ission | | | |
| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Due Date |
| Spectrum Analyzer | Agilent | E4407B | MY45106456 | Jul. 22, 2016 | Jul. 21, 2017 |
| Spectrum Analyzer | Rohde & Schwarz | ESCI | 100010/007 | Jul. 22, 2016 | Jul. 21, 2017 |
| Power Meter | Anritsu | ML2495A | 25406005 | Jul. 22, 2016 | Jul. 21, 2017 |
| Power Sensor | Anritsu | ML2411B | 25406005 | Jul. 22, 2016 | Jul. 21, 2017 |



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4. Conducted Emission Test

4.1 Test Standard and Limit

4.1.1Test Standard FCC Part 15.207

4.1.2 Test Limit

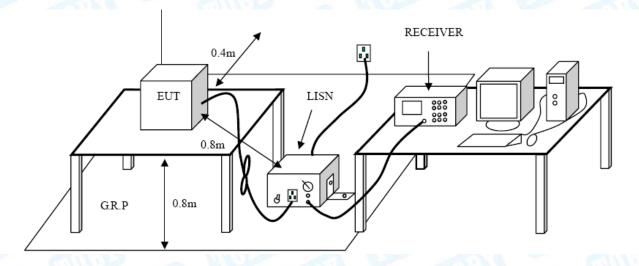
Conducted Emission Test Limit

| Eroguopov | Maximum RF Line Voltage (dBμV) | | | |
|---------------|--------------------------------|-------------------------|--|--|
| Frequency | Quasi-peak Level | Average Level 56 ~ 46 * | | |
| 150kHz~500kHz | 66 ~ 56 * | | | |
| 500kHz~5MHz | 56 | 46 | | |
| 5MHz~30MHz | 60 | 50 | | |

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2 Test Setup





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4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 EUT Operating Mode

Please refer to the description of test mode.

4.5 Test Data

Test data please refer the following pages.



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| Keyboar | d | 0.0 | Model Nam | ne : | B45 | 5 |
|---|---------------------------------|--|---|--|--|--|
| 25℃ | 100 | | | | 55% | 6 |
| AC 120\ | //60 Hz | | 1 | | 500 | |
| Line | | WILL S | | 1 11 | | |
| USB Cha | arging Mo | de | | 3 | - 1 | Millian |
| Only wor | rse case is | s reported | The same | - | 88 . | - 6 |
| | | | | | | |
| | | | | | QP: AVG: | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| X | | | | Markeyer | | |
| 11) A | | | allely graphical | A CONTRACTOR OF THE PROPERTY O | mar and party | |
| 11/1/1/1 | hy man | Mary and the Market | on the supply of the section. | Marry Marry Marry | mary June | 1106 01 |
| W ValaA/ | , M, , | n wallan | المراهام المراهام | | 1/20 | peak |
| - 111 - 174 - 131 - 14 | 1 1 1 1 1 1 1 1 | Y | | | | |
| W 17 W Y ' | W 14 M | white was | Maland Agrand | | ham | MV AVG |
| \ | MAN IN MA | Maril 1 months have been and | 1. A silkned/Allerania | | \ | AVG |
| \ (\)\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | my In /h | North was an and serviced | C. A. Barrell B. College | | - Vinner | AVG |
| | My In Ma | Mary Control | Andrew Age Constant | | \ | |
| 0.5 | Mr hum | (MHz) | Muladia area | | <u></u> | 30.000 |
| | Reading | (MHz) | Measure- | | | |
| F | Reading Level | | | Limit | Over | |
| F | _ | Correct | Measure- | Limit | Over | |
| Freq. | Level | Correct Factor | Measure- ment | dBuV | | 30.000 |
| Freq. MHz | Level dBuV | Correct Factor | Measure- ment | dBu∨ 64.57 | dB | 30.000 Detector |
| Freq. MHz 1780 | dBuV 41.86 | Correct Factor dB 9.98 | Measure- ment dBuV 51.84 | dBuV 64.57 54.57 | dB -12.73 | 30.000 Detector |
| Freq. MHz 1780 1780 3020 | dBuV 41.86 29.85 | Correct Factor dB 9.98 9.98 | Measure- ment dBuV 51.84 39.83 | dBuV 64.57 54.57 60.19 | dB -12.73 -14.74 | Detector QP AVG |
| Freq. MHz 1780 1780 3020 | dBuV 41.86 29.85 32.26 | Correct Factor dB 9.98 9.98 10.02 | Measure- ment dBuV 51.84 39.83 42.28 | dBuV 64.57 54.57 60.19 50.19 | dB -12.73 -14.74 -17.91 | Detector QP AVG QP |
| | AC 120\ Line USB Cha | AC 120V/60 Hz Line USB Charging Mo | AC 120V/60 Hz | AC 120V/60 Hz Line USB Charging Mode | AC 120V/60 Hz Line USB Charging Mode Only worse case is reported | AC 120V/60 Hz Line USB Charging Mode Only worse case is reported QP: AVG: |

Emission Level= Read Level+ Correct Factor

30.12

22.54

26.51

14.16

29.87

19.62

10.02

10.02

10.07

10.07

10.09

10.09

40.14

32.56

36.58

24.23

39.96

29.71

0.4340

0.4340

0.6020

0.6020

7.8940

7.8940

7

8

9

10

11

12

QP

AVG

QP

AVG

QP

AVG

57.18 -17.04

47.18 -14.62

56.00 -19.42

46.00 -21.77

60.00 -20.04

50.00 -20.29



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| EUT: | Keyboard | 1 | Model Name : | | B45 |) |
|---------------|-----------------------|---|--|-------------|------------------|----------|
| Temperature: | 25℃ | 18 | Relative Hum | idity: | 55% | |
| Test Voltage: | AC 120V/60 H | Z | | | | MARIE |
| Terminal: | Neutral | | V C | G. | 1.30 | |
| Test Mode: | USB Charging | Mode | | Mile | | |
| Remark: | Only worse ca | se is reported | MILE | | | W. |
| 90.0 dBuV | | | | | QP: AVG: | |
| -10 0.150 | 0.5 | MANA MANA MANA MANA MANA MANA MANA MANA | Mayor Manager and the second s | March March | Manage of market | peak AVG |
| No. Mk. F | Reading req. Level | g Correct Factor | Measure- ment L | imit | Over | |
| | 1Hz dBuV | dB | dBuV | dBu∀ | dB | Detector |
| 1 0.1 | 860 38.41 | 9.99 | 48.40 6 | 4.21 | -15.81 | QP |
| 2 * 0.1 | 860 30.61 | 9.99 | 40.60 5 | 4.21 | -13.61 | AVG |
| 3 0.2 | 420 28.59 | 10.02 | 38.61 6 | 2.02 | -23.41 | QP |
| 4 0.2 | 420 18.96 | 10.02 | 28.98 5 | 2.02 | -23.04 | AVG |
| 5 0.3 | 020 24.10 | 10.02 | 34.12 | 0.19 | -26.07 | QP |
| 6 0.3 | 020 16.23 | 10.02 | 26.25 5 | 0.19 | -23.94 | AVG |
| 7 4.0 | 540 22.53 | 9.99 | 32.52 5 | 6.00 | -23.48 | QP |
| 8 4.0 | 540 10.03 | 9.99 | 20.02 4 | 6.00 | -25.98 | AVG |
| 9 7.0 | 620 30.21 | 10.06 | 40.27 6 | 0.00 | -19.73 | QP |
| 10 7.0 | 620 20.62 | 10.06 | 30.68 5 | 0.00 | -19.32 | AVG |
| 11 7.8 | 940 31.55 | 10.09 | 41.64 6 | 0.00 | -18.36 | QP |
| 12 7.8 | 940 21.32 | 10.09 | 31.41 5 | 0.00 | -18.59 | AVG |

Emission Level= Read Level+ Correct Factor

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5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.209

5.1.2 Test Limit

Radiated Emission Limit (9 kHz~1000MHz)

| Frequency (MHz | Field Strength (microvolt/meter) | Measurement Distance (meters) |
|-------------------|----------------------------------|-------------------------------|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

Radiated Emission Limit (Above 1000MHz)

| Frequency | Distance of 3m (dBuV/m) | | | |
|------------|-------------------------|---------|--|--|
| (MHz) | Peak | Average | | |
| Above 1000 | 74 | 54 | | |

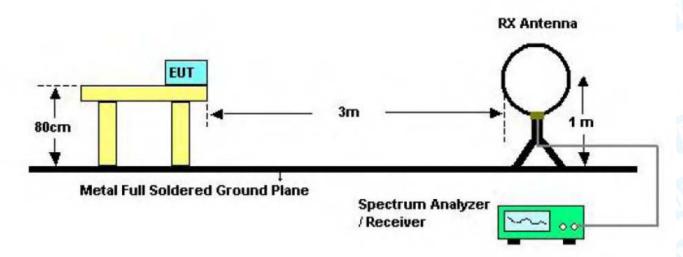
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m)

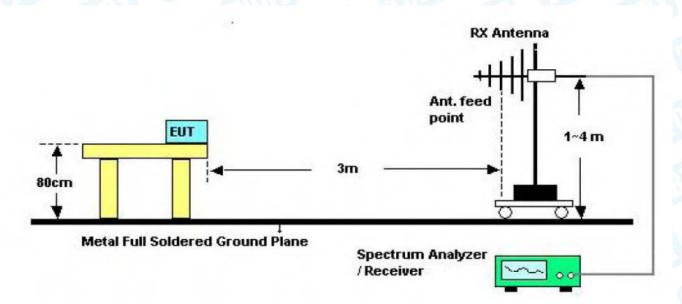


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5.2 Test Setup



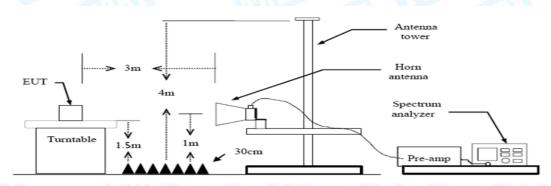
Below 30MHz Test Setup



Below 1000MHz Test Setup



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Above 1GHz Test Setup

5.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power in TX mode.

5.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

Test data please refer the following pages.



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9KHz~30MHz

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB

below the permissible value has no need to be reported.

30MHz~1GHz

| EUT: | Keyboard | 1 | Model Na | me : | B45 | 11:35 |
|--|---|---|--|---|--|--------------------------|
| Temperature: | 25℃ | | Relative H | umidity: | 55% | |
| est Voltage: | DC 3.7V | A THE | | MID2 | | 9 |
| Ant. Pol. | Horizontal | ABO | 177 | 1 | | 13 |
| Test Mode: | TX GFSK Mode | 2402MHz | CHILL | - | A STATE OF THE PARTY OF THE PAR | |
| Remark: | Only worse case | e is reported | 50 | UPP | | 1/1/ |
| 80.0 dBuV/m | | | | | | |
| 30 | 34 2 X | 5 5 X X X X X X X X X X X X X X X X X X | | (RF)FCC 15C | Margin -6 | dB |
| | | | | | | |
| -20 30.000 40 50 | 60 70 80 | (MHz) | 300 | 400 500 | 600 700 | 1000.00 |
| 30.000 40 50 No. Mk. F | Reading Level MHz dBuV | | Measure- ment | 400 500 Limit dBuV/m | 600 700 Over | |
| 30.000 40 50 No. Mk. F | Reading req. Level | Correct Factor | Measure- ment | Limit | Over | Detector peal |
| No. Mk. F | Reading req. Level | Correct Factor | Measure- ment dBuV/m | Limit dBuV/m | Over | Detecto |
| No. Mk. F No. 1 * 36.0 2 59.8 | Reading Level MHz dBuV 0007 53.40 8588 56.48 | Correct Factor dB/m -17.44 -24.19 | Measure- ment dBuV/m 35.96 32.29 | Limit dBuV/m 40.00 40.00 | Over dB -4.04 -7.71 | Detection peal peal |
| No. Mk. F No. 1 * 36.0 2 59.8 3 95.7 | Reading Level MHz dBuV 0007 53.40 8588 56.48 7622 58.71 | Correct Factor dB/m -17.44 -24.19 -21.76 | Measure- ment dBuV/m 35.96 32.29 36.95 | Limit dBuV/m 40.00 40.00 43.50 | Over dB -4.04 -7.71 -6.55 | Detection peal peal peal |
| No. Mk. F No. Mk. F 1 * 36.0 2 59.8 3 95.7 4 99.8 | Reading Level MHz dBuV 0007 53.40 8588 56.48 7622 58.71 5279 58.36 | Correct Factor dB/m -17.44 -24.19 -21.76 -21.41 | Measure- ment dBuV/m 35.96 32.29 36.95 36.95 | Limit dBuV/m 40.00 40.00 43.50 43.50 | Over dB -4.04 -7.71 -6.55 -6.55 | peal peal peal |
| No. Mk. F 1 * 36.0 2 59.8 3 95.7 4 99.8 5 143. | Reading Level MHz dBuV 0007 53.40 8588 56.48 7622 58.71 | Correct Factor dB/m -17.44 -24.19 -21.76 | Measure- ment dBuV/m 35.96 32.29 36.95 | Limit dBuV/m 40.00 40.00 43.50 | Over dB -4.04 -7.71 -6.55 | Detection peal peal peal |



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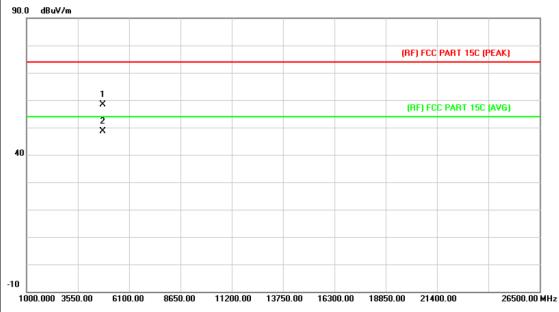
| EUT: | | | N | eybo | oar | d | | | | 673 | Mod | del I | Nar | ne : | | | B45 | 5 | 4 | |
|---------------------------------|-------------|----------------------|--------------------|---------------------------------|-----|--|--------------------------|--------|--|---------------|-------------------|----------------------------|---------|----------------------------------|---------------------|---------|----------------------------------|-----------------------------------|----------|----------------------|
| Tempe | ratur | e: | 2 | 5℃ | | | 1 | | | | Rela | ative | Hu | mid | ity: | | 55% | 6 | | |
| Test Vo | ltage |) : | D | C 3. | .7V | | | | | To the second | N. | | | | 1 | n | W | | | |
| Ant. Po | ol. | | V | ertic | al | | | | 61/1 | آلي | r de | | A | | | | | 1 | | 311 |
| Test Mode: TX GFSK Mode 2402MHz | | | | | | | | | | | | | | | | | | | | |
| Remarl | k: | | 0 | nly | wo | rse | case | is re | eported | | W | | | | | | | 100 | | (|
| 80.0 dB | uV/m | | | | | | | | | | | | | | | | | | | _ |
| 30 0 | lu. l | 2 | 3 | <u> </u> | | | 4 | | 5 | 6 | | | | (BF)I | FCC 1 | 5C 3 | | diation rgin -6 | | |
| 30 (10) | Wally Wally | | WV | M. H. | wy | | V-TIMI M | VIAM | | | hwy (| | Maydela | WINNE | بالداميل | سالمامر | _{JUNI} AL III. | es de Nobles | ng/wat/M | hirat |
| 30.000 | 40 | 50 | | SO 70 | | Rea | ading | | (MHz) | t r | Meas | | - | 400 | 5 | 500 | 600 | 700 | | |
| 30.000 | Ψ | 50 F | re | q. | | Rea Le | vel | | Correc | t r | me | sure ent | - | 400 | 5 it | 500 | 600 Ove | 700 er | 100 | 00.000 |
| 30.000 No. | 40 Mk. | 50 F | Free | q. z | | Rea Le | vel Bu∀ | | Correct Facto | t I | me dBu | sure ent | - | 400 Lim | it V/m | 500 | 600 Ove | 700 er | 100 | 00.000 |
| 20 30.000 No. | 40 | 50 F | Free | q. z 91 | | Rea Le | vel BuV .65 | - | Correct Facto dB/m 15.60 | t r | dBui | sureent | - | 400 Lim dBu\ | it //m | 600 | 600 Ove | 700 er 3 | Det po | oo.ooc |
| No. | 40 Mk. | 50 F I 32. | Free MHz .97 | q. z 91 | | Rea Le dB 51 | vel BuV .65 | - | Correct Facto dB/m 15.60 21.94 | t r | 36. | sureent N/m .05 | - | 400 Lim dBu\ 40. | it //m 00 00 | 500 | 600 OV6 dE -3.9 | 700 er 3 | Det po | 00.000 eak |
| No. | 40 Mk. | 50 F | Free MHz .97 | q. z 91 | | Rea Le dB 51 | vel BuV .65 | - | Correct Facto dB/m 15.60 | t r | 36. | sureent | - | 400 Lim dBu\ | it //m 00 00 | 500 | 600 Ove | 700 er 3 | Det po | oo.ooc eak eak |
| No. | 40 Mk. | 50 F I 32. | 97: .90: | q. z 91 04 88 | | Rea Le ⁻ dB 51 55 | vel BuV .65 | - | Correct Facto dB/m 15.60 21.94 | t r | 36. 33. | sureent N/m .05 | - | 400 Lim dBu\ 40. | it ///m 00 00 00 | 500 | 600 OV6 dE -3.9 | 700 er 95 63 | Det po | 00.000 eak |
| No. | 40 Mk. | 500 FF 132.44.59. | 97: 90: 85: | q. 2 91 04 88 79 | | Rea Le ^o 51 55 58 | vel 3uV .65 .31 | - - | Correct Facto dB/m 15.60 21.94 24.19 | t r | 36. 33. 34. | sure- ent .05 .37 | - | 400 Lim dBu' 40. 40. | it ///m 00 00 00 50 | 500 | 600 OV6 dE -3.9 -6.0 | 700 er 95 63 70 25 | Det po | 00.000 eak eak |



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Above 1GHz(Only worse case is reported)

| EUT: | Keyboard | Model Name : | B45 |
|---------------|---|------------------------|-----------------|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | 18.0 |
| Ant. Pol. | Horizontal | | |
| Test Mode: | TX GFSK Mode 2402MHz | | LINE TO SERVICE |
| Remark: | No report for the emission wh prescribed limit. | ich more than 10 dB be | elow the |

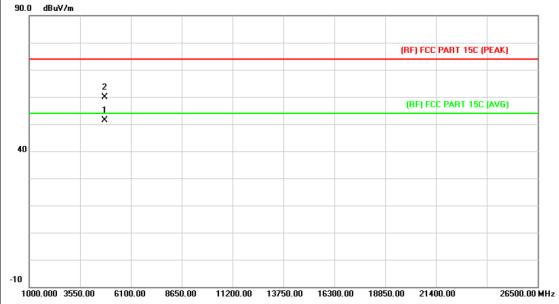


| N | o. M | k. Freq. | | | Measure- ment | Limit | Over | |
|---|------|----------|-------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4803.460 | 44.96 | 13.44 | 58.40 | 74.00 | -15.60 | peak |
| 2 | * | 4803.838 | 35.27 | 13.44 | 48.71 | 54.00 | -5.29 | AVG |



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| Keyboard | Model Name : | B45 |
|--|---|--|
| 25℃ | Relative Humidity: | 55% |
| DC 3.7V | | 113 |
| Vertical | | |
| TX GFSK Mode 2402MHz | | THE PARTY OF THE P |
| No report for the emission prescribed limit. | which more than 10 dE | 3 below the |
| | 25°C DC 3.7V Vertical TX GFSK Mode 2402MHz No report for the emission | 25°C Relative Humidity: DC 3.7V Vertical TX GFSK Mode 2402MHz No report for the emission which more than 10 dB |

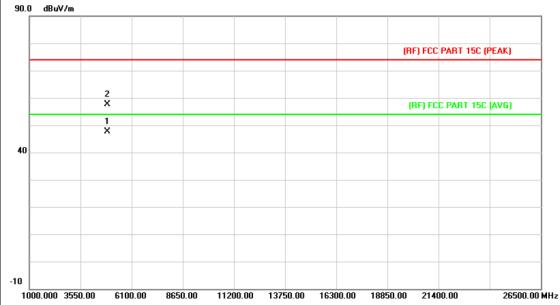


| No |). N | lk. Freq | • | Correct Factor | Measure- ment | Limit | Over | |
|----|------|----------|----------|-------------------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4804.00 | | | 51.34 | 54.00 | -2.66 | AVG |
| 2 | | 4804.18 | 83 46.40 | 13.44 | 59.84 | 74.00 | -14.16 | peak |



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| EUT: | Keyboard | Model Name : | B45 |
|---------------|--|-----------------------|---|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | 733 |
| Ant. Pol. | Horizontal | | |
| Test Mode: | TX GFSK Mode 2441MHz | | LINE OF THE PARTY |
| Remark: | No report for the emission prescribed limit. | which more than 10 dE | 3 below the |
| 00.0 10.44 | | | |

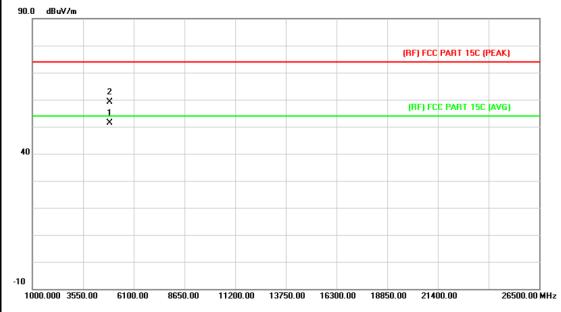


| No | o. Mk | . Freq. | Reading Level | | Measure- ment | Limit | Over | |
|----|-------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4882.201 | 33.64 | 13.90 | 47.54 | 54.00 | -6.46 | AVG |
| 2 | | 4883.377 | 43.67 | 13.92 | 57.59 | 74.00 | -16.41 | peak |



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| EUT: | Keyboard | Model Name : | B45 | | | | |
|-------------------|--|--------------------|-----------------|--|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | | |
| Test Voltage: | DC 3.7V | 0 | 33 | | | | |
| Ant. Pol. | Vertical | | | | | | |
| Test Mode: | TX GFSK Mode 2441MHz | | LINE TO SERVICE | | | | |
| Remark: | No report for the emission which more than 10 dB below the | | | | | | |
| prescribed limit. | | | | | | | |
| | | | | | | | |

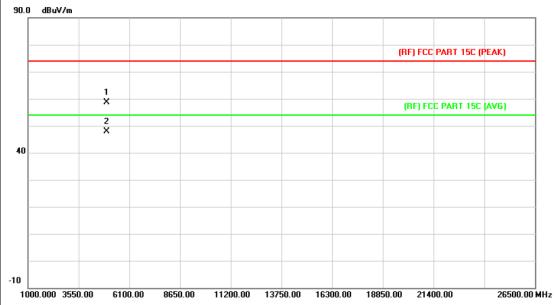


| No | . Mk | . Freq. | Reading Level | | Measure- ment | Limit | Over | |
|----|------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∨ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4881.808 | 37.56 | 13.90 | 51.46 | 54.00 | -2.54 | AVG |
| 2 | | 4883.413 | 45.12 | 13.92 | 59.04 | 74.00 | -14.96 | peak |



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| EUT: | Keyboard | Model Name : | B45 |
|---------------|--|------------------------|----------|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | 33.9 |
| Ant. Pol. | Horizontal | | |
| Test Mode: | TX GFSK Mode 2480MHz | | LINE . |
| Remark: | No report for the emission w prescribed limit. | nich more than 10 dB b | elow the |

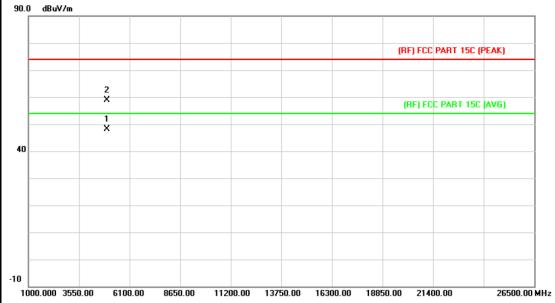


| No | . Mk. | Freq. | Reading Level | | Measure- ment | Limit | Over | |
|----|-------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4960.786 | 44.24 | 14.36 | 58.60 | 74.00 | -15.40 | peak |
| 2 | * | 4961.167 | 33.62 | 14.38 | 48.00 | 54.00 | -6.00 | AVG |



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| EUT: | Keyboard | Model Name : | B45 | | | | | | |
|--|----------------------|--------------------|------------|--|--|--|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | | | | |
| Test Voltage: | DC 3.7V | DC 3.7V | | | | | | | |
| Ant. Pol. | Vertical | | | | | | | | |
| Test Mode: | TX GFSK Mode 2480MHz | | - Chillian | | | | | | |
| Remark: No report for the emission which more than 10 dB below the prescribed limit. | | | | | | | | | |

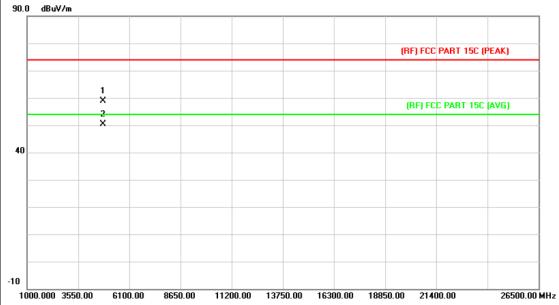


| No | o. Mk | . Freq. | Reading Level | | Measure- ment | Limit | Over | |
|----|-------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4959.778 | 33.74 | 14.36 | 48.10 | 54.00 | -5.90 | AVG |
| 2 | | 4960.016 | 44.50 | 14.36 | 58.86 | 74.00 | -15.14 | peak |



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| EUT: | Keyboard | Model Name : | B45 | | | | |
|---------------|-------------------------|--------------------|-----------------|--|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | | |
| Test Voltage: | Voltage: DC 3.7V | | | | | | |
| Ant. Pol. | Horizontal | | | | | | |
| Test Mode: | TX π /4-DQPSK Mode 2402 | MHz | LINE TO SERVICE | | | | |
| Remark: | below the | | | | | | |

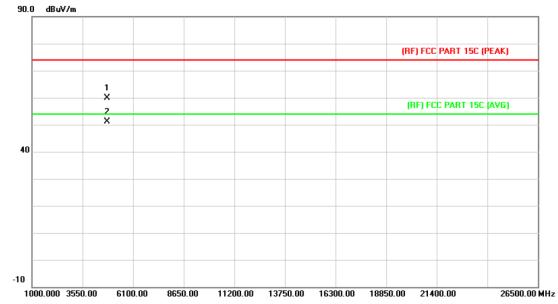


| No | o. Mk | . Freq. | _ | Correct Factor | Measure- ment | Limit | Over | |
|----|-------|----------|-------|-------------------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4803.715 | 45.45 | 13.44 | 58.89 | 74.00 | -15.11 | peak |
| 2 | * | 4803.943 | 36.88 | 13.44 | 50.32 | 54.00 | -3.68 | AVG |



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| Keyboard | Model Name : | B45 | | | | |
|--|---|--|--|--|--|--|
| 25℃ | Relative Humidity: | 55% | | | | |
| ge: DC 3.7V | | | | | | |
| Vertical | | | | | | |
| TX π /4-DQPSK Mode 240 |)2MHz | CALLES TO | | | | |
| No report for the emission which more than 10 dB below the prescribed limit. | | | | | | |
| | 25°C DC 3.7V Vertical TX π /4-DQPSK Mode 240 No report for the emission | 25°C Relative Humidity: DC 3.7V Vertical TX π /4-DQPSK Mode 2402MHz No report for the emission which more than 10 dB | | | | |

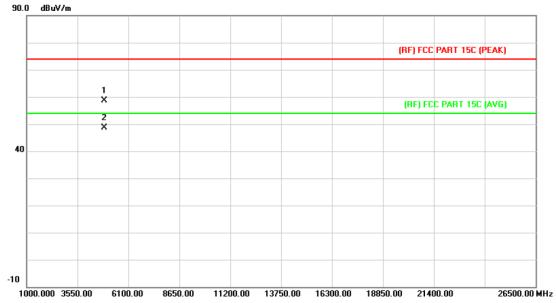


| No | . Mk | Freq. | Reading Level | | Measure- ment | Limit | Over | |
|----|------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4803.666 | 46.40 | 13.44 | 59.84 | 74.00 | -14.16 | peak |
| 2 | * | 4803.886 | 37.81 | 13.44 | 51.25 | 54.00 | -2.75 | AVG |



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| EUT: | Keyboard | Model Name : | B45 |
|---------------|--|----------------------|-----------|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | 1 | 130 |
| Ant. Pol. | Horizontal | | |
| Test Mode: | TX π /4-DQPSK Mode 2441 | MHz | - CALLER |
| Remark: | No report for the emission was prescribed limit. | hich more than 10 dB | below the |

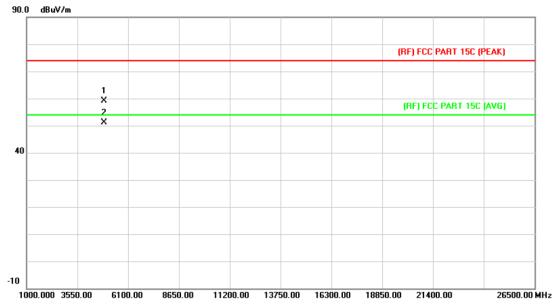


| No | o. Mk | . Freq. | Reading Level | | Measure- ment | Limit | Over | |
|----|-------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4881.849 | 44.71 | 13.90 | 58.61 | 74.00 | -15.39 | peak |
| 2 | * | 4881.849 | 34.72 | 13.90 | 48.62 | 54.00 | -5.38 | AVG |



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| EUT: | Keyboard | Model Name : | B45 | | | | | | |
|---------------|--|--------------|----------|--|--|--|--|--|--|
| Temperature: | 25℃ Relative Humidity: 55% | | | | | | | | |
| Test Voltage: | DC 3.7V | DC 3.7V | | | | | | | |
| Ant. Pol. | Vertical | | | | | | | | |
| Test Mode: | TX π /4-DQPSK Mode 2441 | MHz | THUE THE | | | | | | |
| Remark: | No report for the emission which more than 10 dB below the prescribed limit. | | | | | | | | |

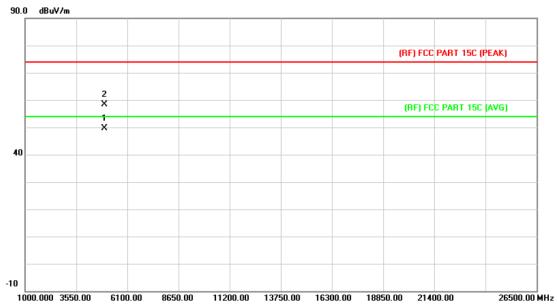


| No | o. Mk | . Freq. | Reading Level | | Measure- ment | Limit | Over | |
|----|-------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4881.903 | 45.22 | 13.90 | 59.12 | 74.00 | -14.88 | peak |
| 2 | * | 4882.207 | 37.16 | 13.90 | 51.06 | 54.00 | -2.94 | AVG |



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| EUT: | Keyboard Model Name : B45 | | | | | | | | |
|---------------|--|---------|-----------------|--|--|--|--|--|--|
| Temperature: | 25°C Relative Humidity: 55% | | | | | | | | |
| Test Voltage: | DC 3.7V | DC 3.7V | | | | | | | |
| Ant. Pol. | Horizontal | | | | | | | | |
| Test Mode: | TX π /4-DQPSK Mode 2480M | lHz | LINE TO SERVICE | | | | | | |
| Remark: | No report for the emission which more than 10 dB below the prescribed limit. | | | | | | | | |

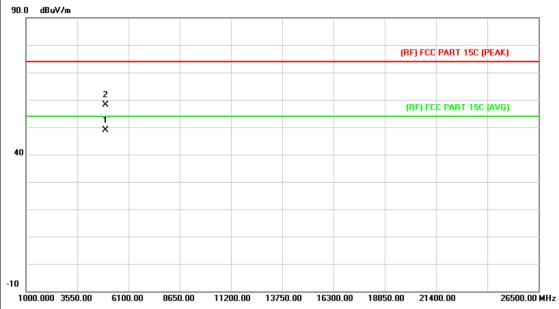


| N | o. Mk | . Freq. | Reading Level | | Measure- ment | Limit | Over | |
|---|-------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4959.573 | 35.32 | 14.36 | 49.68 | 54.00 | -4.32 | AVG |
| 2 | | 4959.593 | 43.98 | 14.36 | 58.34 | 74.00 | -15.66 | peak |



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| EUT: | Keyboard | Keyboard Model Name : B4 | | | | | | | |
|---------------|--|--------------------------|-----------------|--|--|--|--|--|--|
| Temperature: | 25℃ | C Relative Humidity: 55% | | | | | | | |
| Test Voltage: | DC 3.7V | DC 3.7V | | | | | | | |
| Ant. Pol. | Vertical | Vertical | | | | | | | |
| Test Mode: | TX π /4-DQPSK Mode 2480N | 1Hz | LINE TO SERVICE | | | | | | |
| Remark: | No report for the emission who prescribed limit. | nich more than 10 dB b | elow the | | | | | | |
| 00.0 40.44 | | | | | | | | | |



| N | o. MI | k. Freq. | Reading Level | | Measure- ment | Limit | Over | |
|---|-------|----------|------------------|-------|------------------|--------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4959.678 | 34.52 | 14.36 | 48.88 | 54.00 | -5.12 | AVG |
| 2 | | 4959.942 | 43.85 | 14.36 | 58.21 | 74.00 | -15.79 | peak |



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6. Restricted Bands Requirement

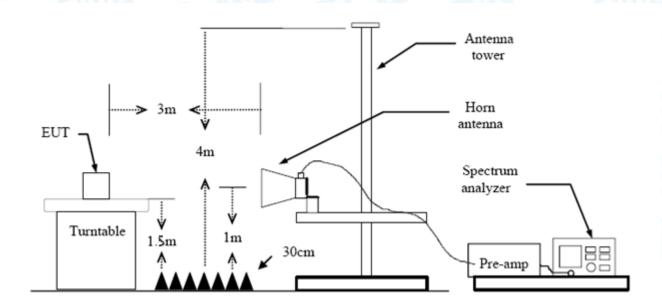
6.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

6.1.2 Test Limit

| Restricted Frequency | Distance of | 3m (dBuV/m) |
|----------------------|-------------|-------------|
| Band (MHz) | Peak | Average |
| 2310 ~2390 | 74 | 54 |
| 2483.5 ~2500 | 74 | 54 |

6.2 Test Setup



6.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.



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(3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.

- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with AVG Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

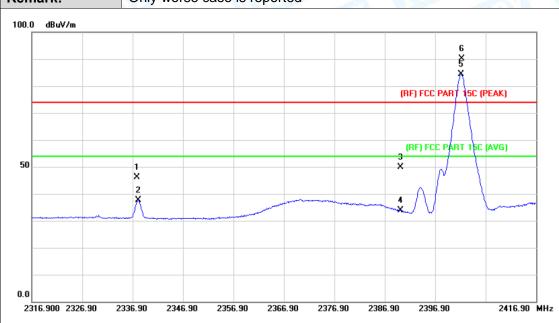
All restriction bands have been tested, only the worst case is reported.



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(1) Radiation Test

| EUT: | Keyboard | Model Name : | B45 | | | | | |
|---------------|-----------------------------|--------------------|---------------------|--|--|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | | | |
| Test Voltage: | DC 3.7V | DC 3.7V | | | | | | |
| Ant. Pol. | Horizontal | | THE PERSON NAMED IN | | | | | |
| Test Mode: | TX GFSK Mode 2402MHz | | | | | | | |
| Remark: | Only worse case is reported | | | | | | | |

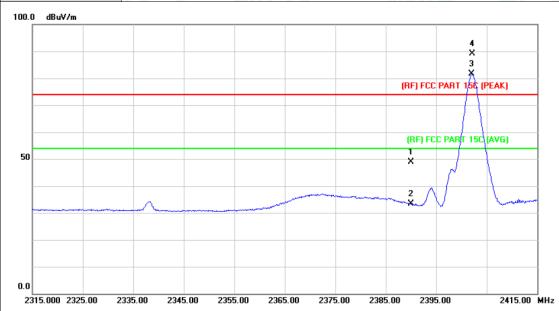


| N | o. Mk | c. Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | |
|---|-------|----------|------------------|-------------------|------------------|-------------|-----------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2337.800 | 45.59 | 0.55 | 46.14 | 74.00 | -27.86 | peak |
| 2 | | 2338.100 | 37.13 | 0.56 | 37.69 | 54.00 | -16.31 | AVG |
| 3 | | 2390.000 | 49.17 | 0.77 | 49.94 | 74.00 | -24.06 | peak |
| 4 | | 2390.000 | 33.20 | 0.77 | 33.97 | 54.00 | -20.03 | AVG |
| 5 | * | 2402.000 | 83.58 | 0.82 | 84.40 | Fundamental | Frequency | AVG |
| 6 | Χ | 2402.200 | 89.33 | 0.82 | 90.15 | Fundamental | Frequency | peak |



Page: 35 of 67

| EUT: | Keyboard | Model Name : | B45 | | | | |
|---------------|-----------------------------|----------------------|-----------|--|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | | |
| Test Voltage: | DC 3.7V | DC 3.7V | | | | | |
| Ant. Pol. | Vertical | | S. France | | | | |
| Test Mode: | TX GFSK Mode 2402MHz | TX GFSK Mode 2402MHz | | | | | |
| Remark: | Only worse case is reported | and s | | | | | |

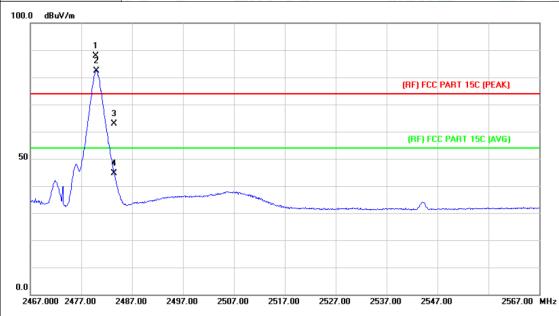


| No. | Mk | . Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | |
|-----|----|----------|------------------|-------------------|------------------|-------------|-----------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2390.000 | 48.07 | 0.77 | 48.84 | 74.00 | -25.16 | peak |
| 2 | | 2390.000 | 32.62 | 0.77 | 33.39 | 54.00 | -20.61 | AVG |
| 3 | * | 2402.000 | 80.80 | 0.82 | 81.62 | Fundamental | Frequency | AVG |
| 4 | Χ | 2402.200 | 88.22 | 0.82 | 89.04 | Fundamental | Frequency | peak |



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| EUT: | Keyboard | Model Name : | B45 | | | |
|---------------|-----------------------------|--------------------|-------|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | |
| Test Voltage: | DC 3.7V | | | | | |
| Ant. Pol. | Horizontal | | | | | |
| Test Mode: | TX GFSK Mode 2480 MHz | | | | | |
| Remark: | Only worse case is reported | | 3 ~ 0 | | | |

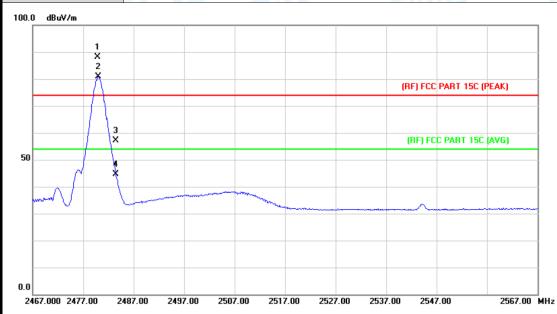


| No. Mk. Freq. | | Reading Level | Correct Factor | Measure- ment | Limit | Over | | |
|---------------|---|------------------|-------------------|------------------|--------|-----------------------|--------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | X | 2479.800 | 86.83 | 1.15 | 87.98 | Fundamental Frequency | | peak |
| 2 | * | 2480.000 | 81.32 | 1.15 | 82.47 | Fundamental Frequency | | AVG |
| 3 | | 2483.500 | 61.73 | 1.17 | 62.90 | 74.00 | -11.10 | peak |
| 4 | | 2483.500 | 43.52 | 1.17 | 44.69 | 54.00 | -9.31 | AVG |



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| EUT: | Keyboard | Model Name : | B45 |
|---------------|-----------------------------|--------------------|-----------------|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | 33 |
| Ant. Pol. | Vertical | | |
| Test Mode: | TX GFSK Mode 2480 MHz | | LINE TO SERVICE |
| Remark: | Only worse case is reported | | |

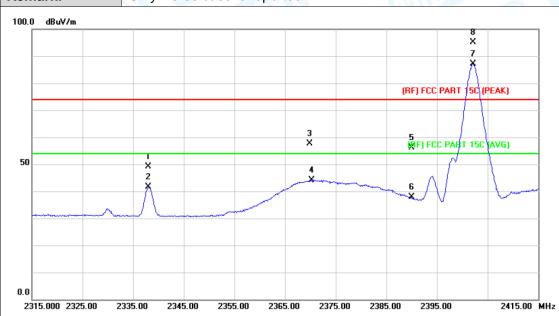


| No | . Mk | . Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | |
|----|------|----------|------------------|-------------------|------------------|------------|--------------|----------|
| | | MHz | dBu∨ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | X | 2479.800 | 87.00 | 1.15 | 88.15 | Fundamenta | al Frequency | peak |
| 2 | * | 2480.000 | 79.82 | 1.15 | 80.97 | Fundamenta | al Frequency | AVG |
| 3 | | 2483.500 | 55.92 | 1.17 | 57.09 | 74.00 | -16.91 | peak |
| 4 | | 2483.500 | 43.38 | 1.17 | 44.55 | 54.00 | -9.45 | AVG |



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| EUT: | Keyboard | Model Name : | B45 | | | |
|---------------|-----------------------------|-----------------------------|-----|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | |
| Test Voltage: | DC 3.7V | | | | | |
| Ant. Pol. | Horizontal | | | | | |
| Test Mode: | TX π /4-DQPSK Mode 2402MHz | | | | | |
| Remark: | Only worse case is reported | Only worse case is reported | | | | |

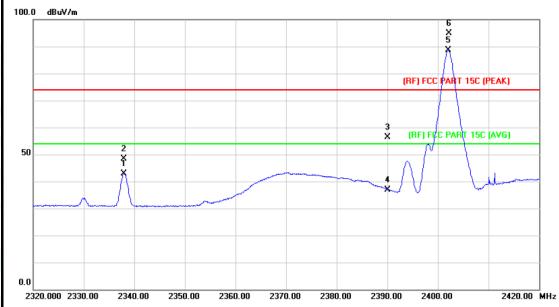


| No. | Mk | . Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | |
|-----|----|----------|------------------|-------------------|------------------|------------|--------------|----------|
| | | MHz | dBu∨ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2338.000 | 48.62 | 0.55 | 49.17 | 74.00 | -24.83 | peak |
| 2 | | 2338.000 | 40.99 | 0.55 | 41.54 | 54.00 | -12.46 | AVG |
| 3 | | 2369.800 | 56.85 | 0.68 | 57.53 | 74.00 | -16.47 | peak |
| 4 | | 2370.300 | 43.48 | 0.69 | 44.17 | 54.00 | -9.83 | AVG |
| 5 | | 2390.000 | 55.33 | 0.77 | 56.10 | 74.00 | -17.90 | peak |
| 6 | | 2390.000 | 37.03 | 0.77 | 37.80 | 54.00 | -16.20 | AVG |
| 7 | * | 2402.100 | 86.42 | 0.82 | 87.24 | Fundamenta | al Frequency | AVG |
| 8 | X | 2402.200 | 94.28 | 0.82 | 95.10 | Fundamenta | al Frequency | peak |



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| EUT: | Keyboard | Model Name : | B45 |
|---------------|-----------------------|--------------------|--------|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | |
| Ant. Pol. | Vertical | | |
| Test Mode: | TX π /4-DQPSK Mode | e 2402MHz | A HILL |
| Remark: | Only worse case is re | eported | |
| 100.0 dBuV/m | | | |
| | | 6 X | |
| | | × | |

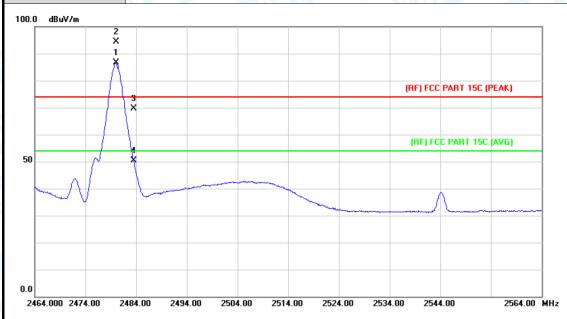


| No. | Mk | . Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | |
|-----|----|----------|------------------|-------------------|------------------|------------|-------------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2337.900 | 42.32 | 0.55 | 42.87 | 74.00 | -31.13 | peak |
| 2 | | 2337.900 | 47.91 | 0.55 | 48.46 | 74.00 | -25.54 | peak |
| 3 | | 2390.000 | 55.50 | 0.77 | 56.27 | 74.00 | -17.73 | peak |
| 4 | | 2390.000 | 36.14 | 0.77 | 36.91 | 54.00 | -17.09 | AVG |
| 5 | * | 2402.100 | 87.87 | 0.82 | 88.69 | Fundamenta | l Frequency | AVG |
| 6 | Χ | 2402.200 | 94.02 | 0.82 | 94.84 | Fundamenta | l Frequency | peak |



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| EUT: | Keyboard | Model Name : | B45 | | | |
|---------------|-----------------------------|-----------------------------|-----|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | |
| Test Voltage: | DC 3.7V | Min I | 333 | | | |
| Ant. Pol. | Horizontal | | | | | |
| Test Mode: | TX π /4-DQPSK Mode 2480M | TX π /4-DQPSK Mode 2480MHz | | | | |
| Remark: | Only worse case is reported | Only worse case is reported | | | | |

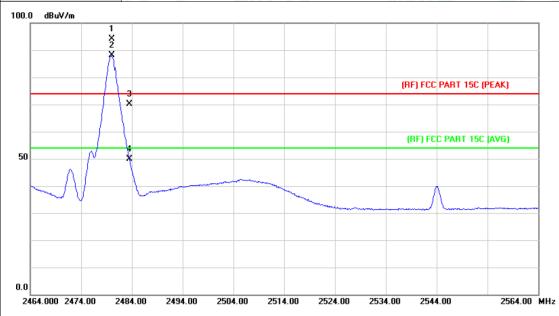


| No | . Mk | . Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | |
|----|------|----------|------------------|-------------------|------------------|------------|-------------|----------|
| | | MHz | dBu∨ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 2480.000 | 85.53 | 1.15 | 86.68 | Fundamenta | l Frequency | AVG |
| 2 | X | 2480.100 | 93.33 | 1.15 | 94.48 | Fundamenta | l Frequency | peak |
| 3 | | 2483.500 | 68.57 | 1.17 | 69.74 | 74.00 | -4.26 | peak |
| 4 | | 2483.500 | 49.10 | 1.17 | 50.27 | 54.00 | -3.73 | AVG |



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| EUT: | Keyboard | Model Name : | B45 | | | |
|---------------|-----------------------------------|--------------------|-----|--|--|--|
| Temperature: | 25℃ | Relative Humidity: | 55% | | | |
| Test Voltage: | DC 3.7V | | | | | |
| Ant. Pol. | Vertical | | | | | |
| Test Mode: | TX π /4-DQPSK Mode 2480MHz | | | | | |
| Remark: | mark: Only worse case is reported | | | | | |



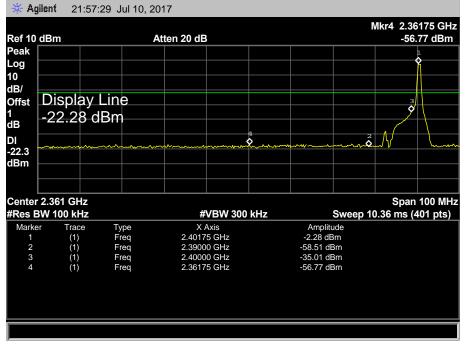
| No | o. Mk | . Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | |
|----|-------|----------|------------------|-------------------|------------------|------------|-------------|----------|
| | | MHz | dBu∀ | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | Χ | 2480.000 | 93.08 | 1.15 | 94.23 | Fundamenta | I Frequency | peak |
| 2 | * | 2480.000 | 86.96 | 1.15 | 88.11 | Fundamenta | I Frequency | AVG |
| 3 | | 2483.500 | 69.01 | 1.17 | 70.18 | 74.00 | -3.82 | peak |
| 4 | | 2483.500 | 48.64 | 1.17 | 49.81 | 54.00 | -4.19 | AVG |

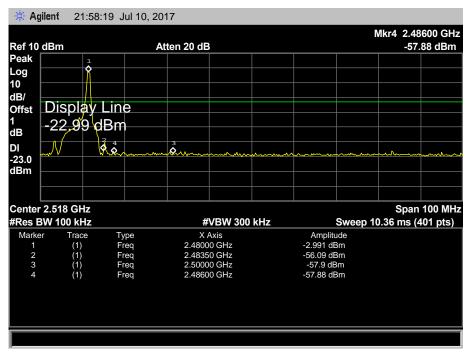


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(2) Conducted Test

| EUT: | Keyboard | Model Name : | B45 | | |
|--|-------------------------------------|------------------------|--------------|--|--|
| Temperature: | 25℃ | Relative Humidity: 55% | | | |
| Test Voltage: | DC 3.7V | | | | |
| Test Mode: | TX GFSK Mode 2402MHz/24 | 80 MHz | CHILL STREET | | |
| Remark: | Remark: Only worse case is reported | | | | |
| ※ Agilent 21:57:29 Jul 10, 2017 | | | | | |

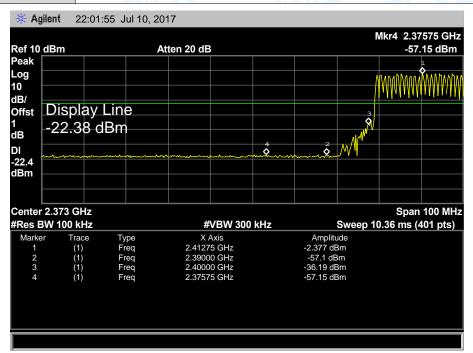


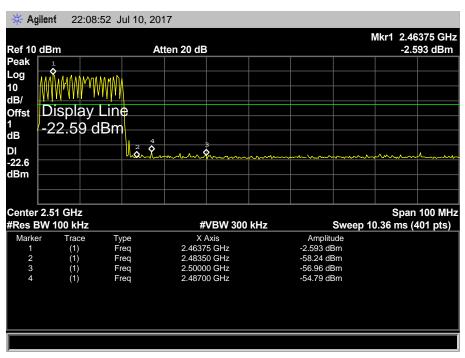




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| EUT: | Keyboard | Model Name : | B45 |
|---------------|-----------------------------|--------------------|-------------|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | 189 |
| Test Mode: | GFSK Hopping Mode | | |
| Remark: | Only worse case is reported | | CALL STREET |

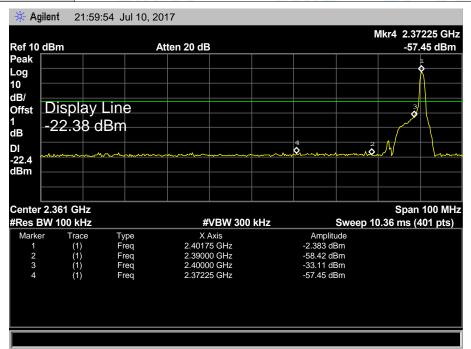


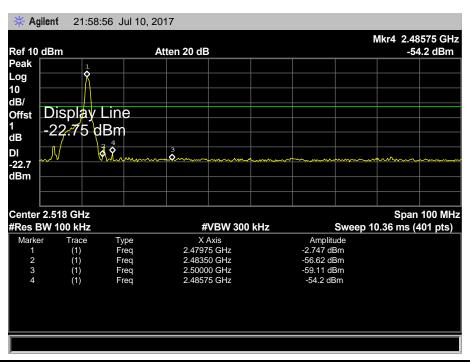




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| EUT: | Keyboard | Model Name : | B45 |
|---------------|-------------------------------------|--------------------|-----|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | |
| Test Mode: | TX π /4-DQPSK Mode 2402MHz/2480 MHz | | |
| Remark: | Only worse case is reported | | |

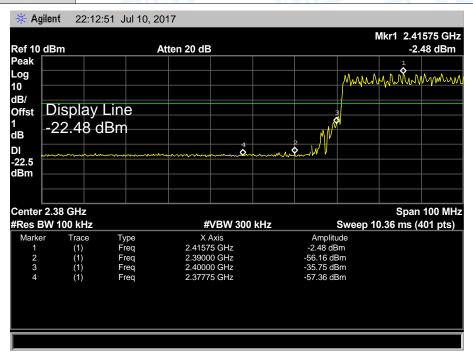


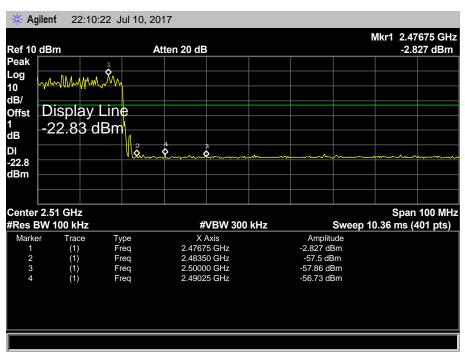




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| EUT: | Keyboard | Model Name : | B45 |
|---------------|-----------------------------|--------------------|--------------|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | 33 |
| Test Mode: | π /4-DQPSK Hopping Mode | | |
| Remark: | Only worse case is reported | | CHILL STREET |







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7. Number of Hopping Channel

7.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.247 (a)(1)

6.1.2 Test Limit

| Section | Test Item | Limit |
|---------|------------------------------|-------|
| 15.247 | Number of Hopping Channel | >15 |

7.2 Test Setup



7.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting: RBW=100 KHz, VBW=100 KHz, Sweep time= Auto.

7.4 EUT Operating Condition

The EUT was set to the Hopping Mode by the Customer.

7.5 Test Data



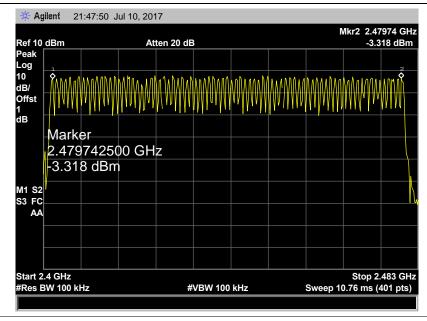
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| EUT: | Keyboard | Model Name : | B45 |
|---------------|----------|--------------------|-----|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | nn - M | 333 |

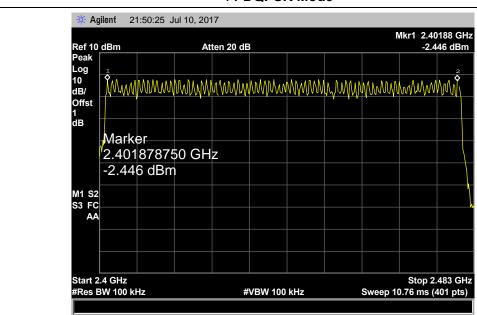
Test Mode: Hopping Mode

| Frequency Range | Quantity of Hopping Channel | Limit |
|-------------------|-----------------------------|-------|
| 2402111- 2400111- | 79 | >15 |
| 2402MHz~2480MHz | 79 | >15 |

GFSK Mode



π /4-DQPSK Mode





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8. Average Time of Occupancy

8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247 (a)(1)

8.1.2 Test Limit

| Section | Test Item | Limit |
|-----------------------|-----------------|---------|
| 15.247(a)(1)/ RSS-210 | Average Time of | 0.4.000 |
| Annex 8(A8.1d) | Occupancy | 0.4 sec |

8.2 Test Setup



8.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting: RBW=1MHz, VBW=1MHz.
- (3) Use video trigger with the trigger level set to enable triggering only on full pulses.
- (4) Sweep Time is more than once pulse time.
- (5) Set the center frequency on any frequency would be measure and set the frequency span to zero.
- (6) Measure the maximum time duration of one single pulse.
- (7) Set the EUT for packet transmitting.
- (8) Measure the maximum time duration of one single pulse.

8.4 EUT Operating Condition

The average time of occupancy on any channel within the Period can be calculated with formulas:

 $\{Total \ of \ Dwell\} = \{Pulse \ Time\} * (1600 / X) / \{Number \ of \ Hopping \ Frequency\} * \{Period\} = 0.4s * \{Number \ of \ Hopping \ Frequency\}$

Note: X=2 or 4 or 6 (1DH1=2, 1DH3=4, 1DH5=6. 2DH1=2, 2DH3=4, 2DH5=6. 3DH1=2,3DH3=4, 3DH5=6)

The lowest, middle and highest channels are selected to perform testing to record the dwell time of each occupation measured in this channel, which is called Pulse Time here.

The EUT was set to the Hopping Mode by the Customer.



CHT.

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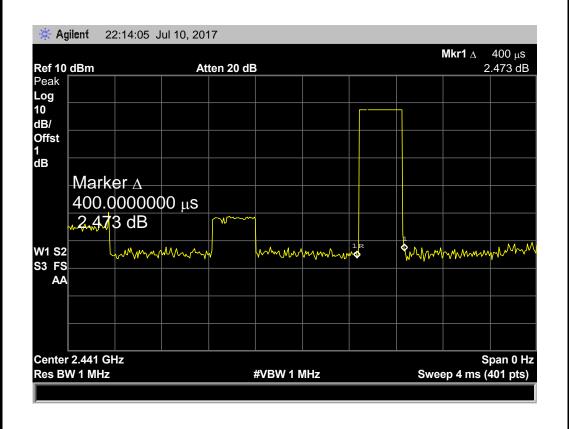
8.5 Test Data

| EUT: | | Key | board | Me | odel Name : | B45 | 130 |
|---------|--------|------|--------------|----------------|------------------|-------|--------|
| Temper | ature: | 25°C | | Re | lative Humidity: | 55% | |
| Test Vo | Itage: | DC | 3.7V | MILL | | | |
| Test Mo | de: | Hop | ping Mode (G | SFSK) | WIII DE | A W | Was a |
| Test | Chan | nel | Pulse | Total of Dwell | Period Time | Limit | Popult |
| Mode | (MH | z) | Time (ms) | (ms) | (s) | (ms) | Result |

| Test | Channel | Pulse | Total of Dwell | Period Time | Limit | Result |
|------|---------|-----------|----------------|-------------|-------|--------|
| Mode | (MHz) | Time (ms) | (ms) | (s) | (ms) | Result |
| 1DH1 | 2441 | 0.400 | 128.00 | 31.60 | 400 | PASS |
| 1DH3 | 2441 | 1.680 | 268.80 | 31.60 | 400 | PASS |
| 1DH5 | 2441 | 2.940 | 313.60 | 31.60 | 400 | PASS |

¹DH1 Total of Dwell= Pulse Time*(1600/2)*31.6/79

GFSK Hopping Mode 1DH1

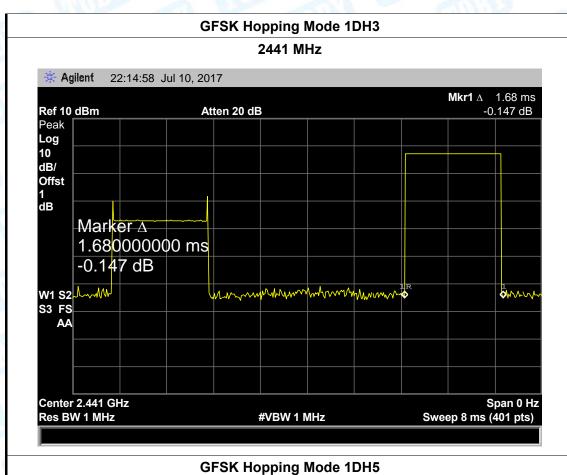


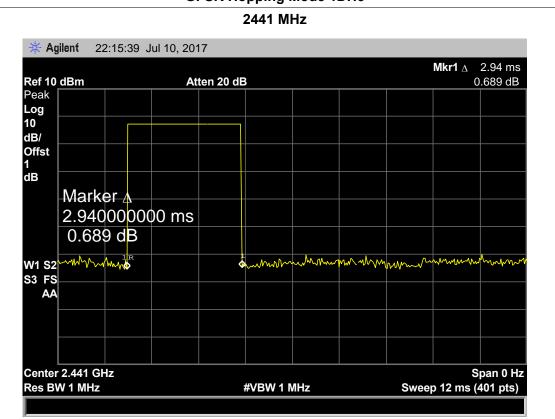
¹DH3 Total of Dwell= Pulse Time*(1600/4)*31.6/79

¹DH5 Total of Dwell= Pulse Time*(1600/6)*31.6/79



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| Temperature. | 23 0 | Relative Hullilaity. | 3376 |
|--------------|----------|----------------------|------|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| EUT: | Keyboard | Model Name : | B45 |

Test Voltage: DC 3.7V

Test Mode: Hopping Mode (π /4-DQPSK)

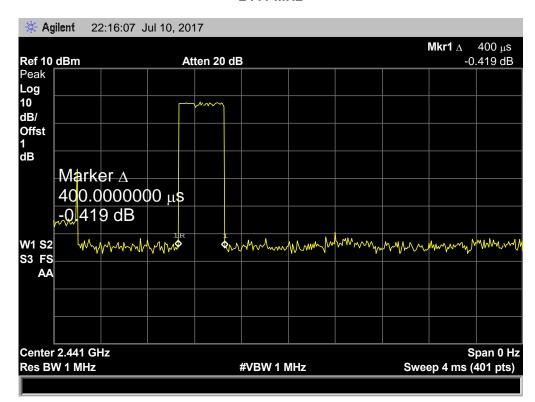
| Test | Channel | Pulse | Total of Dwell | Period Time | Limit | Popult |
|------|---------|-----------|----------------|-------------|-------|--------|
| Mode | (MHz) | Time (ms) | (ms) | (s) | (ms) | Result |
| 2DH1 | 2441 | 0.400 | 128.00 | 31.60 | 400 | PASS |
| 2DH3 | 2441 | 1.680 | 268.80 | 31.60 | 400 | PASS |
| 2DH5 | 2441 | 2.970 | 316.80 | 31.60 | 400 | PASS |

2DH1 Total of Dwell= Pulse Time*(1600/2)*31.6/79

2DH3 Total of Dwell= Pulse Time*(1600/4)*31.6/79

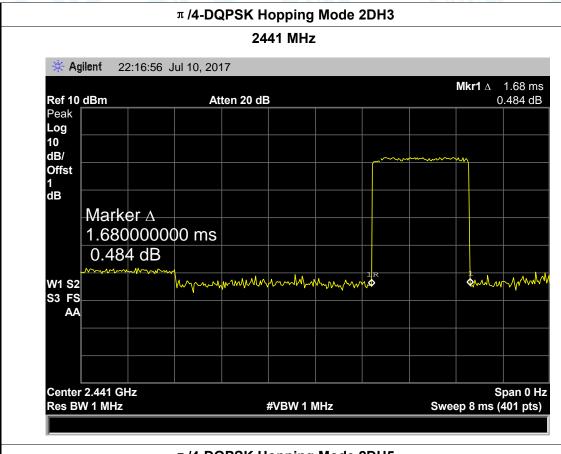
2DH5 Total of Dwell= Pulse Time*(1600/6)*31.6/79

π /4-DQPSK Hopping Mode 2DH1

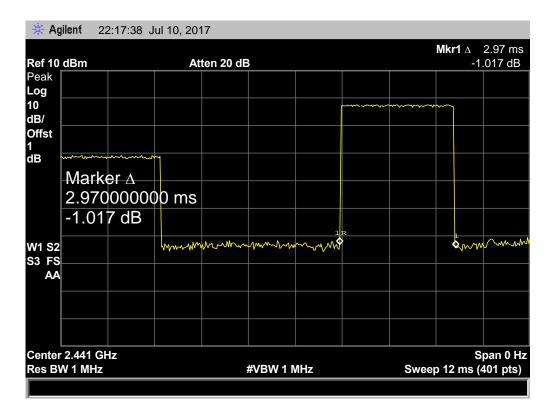




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 π /4-DQPSK Hopping Mode 2DH5





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9. Channel Separation and Bandwidth Test

9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.247

9.1.2 Test Limit

| Test Item | Limit | Frequency Range(MHz) |
|--------------------|---|----------------------|
| Bandwidth | <=1 MHz (20dB bandwidth) | 2400~2483.5 |
| Channel Separation | >25KHz or >two-thirds of the 20 dB bandwidth Which is greater | 2400~2483.5 |

9.2 Test Setup



9.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Channel Separation: RBW=30 kHz, VBW=100 kHz.

Bandwidth: RBW=30 kHz, VBW=100 kHz.

- (3) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
 - (4) Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:30 kHz, and Video Bandwidth:100 kHz. Sweep Time set auto.

9.4 EUT Operating Condition

The EUT was set to the Hopping Mode for Channel Separation Test and continuously transmitting for the Bandwidth Test.

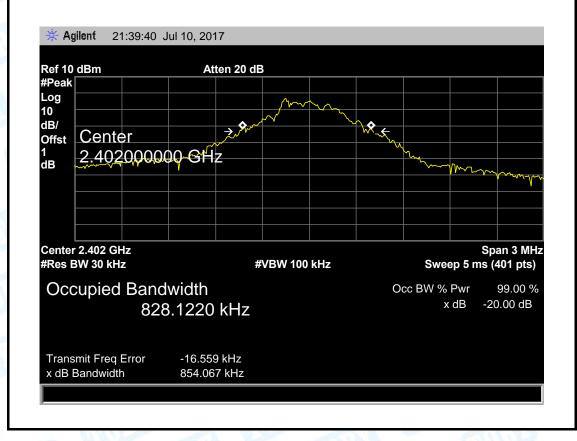


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9.5 Test Data

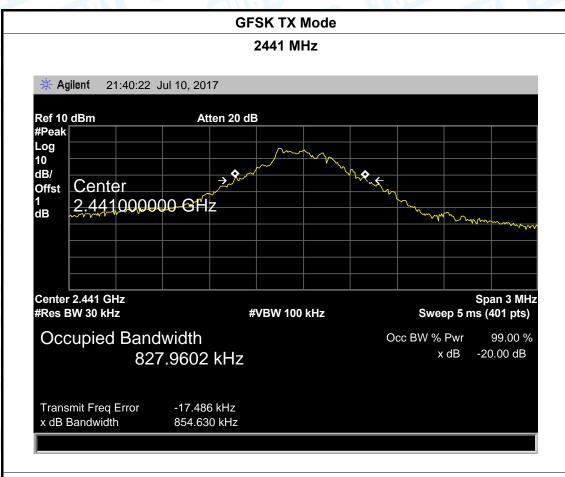
| EUT: | Key | /board | Model Name : | B45 |
|-------------------------|----------------|------------------|-------------------------|---------------------------------|
| Temperature: | 25℃ | | Relative Humidity: | 55% |
| Test Voltage: | DC | 3.7V | 70 | |
| Test Mode: | TX Mode (GFSK) | | CHILL STORY | 3 110 |
| Channel freque (MHz) | ncy | 99% OBW (kHz) | 20dB Bandwidth (kHz) | 20dB Bandwidth *2/3 (kHz) |
| 2402 | | 828.1220 | 854.067 | |
| | | | | |
| 2441 | | 827.9602 | 854.630 | |

GFSK TX Mode

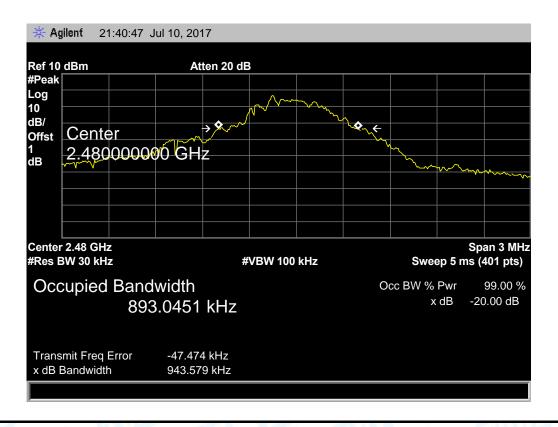




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GFSK TX Mode



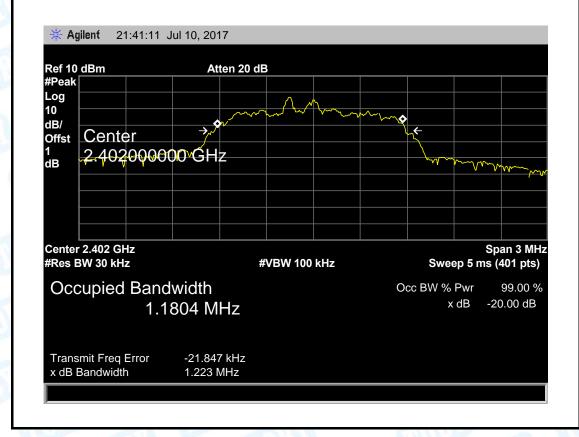


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| EUT: | Keyboard | Model Name : | B45 |
|---------------|---------------------|--------------------|-----|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | N CO | 133 |
| Test Mode: | TX Mode (π/4-DQPSK) | | |
| | | | |

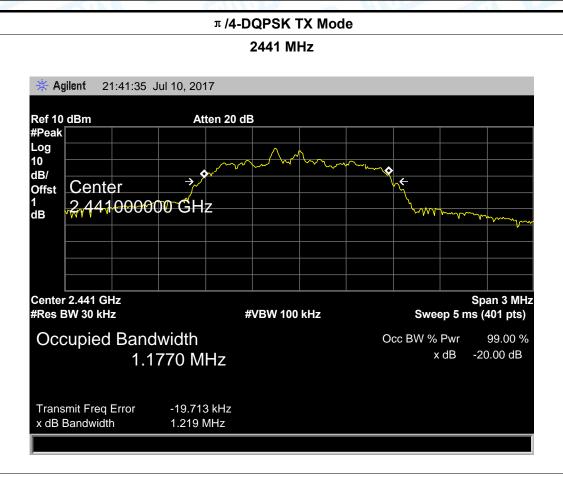
| Channel frequency (MHz) | 99% OBW (kHz) | 20dB Bandwidth (kHz) | 20dB Bandwidth *2/3 (kHz) |
|----------------------------|------------------|-------------------------|---------------------------------|
| 2402 | 1180.40 | 1223.00 | 815.33 |
| 2441 | 1177.00 | 1219.00 | 812.67 |
| 2480 | 1184.90 | 1232.00 | 821.33 |

π/4-DQPSK TX Mode

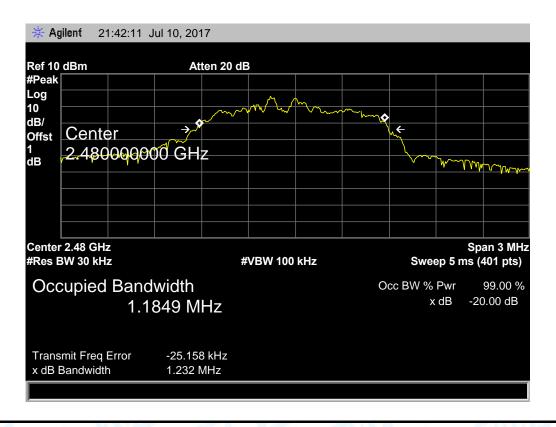




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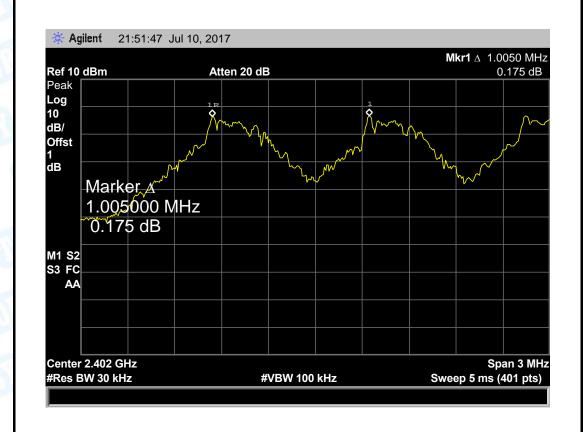
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| EUT: | Keyboard | Model Name : | B45 |
|---------------|----------|--------------------|--|
| Temperature: | 25℃ | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | | |
| | | | ALCOHOL: NAME OF PERSONS ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT ASSESSME |

Test Mode: Hopping Mode (GFSK)

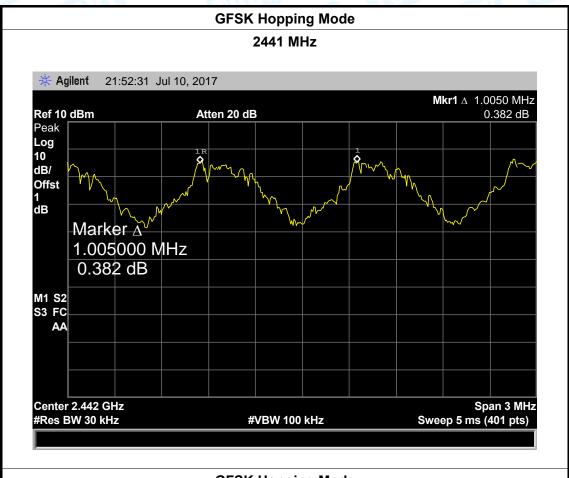
| Channel frequency | Separation Read Value | Separation Limit |
|-------------------|-----------------------|------------------|
| (MHz) | (kHz) | (kHz) |
| 2402 | 1005.0 | 854.067 |
| 2441 | 1005.0 | 854.630 |
| 2480 | 1005.0 | 943.579 |

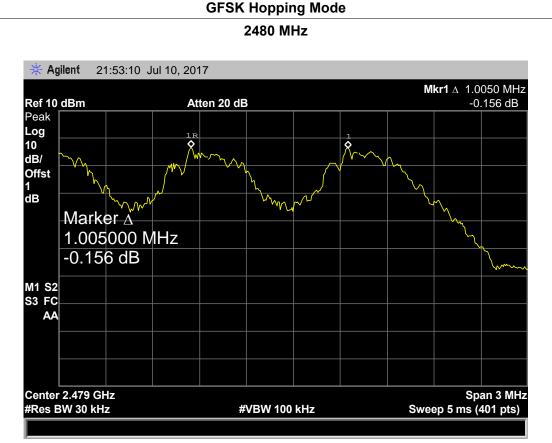
GFSK Hopping Mode





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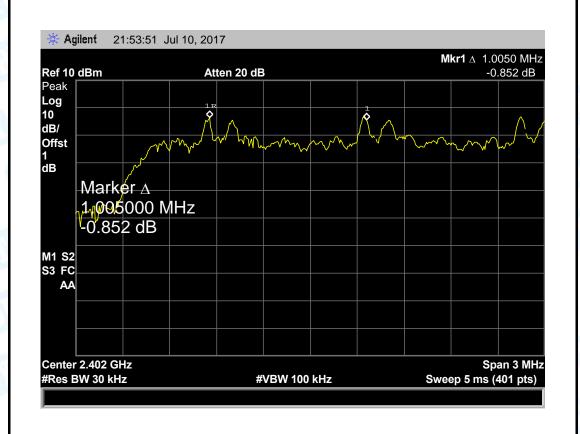
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| 55% |
|-----|
| |
| |

Test Mode: Hopping Mode (π /4-DQPSK)

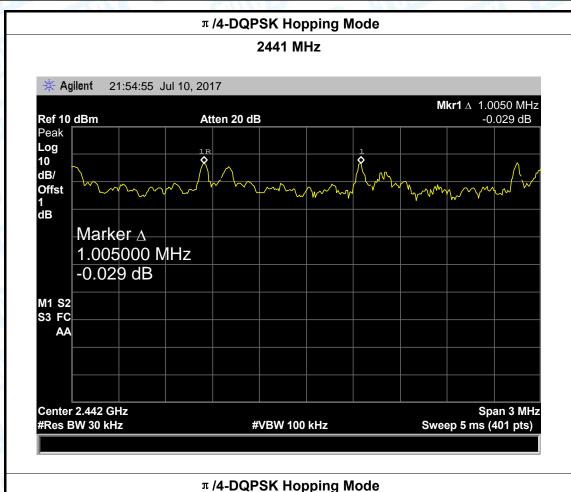
| Channel frequency | Separation Read Value | Separation Limit |
|-------------------|-----------------------|------------------|
| (MHz) | (kHz) | (kHz) |
| 2402 | 1005.0 | 815.33 |
| 2441 | 1005.0 | 812.67 |
| 2480 | 1005.0 | 821.33 |

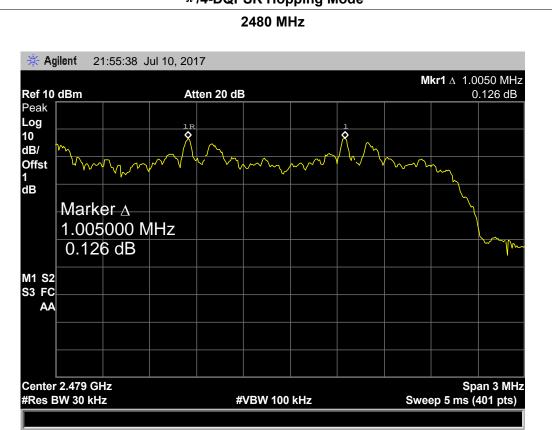
π /4-DQPSK Hopping Mode





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10. Peak Output Power Test

10.1 Test Standard and Limit

10.1.1 Test Standard FCC Part 15.247 (b) (1)

10.1.2 Test Limit

| Test Item | Limit | Frequency Range(MHz) |
|-------------------|--|----------------------|
| Peak Output Power | Hopping Channels>75 Power<1W(30dBm) | 2400~2483.5 |
| WILLIAM STATE | Other <125 mW(21dBm) | |

10.2 Test Setup



10.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Peak Detector: RBW=1 MHz, VBW=3 MHz for bandwidth less than 1MHz. RBW=3 MHz, VBW=3 MHz for bandwidth more than 1MHz.

10.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.



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10.5 Test Data

1 dB

M1 S2 S3 FC AA

Center 2.402 GHz #Res BW 1 MHz

Marker

-2.436 dBm

2.401872500 GHz

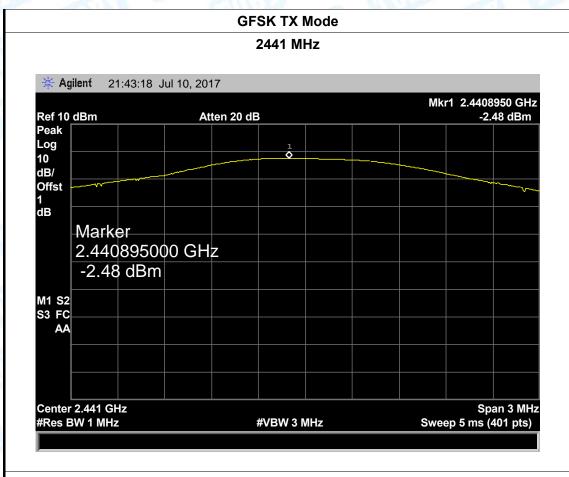
| EUT: | Keyboard | | Model Name | : | B45 |
|--------------------|-----------------------|--------------------|---------------|-------|-------------------------------|
| Temperature: | 25℃ | - EAD | Relative Humi | dity: | 55% |
| Test Voltage: | DC 3.7V | | | | a VIVI |
| Test Mode: | TX Mode (G | SFSK) | | | 13 |
| Channel freque | ncy (MHz) Test Result | | (dBm) | L | imit (dBm) |
| 2402 | | -2.436 | 6 | | |
| 2441 | | -2.480 | | 30 | |
| 2480 | 2480 -2.67 | | 7 | | |
| | - | GFSK TX | Mode | | |
| | | 2402 M | Hz | | |
| | | | | | |
| | | | | | |
| Adilenf 2 | 1·42·45 .lul 10 -20 | 017 | | | |
| * Agilent 2 | 1:42:45 Jul 10, 20 | 017 | | Mkr | 1 2.4018725 GHz |
| Ref 10 dBm | | 017 utten 20 dB | | Mkr | 1 2.4018725 GHz -2.436 dBm |
| Ref 10 dBm Peak | | tten 20 dB | | Mkr | |
| Ref 10 dBm | | | | Mkr | |

#VBW 3 MHz

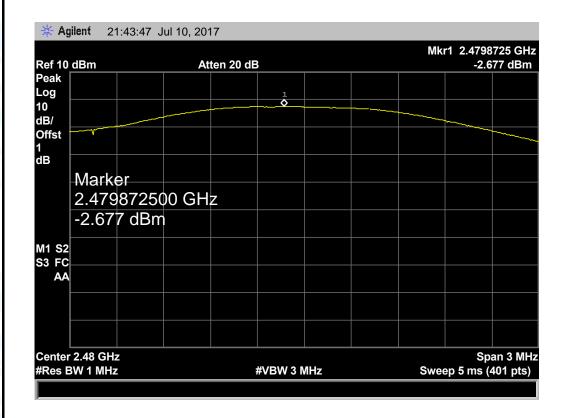
Span 3 MHz Sweep 5 ms (401 pts)



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GFSK TX Mode

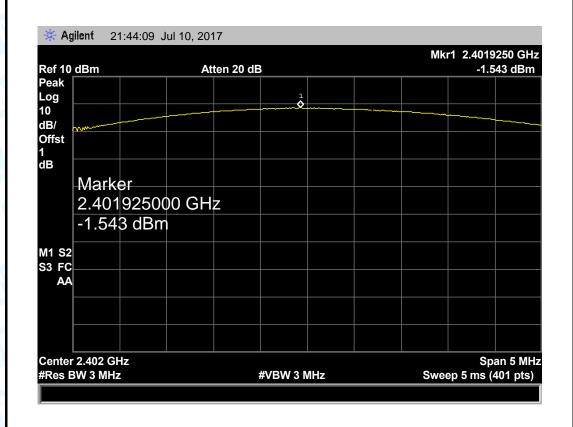




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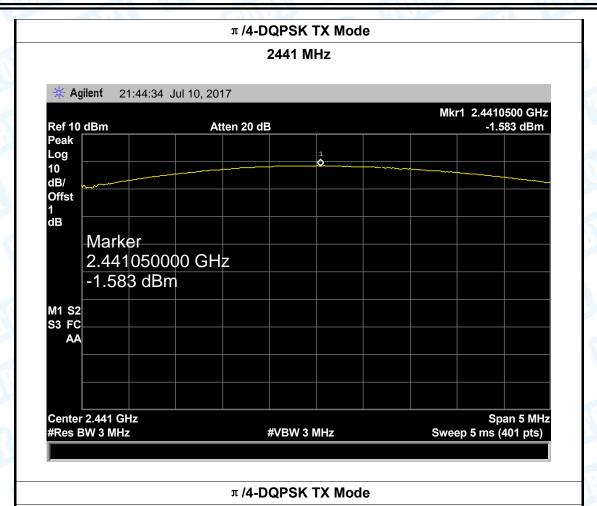
| EUT: | Keyboard | THE STATE OF THE S | Model Name : | B45 |
|----------------------------------|----------|--|--------------------|------------|
| Temperature: | 25℃ | | Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V | N. C. | | 133 |
| Test Mode: | TX Mode | (π /4-DQPSK) | W CO | |
| Channel frequency (MHz) Test Res | | Test Result | (dBm) L | imit (dBm) |
| 2402 | | -1.543 | 3 | |
| 2441 | | -1.583 | | 21 |
| 2480 | | -1.787 | , | |
| // DODOK TV Made | | | | |

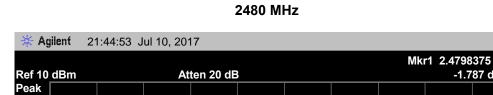
π /4-DQPSK TX Mode

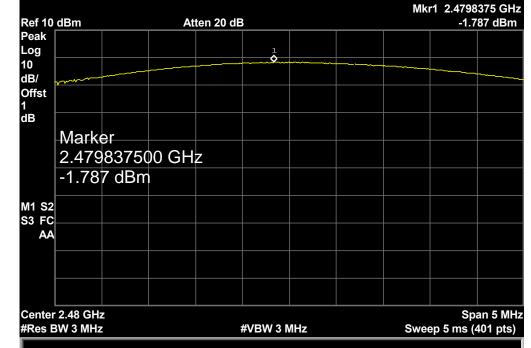




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11. Antenna Requirement

11.1 Standard Requirement

11.1.1 Standard FCC Part 15.203

11.1.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

11.2 Antenna Connected Construction

The directional gains of the antenna used for transmitting is -0.68 dBi, and the antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

The EUT antenna is a PCB antenna. It complies with the standard requirement.

| | Antenna Type |
|----|-------------------------------------|
| | ▼ Permanent attached antenna |
| | □ Unique connector antenna |
| 10 | □ Professional installation antenna |

----END OF REPORT----