

## FCC Part 15C Compliance Test Report

|                                                         |                                                                                                                                                                                                                                                                                                                                      |                                   |                                                                                                                                                                                    |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Report no.:</b>                                 | FCC15C_RM-614_22.doc                                                                                                                                                                                                                                                                                                                 | <b>Date of Report:</b>            | 24-Mar-2010                                                                                                                                                                        |
| <b>Number of pages:</b>                                 | 11                                                                                                                                                                                                                                                                                                                                   | <b>Customer's Contact person:</b> | Helen Hu                                                                                                                                                                           |
| <b>Testing laboratory:</b>                              | TCC Nokia Beijing Laboratory<br>Beijing Economic and Technological Development Area<br>No.5 Donghuan Zhonglu<br>Beijing<br>PRC China 100176<br>Tel. +86 10 8711 8888<br>Fax. +86 10 8711 4550                                                                                                                                        | <b>Customer:</b>                  | Nokia Corporation<br>Beijing Economic and Technological Development Area<br>No.5 Donghuan Zhonglu<br>Beijing<br>PRC China 100176<br>Tel. +86 10 8711 8888<br>Fax. +86 10 8711 4550 |
| <b>FCC listing no.:</b>                                 | 975940                                                                                                                                                                                                                                                                                                                               |                                   |                                                                                                                                                                                    |
| <b>IC recognition no.:</b>                              | 661AH-1                                                                                                                                                                                                                                                                                                                              |                                   |                                                                                                                                                                                    |
| <b>Tested devices/accessories:</b>                      | <b>Phone RM-614 / Battery BL-5J</b>                                                                                                                                                                                                                                                                                                  |                                   |                                                                                                                                                                                    |
| <b>FCC ID:</b>                                          | QTLRM-614X                                                                                                                                                                                                                                                                                                                           | <b>IC:</b>                        | 661AB-RM614X                                                                                                                                                                       |
| <b>Supplement reports:</b>                              | -                                                                                                                                                                                                                                                                                                                                    |                                   |                                                                                                                                                                                    |
| <b>Testing has been carried out in accordance with:</b> | CFR 47, FCC rules Part 15 Subpart C, ANSI C63.4 (2003), Public Notice DA 00-705, DTS procedures KDB 558074, IC standards RSS-GEN (Issue 2, June 2007) and RSS-210 (Issue 7, June 2007). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit". |                                   |                                                                                                                                                                                    |
| <b>Documentation:</b>                                   | The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Nokia.                                                                                 |                                   |                                                                                                                                                                                    |
| <b>Test Results:</b>                                    | <b>The EUT complies with the requirements in respect of all parameters subject to the test.</b><br>The test results relate only to devices specified in this document.                                                                                                                                                               |                                   |                                                                                                                                                                                    |
| <b>Date and signature for the contents:</b>             |                                                                                                                                                                                                                                                                                                                                      |                                   |                                                                                                                                                                                    |

Jia Dongsheng, System Manager

## 1. Summary for FCC Part 15C Compliance Test Report

|                               |                                                       |
|-------------------------------|-------------------------------------------------------|
| Date of receipt               | 16-Mar-2010                                           |
| Testing completed             | 23-Mar-2010                                           |
| The customer's contact person | Helen Hu                                              |
| Test Plan referred to         | T:\Projects\RM-614\TestPlan_RS\RS_testplan_RM-614.xls |
| Notes                         | -                                                     |
| Document name                 | FCC15C_RM-614_22.doc                                  |

### 1.1. EUT and Accessory Information

The EUT is a 4-band (GSM850/900/1800/1900) mobile phone with GPRS, EGPRS and Bluetooth. Bluetooth is tested with maximum rated TX power.

| Product | Type   | SN                          | HW   | MV | SW         | DUT   |
|---------|--------|-----------------------------|------|----|------------|-------|
| Phone   | RM-614 | 008600080028904             | 0201 | -  | ag92_10w03 | 51575 |
| Battery | BL-5J  | 4620409503I20270596;0670574 | -    | -  | -          | 51580 |

### 1.2. Summary of Test Results

#### Bluetooth:

| Section in CFR 47 | Section in RSS-GEN or RSS-210 | Name of the test                     | Result |
|-------------------|-------------------------------|--------------------------------------|--------|
| 15.247(b)(1)      | A8.4 (2)                      | Conducted peak output power          | NP     |
| 15.247(d)         | A8.5                          | Band edge compliance of RF emissions | PASSED |
| 15.247(d)         | A8.5                          | Spurious RF conducted emissions      | NP     |
| 15.247(d), 15.209 | A8.5                          | Spurious radiated emissions          | NP     |
| 15.207            | 7.2.2                         | AC powerline conducted emissions     | NP     |
| 15.247(a)(1)      | A8.1 (a)                      | 20 dB bandwidth                      | NP     |
| 15.247(a)(1)      | A8.1 (b)                      | Carrier frequency separation         | NP     |
| 15.247(a)(1)(iii) | A8.1 (d)                      | Number of hopping frequencies        | NP     |
| 15.247(a)(1)(iii) | A8.1 (d)                      | Time of occupancy                    | NP     |

PASSED

The EUT complies with the essential requirements in the standard.

FAILED

The EUT does not comply with the essential requirements in the standard.

NP

The test was not performed by the TCC Nokia Laboratory.

*The test results of QTLRM-614 are re-used for certification of the QTLRM-614X. The table above indicates the results, which will be re-used.*

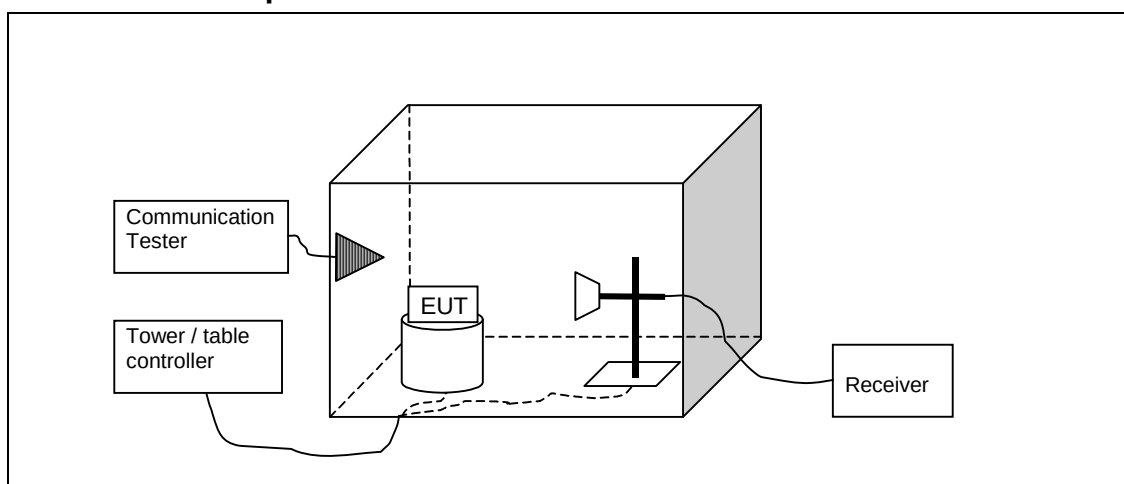
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## 2. Band edge compliance of RF emissions (FCC §15.247(d), RSS-210 A8.5)

|                                                 |                   |
|-------------------------------------------------|-------------------|
| EUT with DUT number                             | RM-614, DUT 51575 |
| Accessories with DUT numbers                    | BL-5J, DUT 51580  |
| Operation Voltage [V] / [Hz]                    | Nominal           |
| Result                                          | PASSED            |
| Remarks                                         | -                 |
| Temp [°C] / Humidity [%RH] / Air Pressure [kPa] | 20 / 38 / 101.5   |
| Date of measurements                            | 23-Mar-2010       |
| Measured by                                     | Yin Hongpeng      |

### 2.1. Test Setup



### 2.2. Test method and limit

The measurement is made according to Public notice DA 00-705 and IC standard RSS-210.

The measurement results are obtained as described below:

$$E [\mu V/m] = U_{RX} + A_{TOT}$$

Where  $U_{RX}$  is receiver reading and  $A_{TOT}$  is total correction factor including cable loss, antenna factor and preamplifier gain ( $A_{TOT} = L_{CABLES} + AF - G_{PREAMP}$ ).

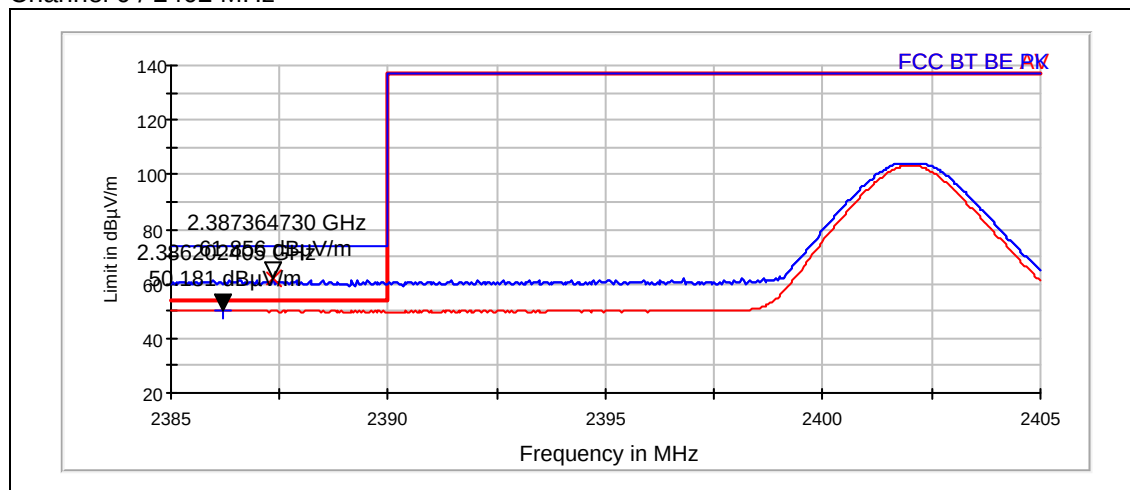
Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

| Frequency range [MHz]       | Limit Average [dBμV/m] | Limit Peak [dBμV/m] |
|-----------------------------|------------------------|---------------------|
| Below 2390 and above 2483.5 | <=54                   | <=74                |

## 2.3. Bluetooth Test results

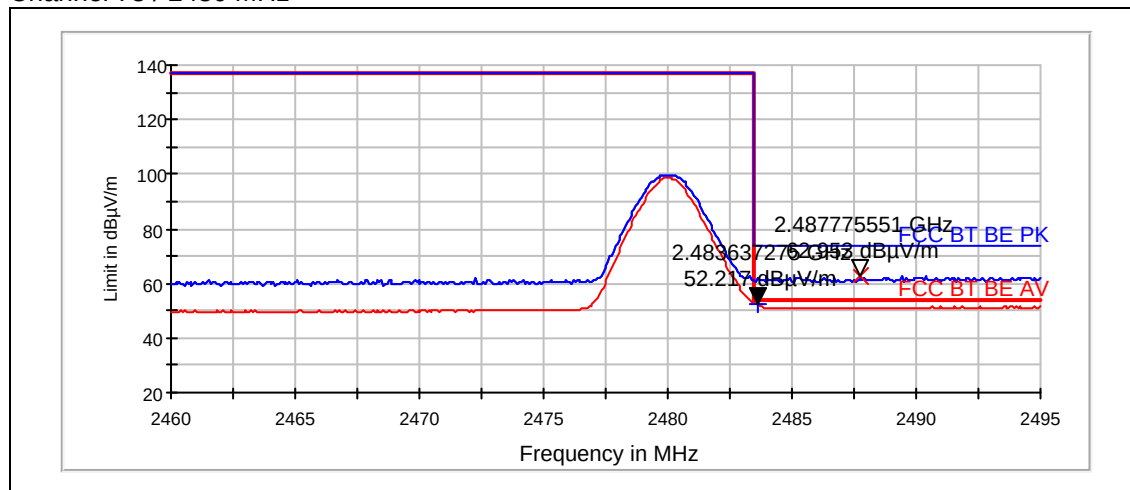
### 2.3.1 GFSK modulation, PRBS packet type

Channel 0 / 2402 MHz

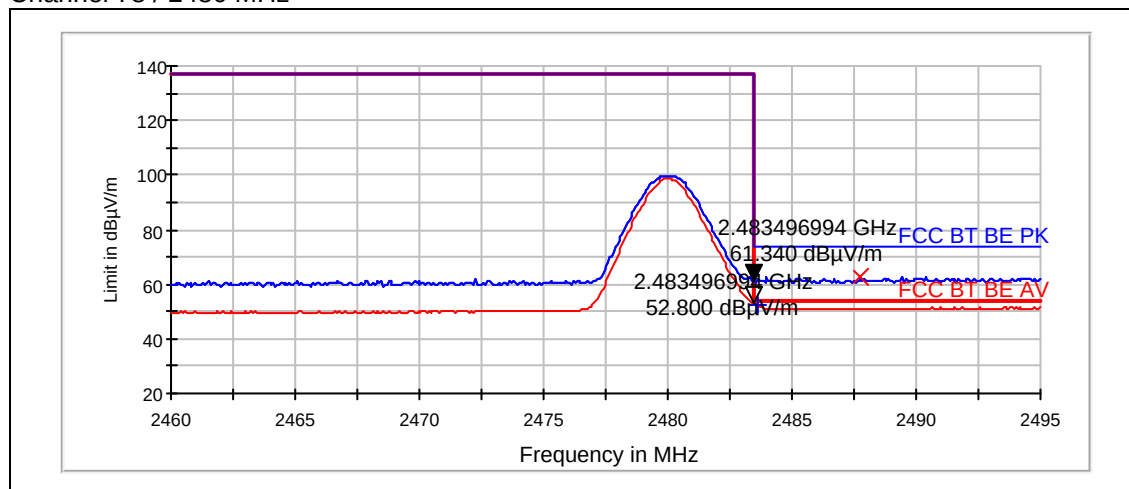


| Detector (RBW: 1 MHz, VBW: 1MHz) | E [dBμV/m] | Result |
|----------------------------------|------------|--------|
| Peak                             | 61.86      | PASSED |
| Average                          | 50.18      | PASSED |

Channel 78 / 2480 MHz

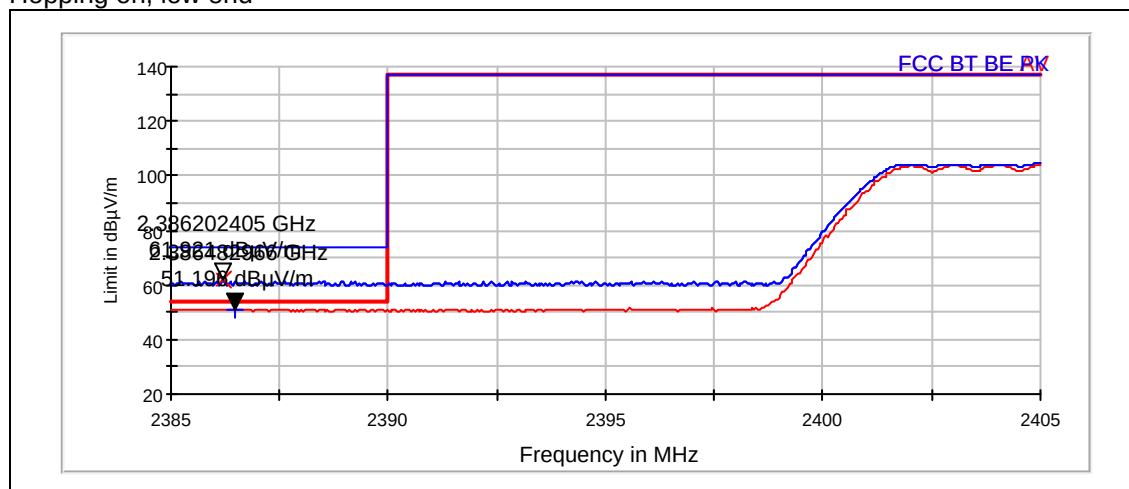


Channel 78 / 2480 MHz



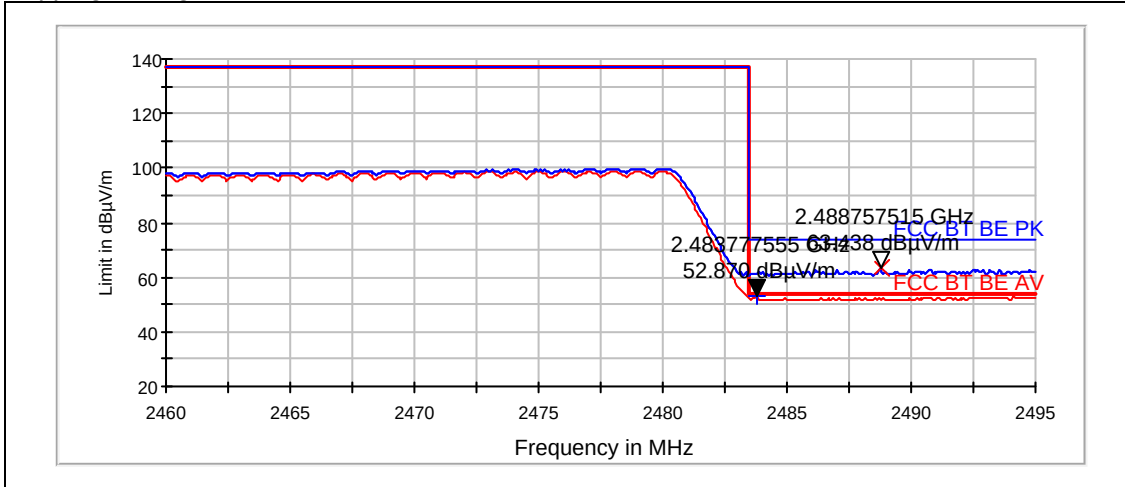
| Detector (RBW: 1 MHz, VBW: 1MHz) | E [dBμV/m] | Result |
|----------------------------------|------------|--------|
| Peak                             | 62.95      | PASSED |
| Average                          | 52.22      | PASSED |
| Peak (2483.5GHz)                 | 61.34      | PASSED |
| Average (2483.5GHz)              | 52.80      | PASSED |

Hopping on, low end

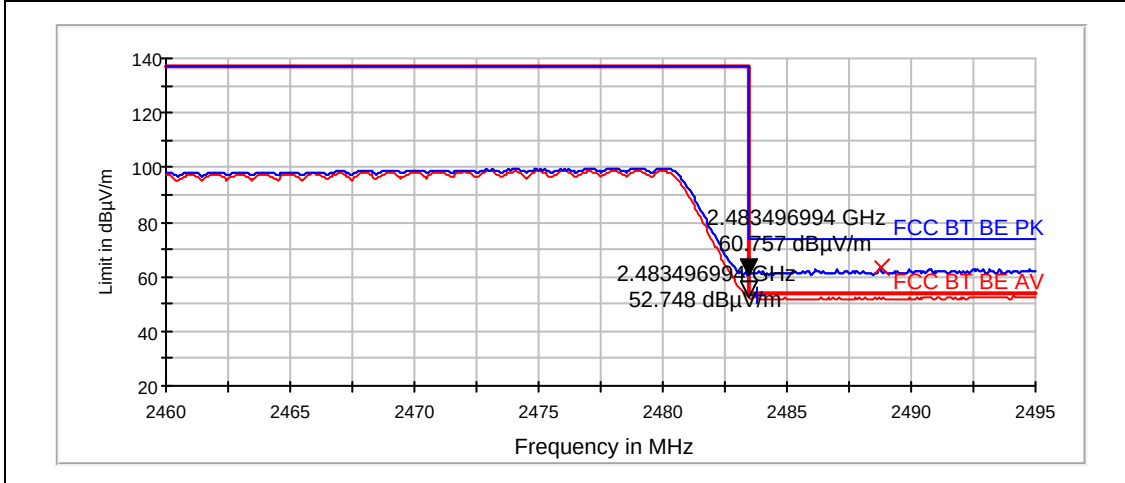


| Detector (RBW: 1 MHz, VBW: 1MHz) | E [dBμV/m] | Result |
|----------------------------------|------------|--------|
| Peak                             | 61.92      | PASSED |
| Average                          | 51.2       | PASSED |

Hopping on, high end



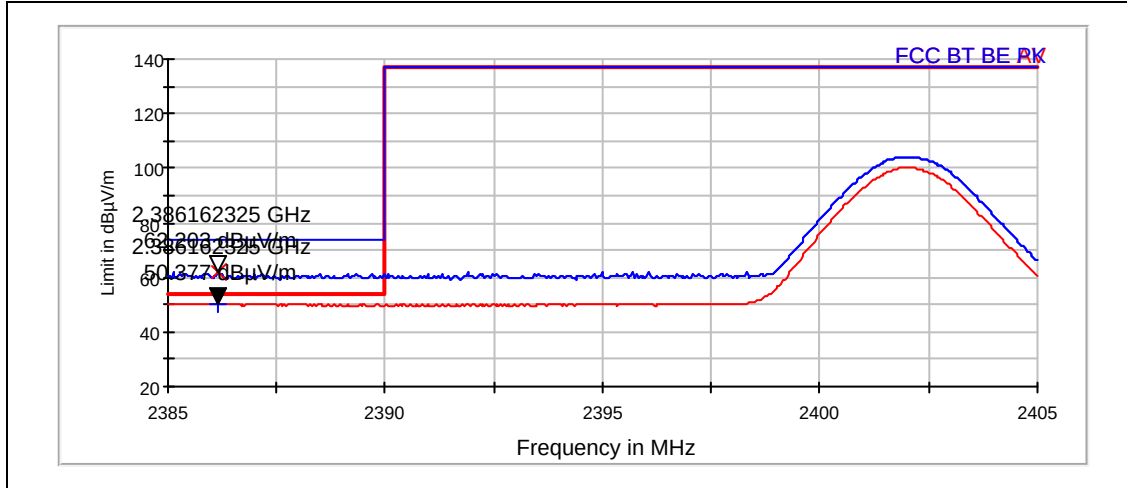
Hopping on, high end



| Detector (RBW: 1 MHz, VBW: 1MHz) | E [dBμV/m] | Result |
|----------------------------------|------------|--------|
| Peak                             | 63.44      | PASSED |
| Average                          | 52.87      | PASSED |
| Peak (2483.5GHz)                 | 60.76      | PASSED |
| Average (2483.5GHz)              | 52.75      | PASSED |

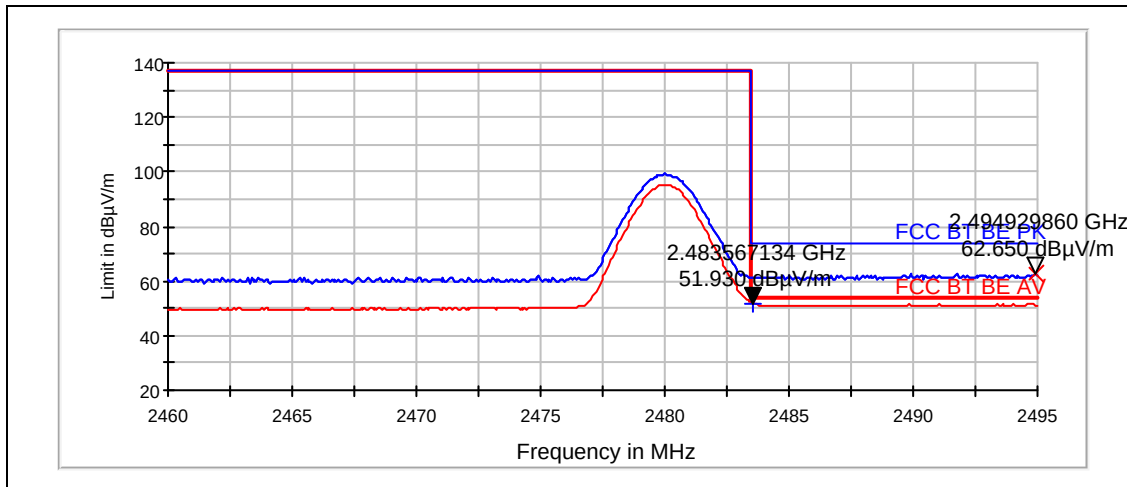
### 2.3.2 8DPSK modulation, PRBS packet type

Channel 0 / 2402 MHz



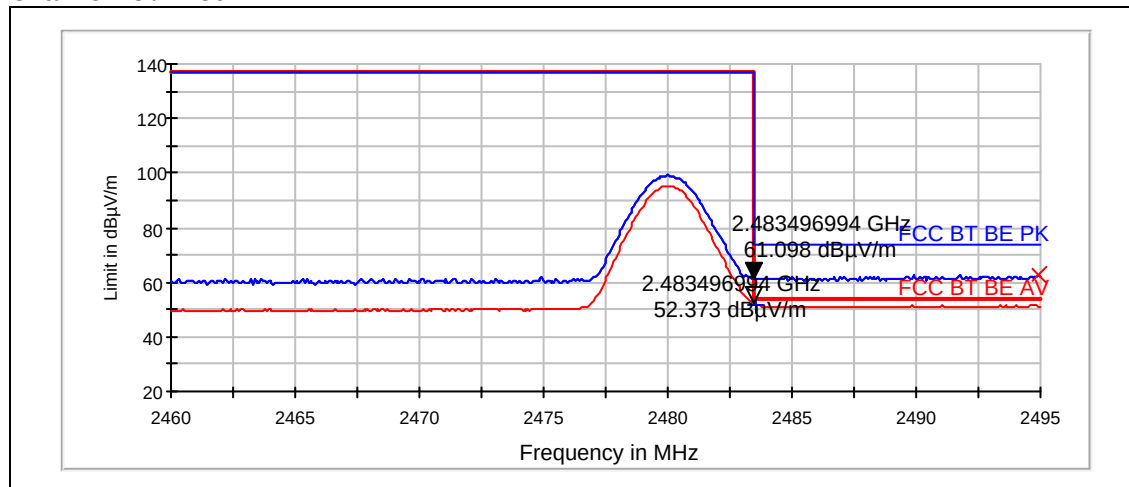
| Detector (RBW: 1 MHz, VBW: 1MHz) | E [dBμV/m] | Result |
|----------------------------------|------------|--------|
| Peak                             | 62.2       | PASSED |
| Average                          | 50.38      | PASSED |

Channel 78 / 2480 MHz



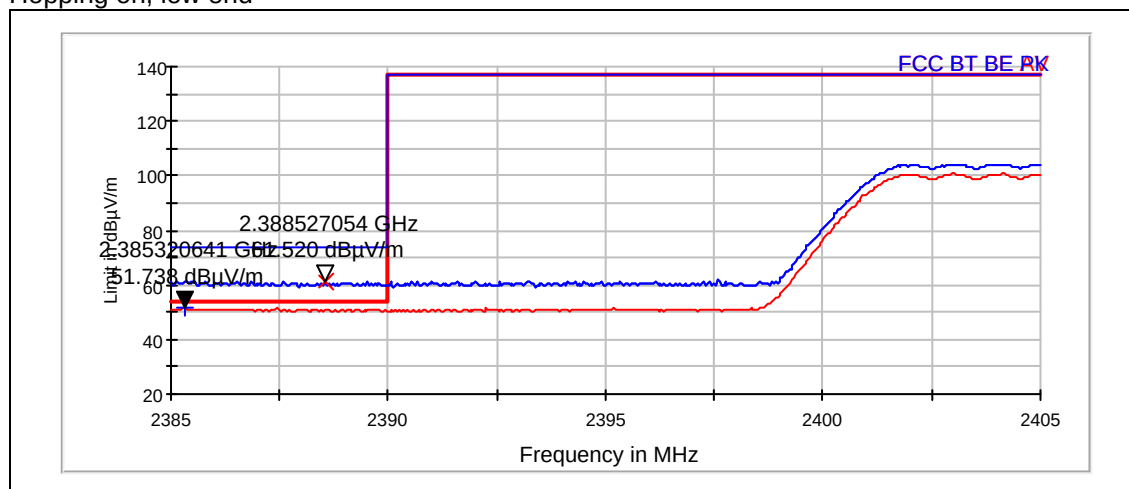


Channel 78 / 2480 MHz



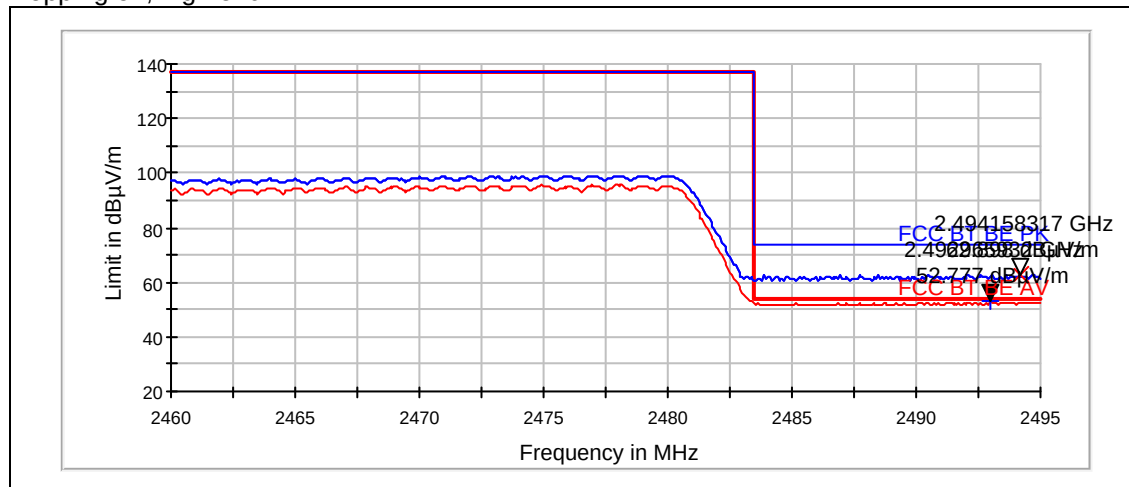
| Detector (RBW: 1 MHz, VBW: 1MHz) | E [dBμV/m] | Result |
|----------------------------------|------------|--------|
| Peak                             | 62.65      | PASSED |
| Average                          | 51.93      | PASSED |
| Peak (2483.5GHz)                 | 61.1       | PASSED |
| Average (2483.5GHz)              | 52.37      | PASSED |

Hopping on, low end

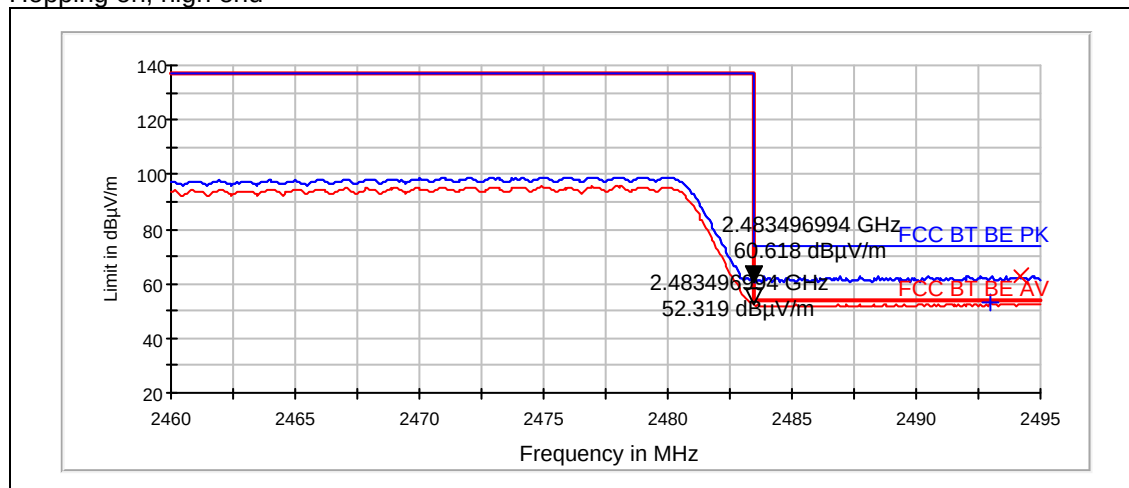


| Detector (RBW: 1 MHz, VBW: 1MHz) | E [dBμV/m] | Result |
|----------------------------------|------------|--------|
| Peak                             | 61.52      | PASSED |
| Average                          | 51.74      | PASSED |

Hopping on, high end



Hopping on, high end



| Detector (RBW: 1 MHz, VBW: 1MHz) | E [dBμV/m] | Result |
|----------------------------------|------------|--------|
| Peak                             | 62.9       | PASSED |
| Average                          | 52.78      | PASSED |
| Peak (2483.5GHz)                 | 60.62      | PASSED |
| Average (2483.5GHz)              | 52.32      | PASSED |

### 3. Test Equipment

#### 3.1. Conducted measurements

| Eq. No     | Equipment                  | Type      | Manufacturer            | Used in            |
|------------|----------------------------|-----------|-------------------------|--------------------|
| BJPCPT0073 | SIGNAL GENERATOR           | SMR 20    | Rohde&Schwarz           | 22/24/27, 15C, 15B |
| BJPCTC0055 | RADIO COMMUNICATION TESTER | CMU200    | Rohde&Schwarz           | 22/24/27, 15C, 15B |
| BJPCPT0039 | LISN                       | ESH3-Z5   | Rohde&Schwarz           | 15C, 15B           |
| BJPCPT0040 | TEST RECEIVER              | ESCS30    | Rohde&Schwarz           | 15C, 15B           |
| BJPCPT0069 | LISN                       | ESH3-Z5   | Rohde&Schwarz           | 15C, 15B           |
| BJPCPT0079 | LISN                       | ESH3-Z5   | Rohde&Schwarz           | 15C, 15B           |
| BJPCPT0191 | PULSE LIMITER              | ESH3-Z2   | Rohde&Schwarz           | 15C, 15B           |
| BJPCPT0131 | RADIO COMMUNICATION TESTER | CMU200    | ROHDE&SCHWARZ           | 15C, 15B           |
| BJPCTC0089 | Temperature Test chamber   | VT4002    | Vötsch Industrietechnik | 22/24/27, 15C      |
| BJPCTC0090 | FSP spectrum analyzer      | FSP30     | R&S                     | 22/24/27, 15C      |
| BJPCTC0067 | BLUETOOTH TESTER           | CBT       | R&S                     | 22/24/27, 15C      |
| BJPCHW0020 | Dc Power supply            | Hp6632B   | HP                      | 22/24/27, 15C      |
| BJPCTC0094 | GPB-RS232 convertor        | GPB-RS232 | National Instruments    | 22/24/27, 15C      |

#### 3.2. Radiated measurements

| Eq. No     | Equipment                                  | Type                              | Manufacturer           | Used in            |
|------------|--------------------------------------------|-----------------------------------|------------------------|--------------------|
| BJPCPT0129 | Relay Unit                                 | TS-RSP                            | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| BJPCPT0130 | Relay Unit                                 | TS-RSP                            | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| BJPCPT0080 | Device Controller                          | EMCO2090                          | ETS-EMCO               | 22/24/27, 15C, 15B |
| BJPCTC0048 | RF Preamplifier 10MHz-3GHz (Metal chassis) | AFS4-00100300-10-10P-4            | MITEQ                  | 22/24/27, 15C, 15B |
| BJPCTC0007 | Ultra Broadband Antenna 30MHz-3000MHz      | HL562                             | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| BJPCPT0162 | Horn Antenna 1GHz-18GHz                    | HF906                             | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| BJPCTC0029 | Horn Antenna 1GHz-18GHz                    | HF906                             | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| BJPCTC0049 | RF preamplifier 3GHz-18GHz                 | BLMA-0118-1A-BT                   | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| BJPCTC0072 | 3m anechoic chamber                        | -                                 | ETS-Lindgren           | 22/24/27, 15C, 15B |
| BJPCTC0075 | Turntable                                  | Model 2088                        | ETS-EMCO               | 22/24/27, 15C, 15B |
| BJPCPT0072 | EMI Test Receiver 20Hz-26.5GHz             | ESIB26                            | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| BJPCPT0150 | High Pass filter                           | WHKS 1200-10SS                    | Wainwright instruments | 22/24/27, 15C, 15B |
| BJPCTC0034 | Notch Filter                               | WRCT800/880-0.2/40-5SSK           | Wainwright instruments | 22, 15B            |
| BJPCPT0151 | Notch Filter                               | WRCD1800/2000-0.2/40-5SSK         | Wainwright instruments | 24, 15B            |
| BJPCTC0017 | Radio Communication Tester                 | CMU200                            | Rohde&Schwarz          | 22/24/27, 15C, 15B |
| BJPCPT0154 | Filter                                     | WRCT2402/2480-2400/2483.5-30-20SS | Wainwright instruments | 15C, 15B           |
| BJPCTC0058 | Bluetooth tester                           | CBT                               | Rohde&Schwarz          | 15C, 15B           |
| BJPCTC0064 | WCDMA II FILTER                            | WRCG1877/1883-1870/1890-40/6SS    | Wainwright instruments | 24, 15B            |
| BJPCTC0065 | WCDMA V FILTER                             | WRCG832/838-825/845-40/5SS        | Wainwright instruments | 22, 15B            |
| BJPCTC0066 | ANTENNA                                    | SBA9113                           | SWARZBECK              | 22/24/27           |
| BJPCTC0096 | RF Preamplifier 100MHz-3GHz                | AFS4-00100300-20-23P-6            | MITEQ                  | 22/24/27, 15C, 15B |