

## ***FCC EVALUATION REPORT FOR CERTIFICATION***

**Manufacturer : Hubsung Plastics, Ltd.**  
**182-3, Dodang-dong, Wonmi-gu, Bucheon,**  
**Gyeonggi-do, South Korea 420-806**  
**Attn: Mr. Seongho Ko, President**

**Date of Issue : December 7, 2010**  
**Order Number: GETEC-C1-10-196**  
**Test Report Number: GETEC-E3-10-126**  
**Test Site: Gumi College EMC Center**  
**FCC Registration Number: (100749, 443957)**

**FCC ID. : RE6HUSKY24G**

**Applicant : Hubsung Plastics, Ltd.**

|                          |                                                                                                            |
|--------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Rule Part(s)</b>      | <b>: FCC Part 15 Subpart C-Intentional Radiator § 15.247</b>                                               |
| <b>Test method</b>       | <b>: Public Notice DA 00-705</b><br>(Guidance on measurement for Frequency hopping spread spectrum system) |
| <b>Equipment Class</b>   | <b>: Part 15 Spread Spectrum Transmitter (DSS)</b>                                                         |
| <b>EUT Type</b>          | <b>: 2.4 GHz FHSS Transmitter</b>                                                                          |
| <b>Type of Authority</b> | <b>: Certification</b>                                                                                     |
| <b>Model Name</b>        | <b>: HUSKY2.4G</b>                                                                                         |
| <b>Trade Name</b>        | <b>: Husky</b>                                                                                             |

**This equipment has been shown to be in compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003**

**I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.**

**Tested by,**

**Reviewed by,**

  
**Soon-Hoon Jeong, Engineer**  
**GUMI College EMC center**

  
**Jae-Hoon Jeong, Senior Engineer**  
**GUMI College EMC center**



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**Scope:** Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and / or unintentional radiators for compliance with technical rules and regulations of the Federal Communications Commission.

## 1. General Information

**Applicant:** Hubsung Plastics, Ltd.

**Applicant address:** 182-3, Dodang-dong, Wonmi-gu, Bucheon, Gyeonggi-do, South Korea 420-806

**Manufacturer:** Hubsung Plastics, Ltd.

**Manufacturer address:** 182-3, Dodang-dong, Wonmi-gu, Bucheon, Gyeonggi-do, South Korea 420-806

**Contact person:** Mr. Seongho Ko, President

**Telephone number:** +82-31-427-8904      **Fax number:** +82-31-427-8907

- **FCC ID.** RE6HUSKY24G
- **Equipment Class** Spread Spectrum Transmitter (DSS)
- **EUT Type** 2.4 GHz FHSS Transmitter
- **Model Name** HUSKY2.4G
- **Rule Part(s)** FCC Part 15, Subpart C-Intentional Radiator § 15.247
- **Test Method** Public Notice DA 00-705  
(Guidance on measurement for frequency hopping spread spectrum systems)
- **Type of Authority** Certification
- **Test Procedure(s)** ANSI C63.4 (2003)
- **Dates of Test** November 10 ~ December 1, 2010
- **Place of Test** **Gumi College EMC Center** ( FCC Registration No.: 100749, 443957)  
407, Bugok-Dong, Gumi-si, Gyeongsangbuk-Do, Korea
- **Test Report Number** GETEC-E3-10-126
- **Dates of Issue** December 7, 2010



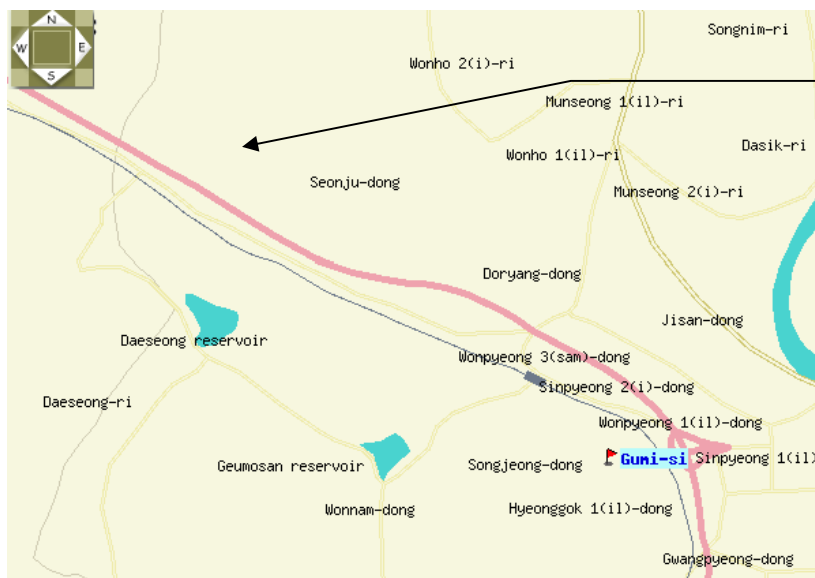
## 2. Introduction

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Nose Emissions From Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (ASNI C63.4-2003) was used in determining radiated and conducted emissions emanating from **Hubsung Plastics, Ltd. 2.4 GHz FHSS Transmitter (Model name: HUSKY2.4G)**

These measurement tests were conducted at **Gumi College EMC Center**.

The site address is 407, Bugok-Dong, Gumi-si, Gyeongsangbuk-Do, Korea

This test site is one of the highest point of Gumi 1 college at about 200 kilometers away from Seoul city and 40 kilometers away from Daegu city. It is located in the valley surrounded by mountains in all directions where ambient radio signal conditions are quiet and a favorable area to measure the radio frequency interference on open field test site for the computing and ISM devices manufactures. The detailed description of the measurement facility was found to be in compliance with the requirements of §2.948 according to ANSI C63.4 on October 19, 1992



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Fig 1. The map above shows the Gumi College in vicinity area.



### 3. Product Information

#### 3.1 Description of EUT

The Equipment under Test (EUT) is the **Hubsung Plastics, Ltd. 2.4 GHz FHSS Transmitter**  
(Model Name: HUSKY2.4G) FCC ID.: RE6HUSKY24G

**External connector** : USB port, Charging port

**Size** : 185 mm(W) × 120 mm(H) × 270 m(D)

**Weight** : 482 g

#### Frequency channel List

| CH | Frequency     | CH | Frequency     | CH | Frequency     | CH  | Frequency     |
|----|---------------|----|---------------|----|---------------|-----|---------------|
| 0  | 2 402.999 695 | 31 | 2 413.330 506 | 62 | 2 423.661 316 | 93  | 2 433.992 127 |
| 1  | 2 403.332 947 | 32 | 2 413.663 757 | 63 | 2 423.994 568 | 94  | 2 434.325 379 |
| 2  | 2 403.666 199 | 33 | 2 413.997 009 | 64 | 2 424.327 820 | 95  | 2 434.658 631 |
| 3  | 2 403.999 451 | 34 | 2 414.330 261 | 65 | 2 424.661 072 | 96  | 2 434.991 882 |
| 4  | 2 404.332 703 | 35 | 2 414.663 513 | 66 | 2 424.994 324 | 97  | 2 435.325 134 |
| 5  | 2 404.665 955 | 36 | 2 414.996 765 | 67 | 2 425.327 576 | 98  | 2 435.658 386 |
| 6  | 2 404.999 207 | 37 | 2 415.330 017 | 68 | 2 425.660 828 | 99  | 2 435.991 638 |
| 7  | 2 405.332 459 | 38 | 2 415.663 269 | 69 | 2 425.994 080 | 100 | 2 436.324 890 |
| 8  | 2 405.665 711 | 39 | 2 415.996 521 | 70 | 2 426.327 332 | 101 | 2 436.658 142 |
| 9  | 2 405.998 963 | 40 | 2 416.329 773 | 71 | 2 426.660 584 | 102 | 2 436.991 394 |
| 10 | 2 406.332 215 | 41 | 2 416.663 025 | 72 | 2 426.993 836 | 103 | 2 437.324 646 |
| 11 | 2 406.665 466 | 42 | 2 416.996 277 | 73 | 2 427.327 088 | 104 | 2 437.657 898 |
| 12 | 2 406.998 718 | 43 | 2 417.329 529 | 74 | 2 427.660 340 | 105 | 2 437.991 150 |
| 13 | 2 407.331 970 | 44 | 2 417.662 781 | 75 | 2 427.993 591 | 106 | 2 438.324 402 |
| 14 | 2 407.665 222 | 45 | 2 417.996 033 | 76 | 2 428.326 843 | 107 | 2 438.657 654 |
| 15 | 2 407.998 474 | 46 | 2 418.329 285 | 77 | 2 428.660 095 | 108 | 2 438.990 906 |
| 16 | 2 408.331 726 | 47 | 2 418.662 537 | 78 | 2 428.993 347 | 109 | 2 439.324 158 |
| 17 | 2 408.664 978 | 48 | 2 418.995 789 | 79 | 2 429.326 599 | 110 | 2 439.657 410 |
| 18 | 2 408.998 230 | 49 | 2 419.329 041 | 80 | 2 429.659 851 | 111 | 2 439.990 662 |
| 19 | 2 409.331 482 | 50 | 2 419.662 293 | 81 | 2 429.993 103 | 112 | 2 440.323 914 |
| 20 | 2 409.664 734 | 51 | 2 419.995 545 | 82 | 2 430.326 355 | 113 | 2 440.657 166 |
| 21 | 2 409.997 986 | 52 | 2 420.328 797 | 83 | 2 430.659 607 | 114 | 2 440.990 418 |
| 22 | 2 410.331 238 | 53 | 2 420.662 049 | 84 | 2 430.992 859 | 115 | 2 441.323 670 |
| 23 | 2 410.664 490 | 54 | 2 420.995 300 | 85 | 2 431.326 111 | 116 | 2 441.656 922 |
| 24 | 2 410.997 742 | 55 | 2 421.328 552 | 86 | 2 431.659 363 | 117 | 2 441.990 174 |
| 25 | 2 411.330 994 | 56 | 2 421.661 804 | 87 | 2 431.992 615 | 118 | 2 442.323 425 |
| 26 | 2 411.664 246 | 57 | 2 421.995 056 | 88 | 2 432.325 867 | 119 | 2 442.656 677 |
| 27 | 2 411.997 498 | 58 | 2 422.328 308 | 89 | 2 432.659 119 | 120 | 2 442.989 929 |
| 28 | 2 412.330 750 | 59 | 2 422.661 560 | 90 | 2 432.992 371 | 121 | 2 443.323 181 |
| 29 | 2 412.664 002 | 60 | 2 422.994 812 | 91 | 2 433.325 623 | 122 | 2 443.656 433 |
| 30 | 2 412.997 254 | 61 | 2 423.328 064 | 92 | 2 433.658 875 | 123 | 2 443.989 685 |

**EUT Type: 2.4 GHz FHSS Transmitter**

**FCC ID.: RE6HUSKY24G**



| CH  | Frequency     | CH  | Frequency     | CH  | Frequency     |
|-----|---------------|-----|---------------|-----|---------------|
| 124 | 2 444.322 937 | 163 | 2 457.319 763 | 202 | 2 470.316 590 |
| 125 | 2 444.656 189 | 164 | 2 457.653 015 | 203 | 2 470.649 841 |
| 126 | 2 444.989 441 | 165 | 2 457.986 267 | 204 | 2 470.983 093 |
| 127 | 2 445.322 693 | 166 | 2 458.319 519 | 205 | 2 471.316 345 |
| 128 | 2 445.655 945 | 167 | 2 458.652 771 | 206 | 2 471.649 597 |
| 129 | 2 445.989 197 | 168 | 2 458.986 023 | 207 | 2 471.982 849 |
| 130 | 2 446.322 449 | 169 | 2 459.319 275 | 208 | 2 472.316 101 |
| 131 | 2 446.655 701 | 170 | 2 459.652 527 | 209 | 2 472.649 353 |
| 132 | 2 446.988 953 | 171 | 2 459.985 779 | 210 | 2 472.982 605 |
| 133 | 2 447.322 205 | 172 | 2 460.319 031 | 211 | 2 473.315 857 |
| 134 | 2 447.655 457 | 173 | 2 460.652 283 | 212 | 2 473.649 109 |
| 135 | 2 447.988 709 | 174 | 2 460.985 535 | 213 | 2 473.982 361 |
| 136 | 2 448.321 961 | 175 | 2 461.318 787 | 214 | 2 474.315 613 |
| 137 | 2 448.655 213 | 176 | 2 461.652 039 | 215 | 2 474.648 865 |
| 138 | 2 448.988 465 | 177 | 2 461.985 291 | 216 | 2 474.982 117 |
| 139 | 2 449.321 716 | 178 | 2 462.318 543 | 217 | 2 475.315 369 |
| 140 | 2 449.654 968 | 179 | 2 462.651 795 | 218 | 2 475.648 621 |
| 141 | 2 449.988 220 | 180 | 2 462.985 047 | 219 | 2 475.981 873 |
| 142 | 2 450.321 472 | 181 | 2 463.318 298 | 220 | 2 476.315 125 |
| 143 | 2 450.654 724 | 182 | 2 463.651 550 | 221 | 2 476.648 377 |
| 144 | 2 450.987 976 | 183 | 2 463.984 802 | 222 | 2 476.981 629 |
| 145 | 2 451.321 228 | 184 | 2 464.318 054 | 223 | 2 477.314 881 |
| 146 | 2 451.654 480 | 185 | 2 464.651 306 | 224 | 2 477.648 132 |
| 147 | 2 451.987 732 | 186 | 2 464.984 558 | 225 | 2 477.981 384 |
| 148 | 2 452.320 984 | 187 | 2 465.317 810 | 226 | 2 478.314 636 |
| 149 | 2 452.654 236 | 188 | 2 465.651 062 | 227 | 2 478.647 888 |
| 150 | 2 452.987 488 | 189 | 2 465.984 314 | 228 | 2 478.981 140 |
| 151 | 2 453.320 740 | 190 | 2 466.317 566 | 229 | 2 479.314 392 |
| 152 | 2 453.653 992 | 191 | 2 466.650 818 | 230 | 2 479.647 644 |
| 153 | 2 453.987 244 | 192 | 2 466.984 070 | 231 | 2 479.980 896 |
| 154 | 2 454.320 496 | 193 | 2 467.317 322 | 232 | 2 480.314 148 |
| 155 | 2 454.653 748 | 194 | 2 467.650 574 | 233 | 2 480.647 400 |
| 156 | 2 454.987 000 | 195 | 2 467.983 826 | 234 | 2 480.980 652 |
| 157 | 2 455.320 252 | 196 | 2 468.317 078 |     |               |
| 158 | 2 455.653 504 | 197 | 2 468.650 330 |     |               |
| 159 | 2 455.986 756 | 198 | 2 468.983 582 |     |               |
| 160 | 2 456.320 007 | 199 | 2 469.316 834 |     |               |
| 161 | 2 456.653 259 | 200 | 2 469.650 086 |     |               |
| 162 | 2 456.986 511 | 201 | 2 469.983 338 |     |               |

\* 24 channels at random access for the total 235 channels. (Selected channel is gray box)



### 3.2 Support Equipment / Cables used

#### 3.2.1 Used Support Equipment

| Description   | Manufacturer             | Model Name | S/N & FCC ID.            |
|---------------|--------------------------|------------|--------------------------|
| AC/DC adapter | ASIAN power devices Inc. | DA-60M12   | S/N: N/A<br>FCC ID.: N/A |

*See “Appendix E – Test Setup Photographs” for actual system test set-up*

#### 3.2.2 System configuration

| Description | Manufacturer | Model Name | S/N & FCC ID.        |
|-------------|--------------|------------|----------------------|
| None        | -            | -          | S/N: -<br>FCC ID.: - |

#### 3.2.3 Used Cable(s)

| Cable Name | Condition | Description |
|------------|-----------|-------------|
| None.      | -         | -           |

### 3.3 Modification Item(s)

-. None





## 4. Description of tests

### 4.1 Test Condition

The EUT was installed, arranged and operated in a manner that is most representative of equipment as typically used. The measurements were carried out while varying operating modes and cable positions within typically arrangement to determine maximum emission level.

The representative and worst test mode(s) were noted in the test report.

- Test Voltage / Frequency : AC 120 V / 60 Hz (DC 7.4 V supplied from the Li-on battery)
- Test Mode(s): RF transmitting mode

## 5. Antenna Requirement - §5.203

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the applicant can be used with the device. The use of permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with this requirement.

### 5.1 Description of Antenna

The **Hubsung Plastics, Ltd. 2.4 GHz FHSS Transmitter** comply with the requirement of §5.203 with a monopole antenna permanently attached to the transmitter.



## 5.2 Conducted Emission

The Line conducted emission test facility is inside a 4 m × 8 m × 2.5 m shielded enclosure. (FCC Registration No.: 100749)

The EUT was placed on a non-conducting 1.0 m by 1.5 m table, which is 0.8 m in height and 0.4 m away from the vertical wall of the shielded enclosure.

The EUT is powered from the Rohde & Schwarz LISN (ESH2-Z5) and the support equipment is powered from the Rohde & Schwarz LISN (ESH3-Z5). Powers to the LISN are filtered by high-current high insertion loss power line filter.

Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

The RF output of the LISN was connected to the EMI test receiver (Rohde & Schwarz, ESCS30).

The EMI test receiver was scanned from 150 kHz to 30 MHz with 20 ms sweep time to determine the frequency producing the maximum EME from the EUT. The frequency producing the maximum level was re-examined using Quasi-Peak mode of the EMI test receiver.

The bandwidth of Quasi-peak mode was set to 9 kHz. Each emission was maximized consistent with typical applications by varying the configuration of the test sample. Interface cables were connected to the available interface ports of the test unit. The effect of varying the position of cables was investigated to find the configuration that produces maximum diagram emission. Excess cable lengths were bundled at center with 30 cm ~ 40 cm.

Each EME reported was calibrated using the R/S signal generator

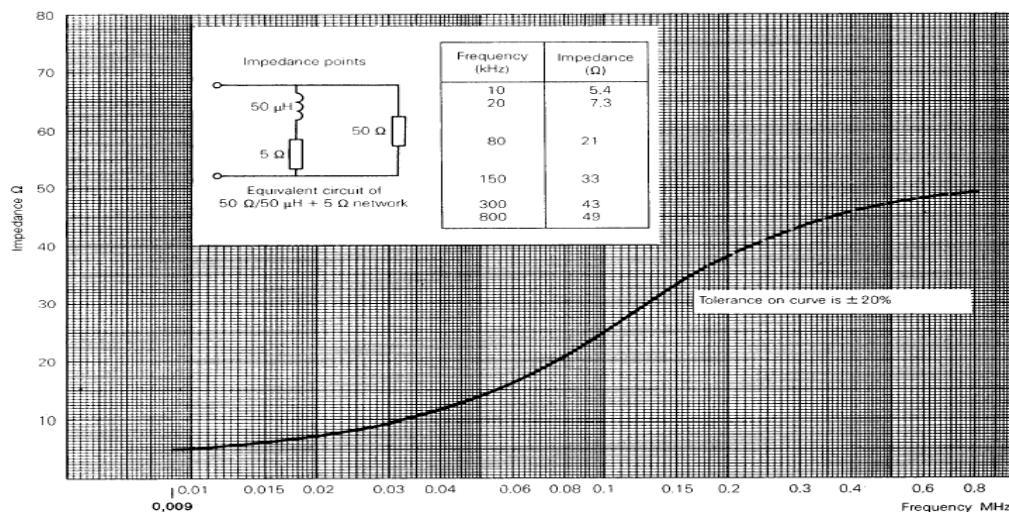


Fig 2. Impedance of LISN



### 5.3 Radiated Emission

Preliminary measurements were conducted 3 m semi anechoic chamber using broadband antennas to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The technology configuration, mode of operation and turntable azimuth with respect to antenna was note for each frequency found.

Final measurements were made 3 m chamber (FCC registration No.: 443957) and/or 10 m OATS (FCC registration No.: 100749).

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

Each frequency found during pre-scan measurements was re-examined and investigated using EMI test receiver. The detector function was set to CISPR quasi-peak mode average mode and the bandwidth of the receiver was set to 120 kHz or 1 MHz depending on the frequency or type of signal.

The EUT, support equipment and interconnecting cables were reconfigured to the setup producing the maximum emission for the frequency and were placed on top of a 0.8 m high non-metallic 1.0 m × 1.5 m table.

The turntable containing the test sample was rotated; the antenna height was varied 1 to 4 meter and stopped at the azimuth or height producing the maximum emission.

Each EME reported was calibrated using the R/S signal generator

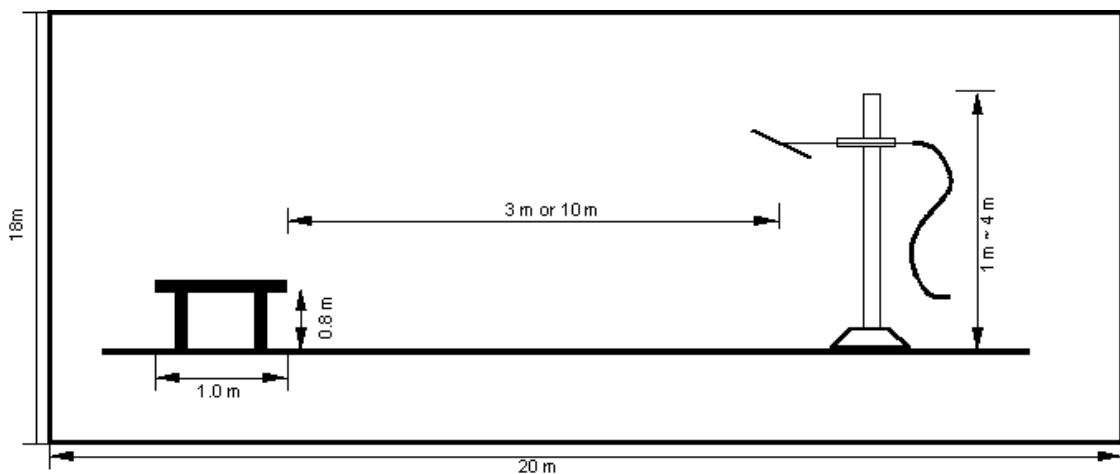


Fig 3. Dimensions of test site.



## 6. Conducted Emission

### 6.1 Operating Environment

Temperature : 24 °C  
Relative Humidity : 45 % R.H.

### 6.2 Test Set-up

The conducted emission measurements were performed in the shielded room.

The EUT was placed on wooden table, 0.8 m heights above the floor, 0.4 m from the reference ground plane (GRP) wall and 0.8 m from AMN.

AMN is bonded on horizontal reference ground plane.

The ground plane, which was electrically bonded to the shield room, ground system and all power lines entering the shield room, were filtered.

### 6.3 Measurement Uncertainty

The measurement uncertainty was calculated in accordance with ISO "Guide to the expression of uncertainty in measurement."

The measurement uncertainty was given with a confidence of 95 %.

| Test Items                            | Uncertainty   | Remark                                |
|---------------------------------------|---------------|---------------------------------------|
| Conducted emission (9 kHz ~ 150 kHz)  | $\pm 2.71$ dB | Confidence levels of 95 % ( $k = 2$ ) |
| Conducted emission (150 kHz ~ 30 MHz) | $\pm 3.34$ dB | Confidence levels of 95 % ( $k = 2$ ) |



#### 6.4 Limit

| RFI Conducted                                               | FCC Limit(dB) Class B |          |
|-------------------------------------------------------------|-----------------------|----------|
| Freq. Range                                                 | Quasi-Peak            | Average  |
| 150 kHz ~ 0.5 MHz                                           | 66 ~ 56*              | 56 ~ 46* |
| 0.5 MHz ~ 5 MHz                                             | 56                    | 46       |
| 5 MHz ~ 30 MHz                                              | 60                    | 50       |
| *Limits decreases linearly with the logarithm of frequency. |                       |          |

#### 6.5 Test Equipment used

| Model Name  | Manufacturer    | Description       | Serial Number | Due to Calibration |
|-------------|-----------------|-------------------|---------------|--------------------|
| ■ - ESCS30  | Rohde & Schwarz | EMI test receiver | 839809/003    | 12. 10. 2010       |
| □ - ESH3-Z5 | Rohde & Schwarz | LISN              | 838979/020    | 12. 10. 2010       |
| ■ - ESH2-Z5 | Rohde & Schwarz | LISN              | 829991/009    | 12. 10. 2010       |
| □ - ISN T8  | TESEQ. GmbH     | ISN               | 24568         | 11. 09. 2011       |

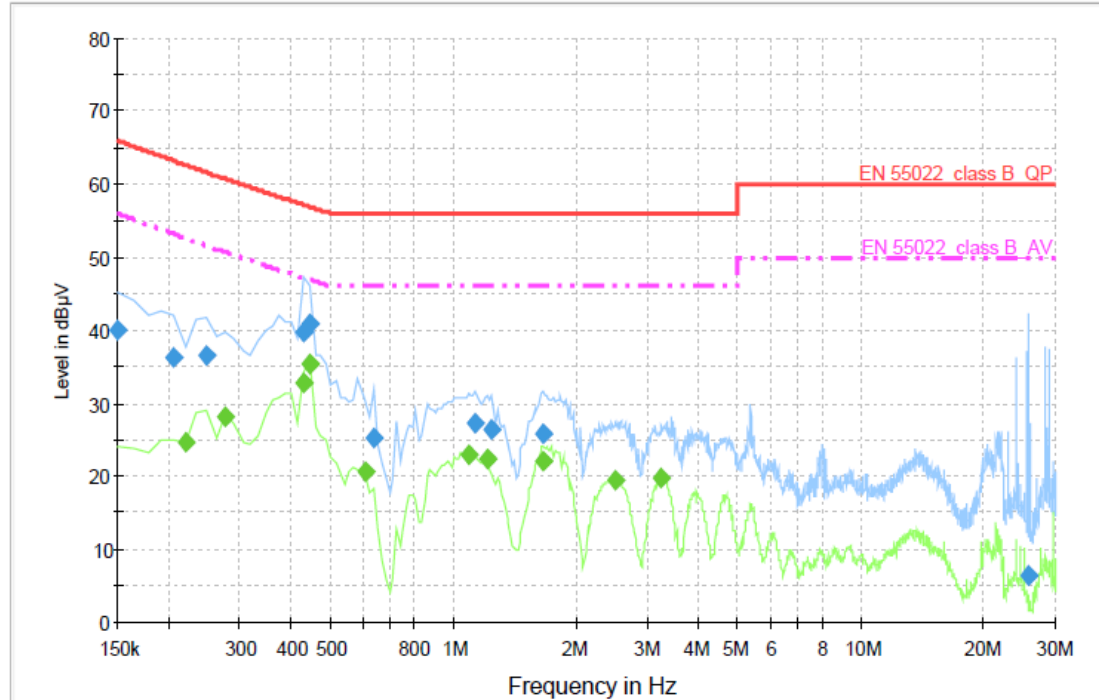
#### 6.6 Test data for Conducted Emission

-. Test Date : December 1, 2010  
-. Resolution Bandwidth : 9 kHz  
-. Frequency Range : 0.15 MHz ~ 30 MHz



◆ Operating condition: Charging mode

## Voltage with 4-Line-LISN\_L1



### Final Measurement Detector 1

| Frequency (MHz) | QuasiPeak (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | PE  | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment |
|-----------------|------------------|-----------------|-----------------|-----|------|------------|-------------|--------------|---------|
| 0.150000        | 39.9             | 1000.000        | 9.000           | GND | L1   | 10.1       | 26.1        | 66.0         |         |
| 0.206000        | 36.2             | 1000.000        | 9.000           | GND | L1   | 10.1       | 27.0        | 63.2         |         |
| 0.248000        | 36.5             | 1000.000        | 9.000           | GND | L1   | 10.1       | 25.1        | 61.6         |         |
| 0.430000        | 39.7             | 1000.000        | 9.000           | GND | L1   | 10.1       | 17.5        | 57.2         |         |
| 0.444000        | 40.9             | 1000.000        | 9.000           | GND | L1   | 10.1       | 16.0        | 56.9         |         |
| 0.640000        | 25.1             | 1000.000        | 9.000           | GND | L1   | 10.1       | 30.9        | 56.0         |         |
| 1.130000        | 27.3             | 1000.000        | 9.000           | GND | L1   | 10.1       | 28.7        | 56.0         |         |
| 1.242000        | 26.4             | 1000.000        | 9.000           | GND | L1   | 10.1       | 29.6        | 56.0         |         |
| 1.662000        | 25.8             | 1000.000        | 9.000           | GND | L1   | 10.1       | 30.2        | 56.0         |         |
| 25.812000       | 6.3              | 1000.000        | 9.000           | GND | L1   | 11.2       | 53.7        | 60.0         |         |

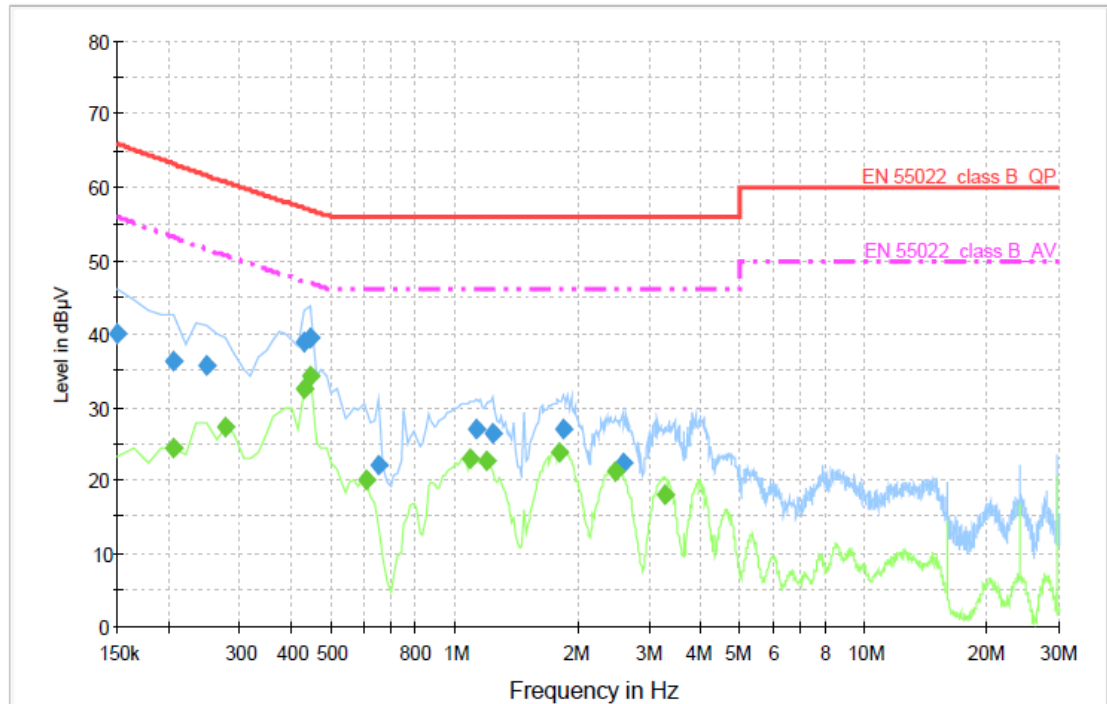
### Final Measurement Detector 2

| Frequency (MHz) | Average (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | PE  | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment |
|-----------------|----------------|-----------------|-----------------|-----|------|------------|-------------|--------------|---------|
| 0.220000        | 24.6           | 1000.000        | 9.000           | GND | L1   | 10.1       | 28.0        | 52.6         |         |
| 0.276000        | 28.1           | 1000.000        | 9.000           | GND | L1   | 10.1       | 22.6        | 50.7         |         |
| 0.430000        | 32.8           | 1000.000        | 9.000           | GND | L1   | 10.1       | 14.3        | 47.1         |         |
| 0.444000        | 35.4           | 1000.000        | 9.000           | GND | L1   | 10.1       | 11.5        | 46.9         |         |
| 0.612000        | 20.4           | 1000.000        | 9.000           | GND | L1   | 10.1       | 25.6        | 46.0         |         |
| 1.088000        | 23.0           | 1000.000        | 9.000           | GND | L1   | 10.1       | 23.0        | 46.0         |         |
| 1.214000        | 22.2           | 1000.000        | 9.000           | GND | L1   | 10.1       | 23.8        | 46.0         |         |
| 1.662000        | 21.9           | 1000.000        | 9.000           | GND | L1   | 10.1       | 24.1        | 46.0         |         |
| 2.502000        | 19.6           | 1000.000        | 9.000           | GND | L1   | 10.2       | 26.4        | 46.0         |         |
| 3.244000        | 19.6           | 1000.000        | 9.000           | GND | L1   | 10.2       | 26.4        | 46.0         |         |

< Fig 4. Conducted emission result (Live line)>



## Voltage with 4-Line-LISN\_N



## Final Measurement Detector 1

| Frequency (MHz) | QuasiPeak (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | PE  | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|-----------------|------------------|-----------------|-----------------|-----|------|------------|-------------|--------------|---------|
| 0.150000        | 39.9             | 1000.000        | 9.000           | GND | N    | 10.1       | 26.1        | 66.0         |         |
| 0.206000        | 36.4             | 1000.000        | 9.000           | GND | N    | 10.1       | 26.8        | 63.2         |         |
| 0.248000        | 35.7             | 1000.000        | 9.000           | GND | N    | 10.1       | 25.9        | 61.6         |         |
| 0.430000        | 38.9             | 1000.000        | 9.000           | GND | N    | 10.1       | 18.3        | 57.2         |         |
| 0.444000        | 39.4             | 1000.000        | 9.000           | GND | N    | 10.1       | 17.5        | 56.9         |         |
| 0.654000        | 22.1             | 1000.000        | 9.000           | GND | N    | 10.1       | 33.9        | 56.0         |         |
| 1.130000        | 27.1             | 1000.000        | 9.000           | GND | N    | 10.1       | 28.9        | 56.0         |         |
| 1.242000        | 26.4             | 1000.000        | 9.000           | GND | N    | 10.1       | 29.6        | 56.0         |         |
| 1.844000        | 27.1             | 1000.000        | 9.000           | GND | N    | 10.2       | 28.9        | 56.0         |         |
| 2.572000        | 22.4             | 1000.000        | 9.000           | GND | N    | 10.2       | 33.6        | 56.0         |         |

## Final Measurement Detector 2

| Frequency (MHz) | Average (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | PE  | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) | Comment |
|-----------------|----------------|-----------------|-----------------|-----|------|------------|-------------|--------------|---------|
| 0.206000        | 24.3           | 1000.000        | 9.000           | GND | N    | 10.1       | 28.9        | 53.2         |         |
| 0.276000        | 27.2           | 1000.000        | 9.000           | GND | N    | 10.1       | 23.5        | 50.7         |         |
| 0.430000        | 32.4           | 1000.000        | 9.000           | GND | N    | 10.1       | 14.7        | 47.1         |         |
| 0.444000        | 34.2           | 1000.000        | 9.000           | GND | N    | 10.1       | 12.7        | 46.9         |         |
| 0.612000        | 19.9           | 1000.000        | 9.000           | GND | N    | 10.1       | 26.1        | 46.0         |         |
| 1.088000        | 22.9           | 1000.000        | 9.000           | GND | N    | 10.1       | 23.1        | 46.0         |         |
| 1.200000        | 22.6           | 1000.000        | 9.000           | GND | N    | 10.1       | 23.4        | 46.0         |         |
| 1.802000        | 23.8           | 1000.000        | 9.000           | GND | N    | 10.2       | 22.2        | 46.0         |         |
| 2.460000        | 21.0           | 1000.000        | 9.000           | GND | N    | 10.2       | 25.0        | 46.0         |         |
| 3.258000        | 17.9           | 1000.000        | 9.000           | GND | N    | 10.2       | 28.1        | 46.0         |         |

< Fig 5. Conducted emission result (Neutral line)>

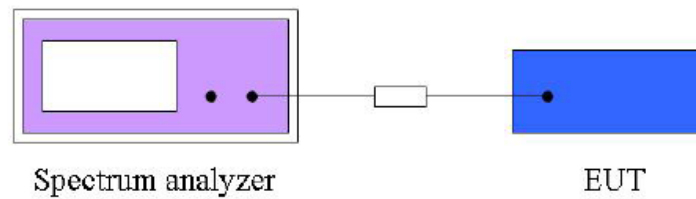


## 7. Number Of Hopping Frequency Used

### 7.1 Operating Environment

Temperature : 24.0 °C  
Relative Humidity : 43.0 % R.H.

### 7.2 Test Set-up (Layout)



### 7.3 Limit

At least 15 channels frequencies, and should be equally spaced

### 7.4 Test Equipment used

| Model Name | Manufacturer    | Description       | Serial Number | Due to Calibration |
|------------|-----------------|-------------------|---------------|--------------------|
| ■ - ESIB26 | Rohde & Schwarz | EMI Test Receiver | 830482/010    | 12. 11. 2010       |

### 7.5 Test Result

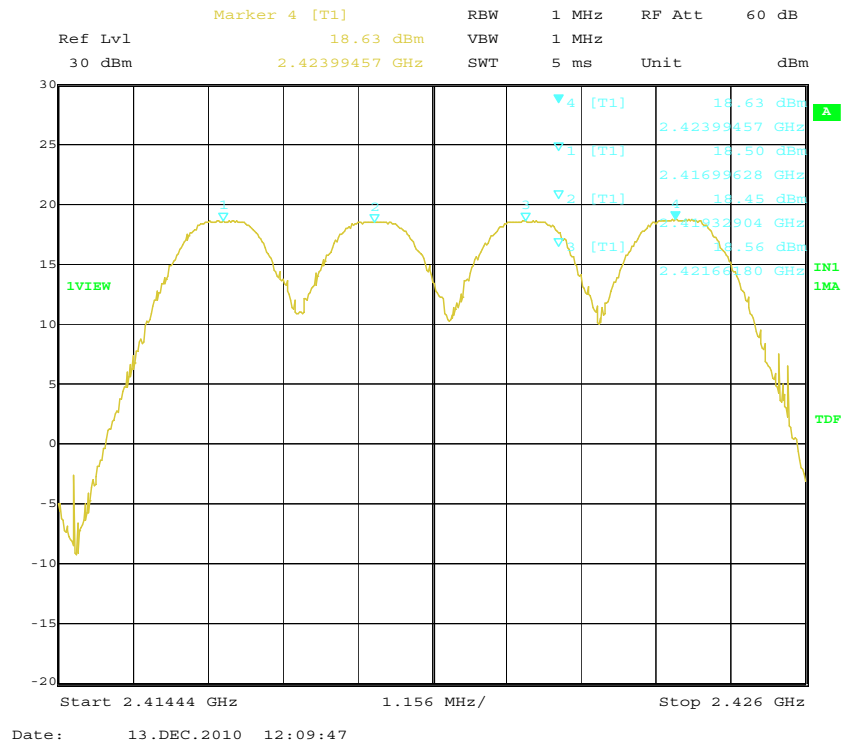
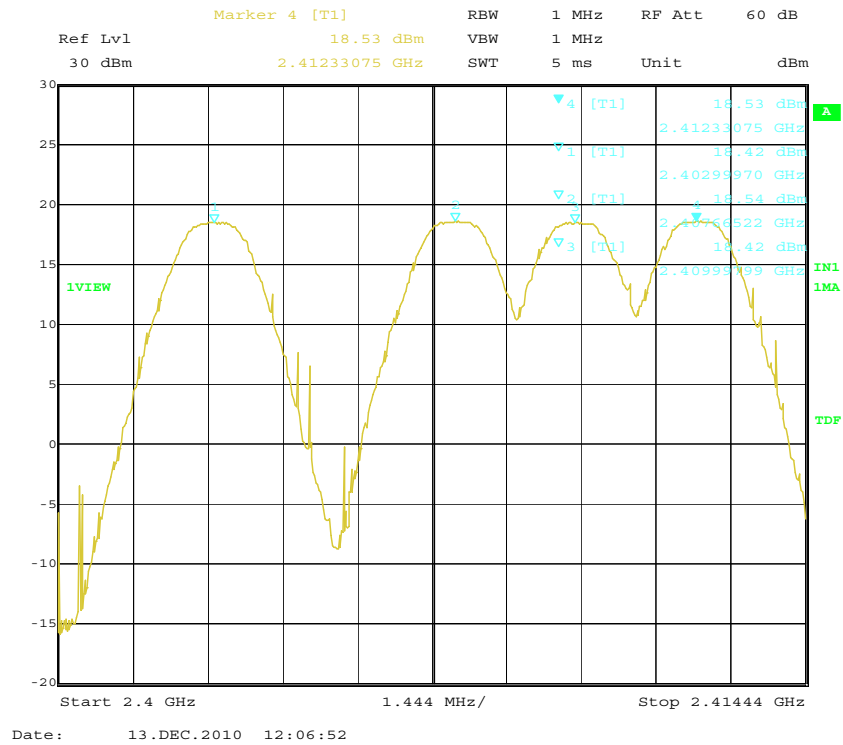
- Test Date : December 1, 2010  
- Reference Standard : Part 15 Subpart C, Sec. 15.247(a)(1)(iii)  
- Modulation : GFSK  
- Operating Condition : RF transmitting mode  
- Power Source : DC 7.4 V supplied from the Li-on battery

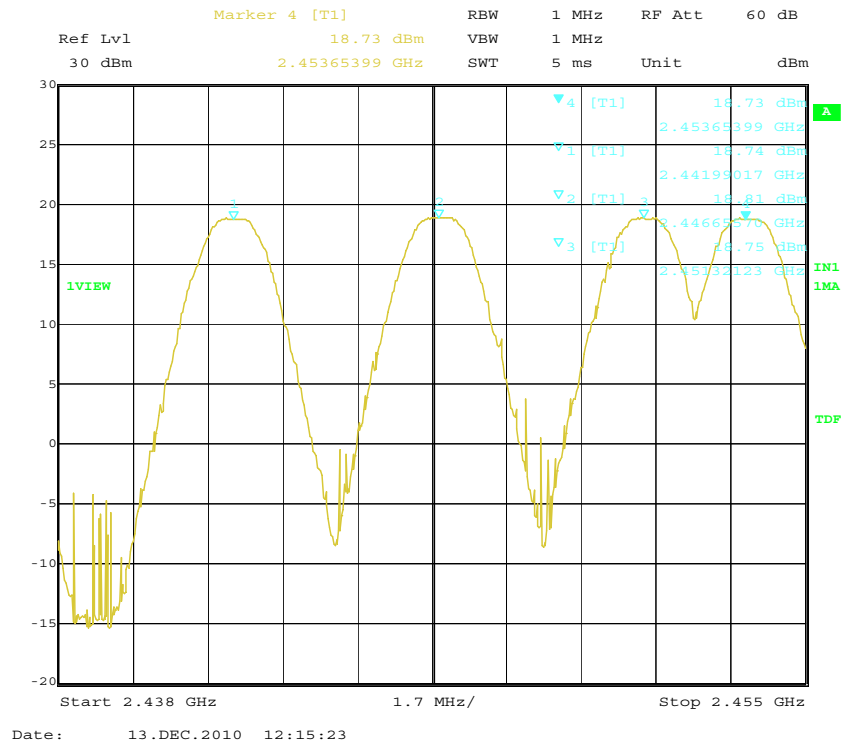
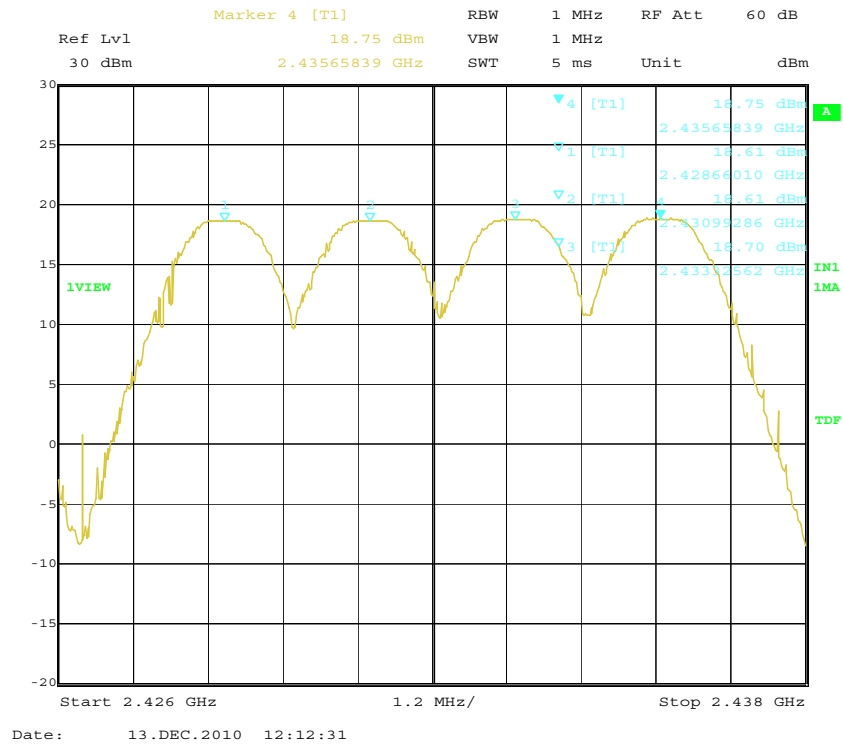
| Modulation | Total channel No. | Hopping channel No. | Limit | Result   |
|------------|-------------------|---------------------|-------|----------|
| GFSK       | 235               | 24                  | > 15  | Complies |

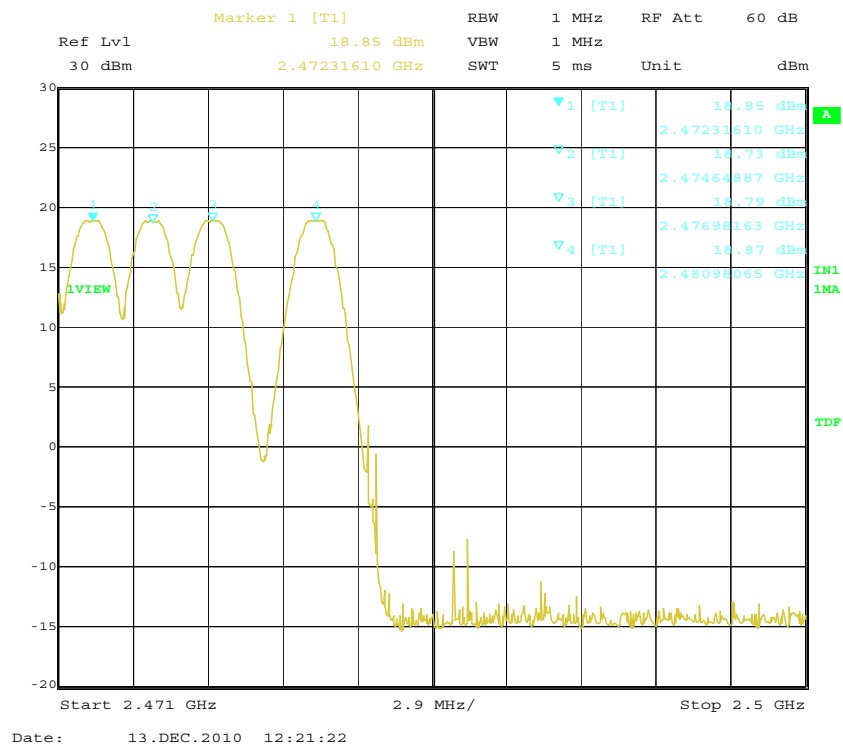
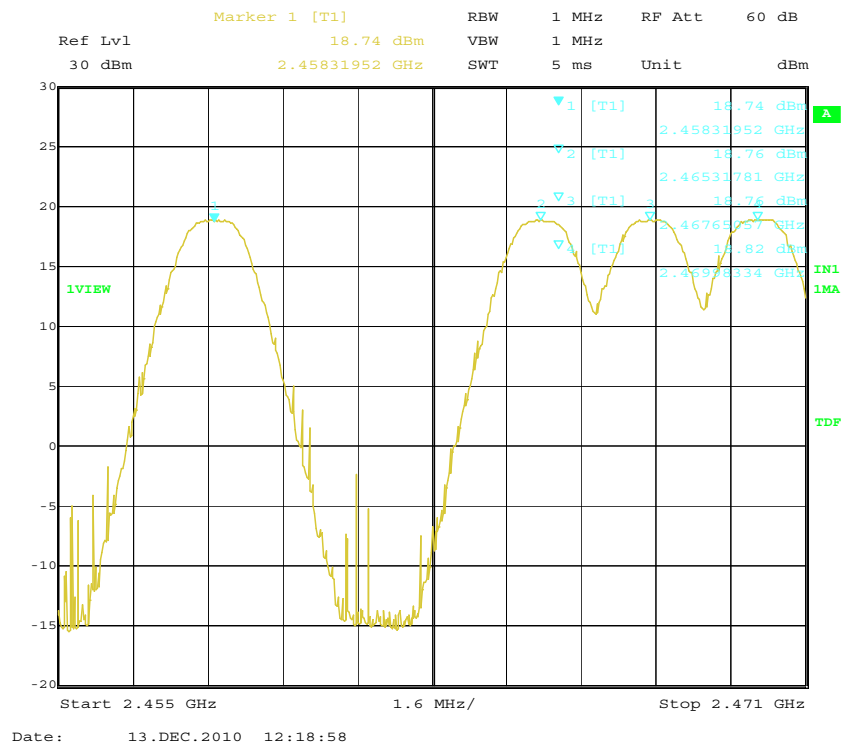




### Number of Hopping frequency used Plot on Configuration GFSK







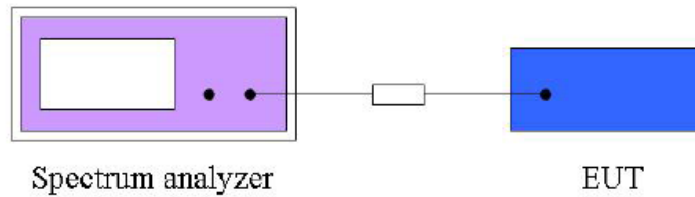


## 8. Dwell Time On Each Channel

### 8.1 Operating Environment

Temperature : 24.0 °C  
Relative Humidity : 43.0 % R.H.

### 8.2 Test Set-up (Layout)



### 8.3 Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

### 8.4 Test Equipment used

| Model Name | Manufacturer    | Description       | Serial Number | Due to Calibration |
|------------|-----------------|-------------------|---------------|--------------------|
| ■ - ESIB26 | Rohde & Schwarz | EMI Test Receiver | 830482/010    | 12. 11. 2010       |

### 8.5 Test Result

- Test Date : December 1, 2010  
- Reference Standard : Part 15 Subpart C, Sec. 15.247(a)(1)(iii)  
- Modulation : GFSK  
- Operating Condition : RF transmitting mode  
- Power Source : DC 7.4 V supplied from the Li-on battery

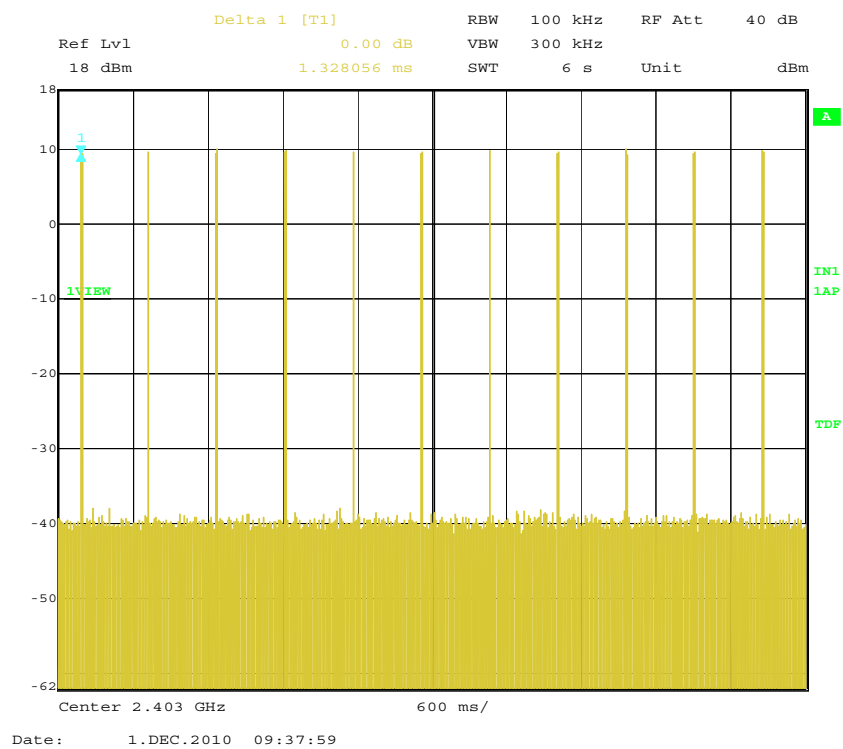
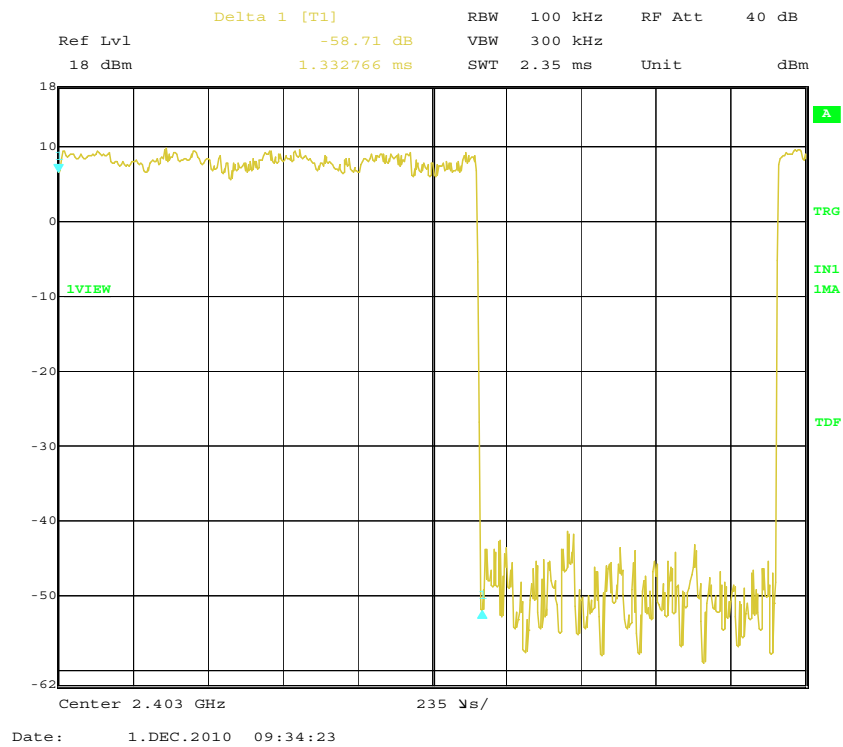
#### Spectrum Parameter

- Attenuation : Auto  
- Span frequency : zero  
- Resolution band width : 100 kHz  
- Video band with : 300 kHz  
- Sweep time : 6 s

| Mode | Number of transmission in a 9.6<br>(24 Hopping * 0.4) | Length of<br>transmission time<br>(ms) | Measured<br>(ms) | Limit<br>(ms) | Result   |
|------|-------------------------------------------------------|----------------------------------------|------------------|---------------|----------|
| GFSK | 19 (times / 6 s) * 1.6 = 30.4                         | 1.33                                   | 40.432           | 400           | Complies |



### Dwell time on each time used Plot on Configuration GFSK



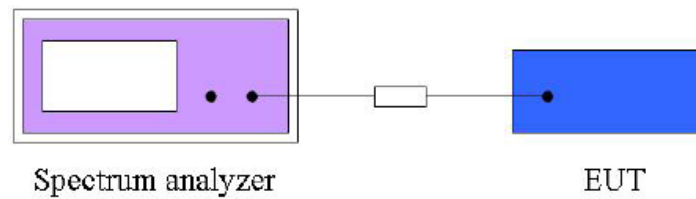


## 9. CHANNEL BANDWIDTH

### 9.1 Operating environment

Temperature : 24.0 °C  
Relative Humidity : 43.0 % R.H.

### 9.2 Test Set-up (Layout)



### 9.3 Limit

For frequency hopping system operating in the 2 400 MHz ~ 2 483.5 MHz, If the 20 dB bandwidth of hopping channel is greater than 25 kHz, two-thirds 20 dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

### 9.4 Test Equipment used

| Model Name | Manufacturer    | Description       | Serial Number | Due to Calibration |
|------------|-----------------|-------------------|---------------|--------------------|
| ■ - ESIB26 | Rohde & Schwarz | EMI Test Receiver | 830482/010    | 12. 11. 2010       |

### 9.5 Test result

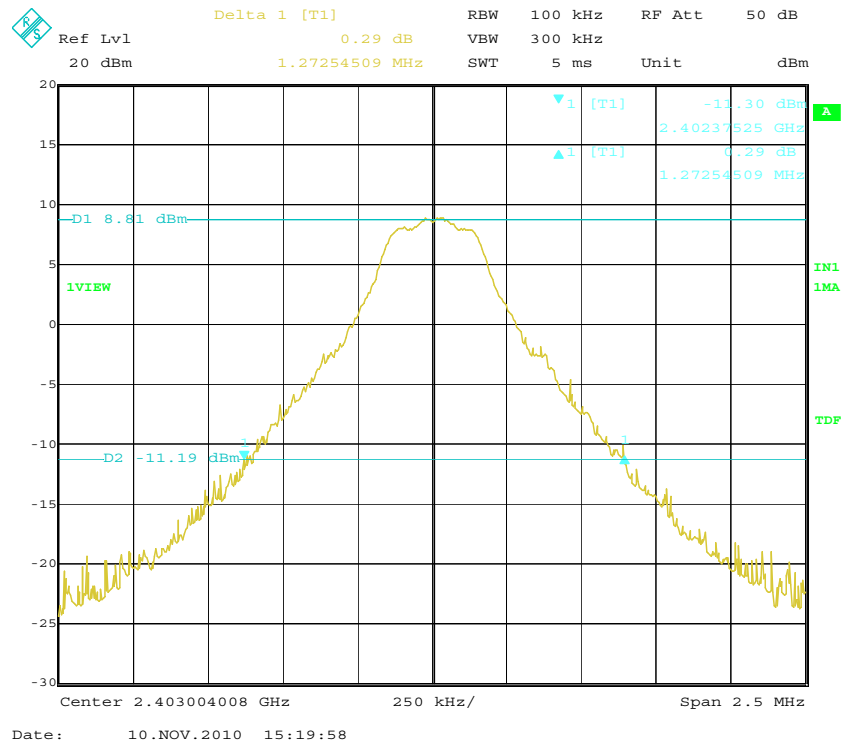
- Test Date : November 10, 2010  
- Reference Standard : Part 15 Subpart C, Sec. 15.247(a)(1)(iii)  
- Modulation : GFSK  
- Operating Condition : RF transmitting mode  
- Power Source : DC 7.4 V supplied from the Li-on battery

#### Spectrum Parameter

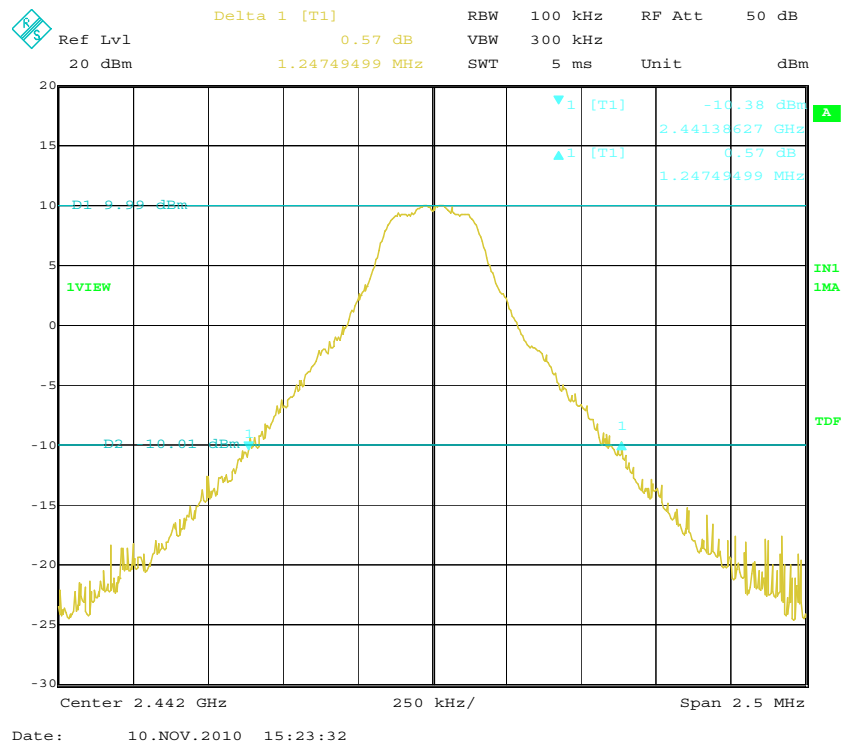
- Attenuation : Auto  
- Span frequency : zero  
- Resolution band width : 100 kHz  
- Video band with : 300 kHz  
- Sweep time : 5 ms

| Channel | Channel frequency (MHz) | 20 dB bandwidth (MHz) | Result   |
|---------|-------------------------|-----------------------|----------|
| 0       | 2 402.999 695           | 1.272                 | Complies |
| 117     | 2 441.990 174           | 1.247                 | Complies |
| 234     | 2 480.980 652           | 1.257                 | Complies |

### Channel bandwidth used Plot on Configuration GFSK/0 CH (2 402.999 695 MHz)

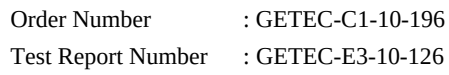


### Channel bandwidth used Plot on Configuration GFSK/117 CH (2 441.990 174 MHz)

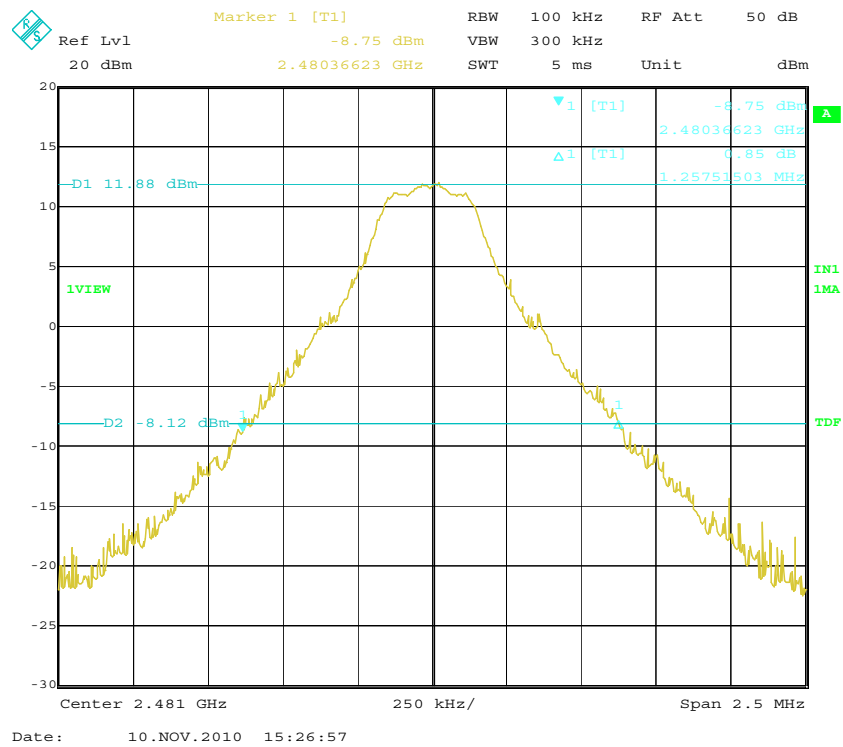


**EUT Type: 2.4 GHz FHSS Transmitter**

**FCC ID.: RE6HUSKY24G**



### Channel bandwidth used Plot on Configuration GFSK/234 CH (2 480.980 652 MHz)





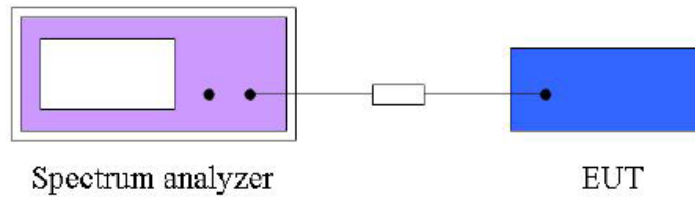


## 10. LIMIT OF HOPPING CHANNEL SEPARATION

### 10.1 Operating Environment

Temperature : 24.0 °C  
Relative Humidity : 44.0 % R.H.

### 10.2 Test Set-up (Layout)



### 10.3 Limit

For frequency hopping system operating in the 2 400 MHz ~ 2 483.5 MHz, If the 20 dB bandwidth of hopping channel is greater than 25 kHz, two-thirds 20 dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

### 10.4 Test Equipment used

| Model Name | Manufacturer    | Description       | Serial Number | Due to Calibration |
|------------|-----------------|-------------------|---------------|--------------------|
| ■ - ESIB26 | Rohde & Schwarz | EMI Test Receiver | 830482/010    | 12. 11. 2010       |

### 10.5 Test Result

- Test Date : November 29, 2010  
- Reference Standard : Part 15 Subpart C, Sec. 15.247(a)(1)  
- Modulation : GFSK  
- Operating Condition : RF transmitting mode  
- Power Source : DC 7.4 V supplied from the Li-on battery

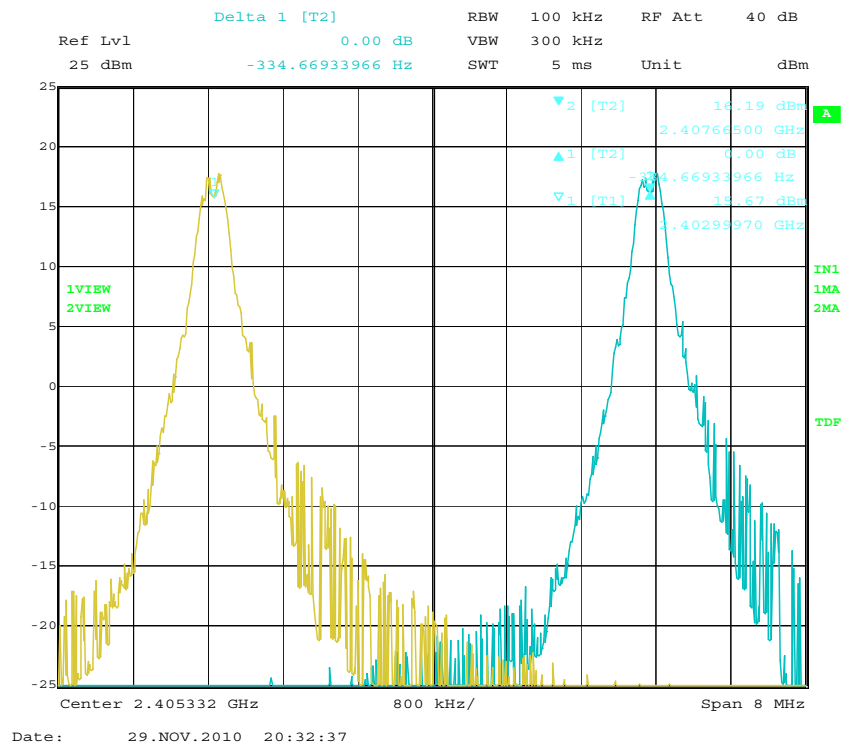
#### Spectrum Parameter

- Attenuation : Auto  
- Span frequency : 8 MHz  
- Resolution band width : 100 kHz  
- Video band with : 300 kHz  
- Sweep time : 5 ms

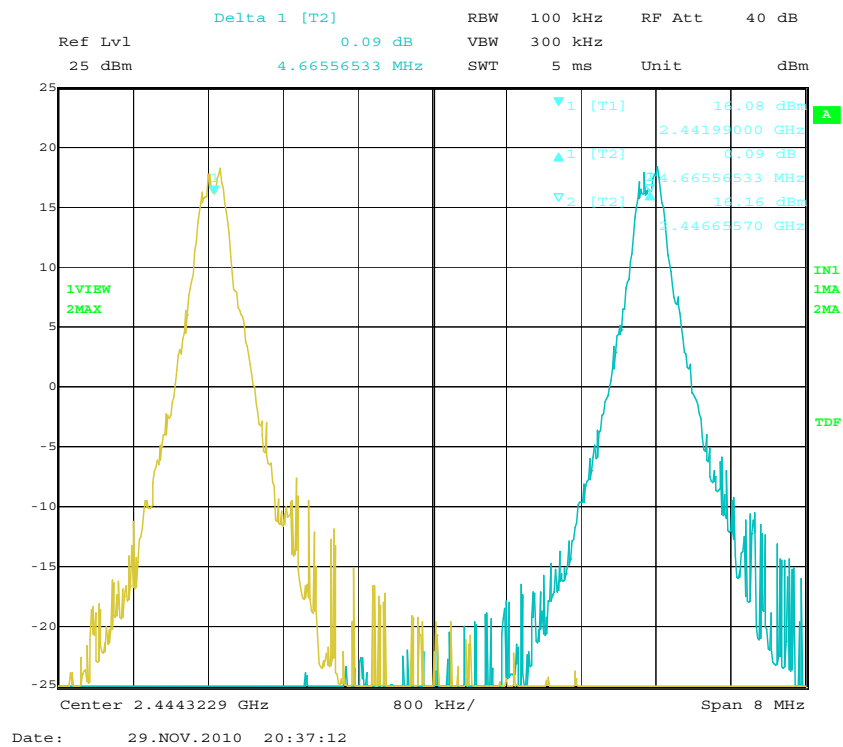
| Channel | Channel frequency (MHz) | Adjacent channel Separation (MHz) | Limit (MHz)<br>[2/3 of 20 dB bandwidth] | Result   |
|---------|-------------------------|-----------------------------------|-----------------------------------------|----------|
| 0       | 2 402.999 695           | 4.66                              | > 0.848                                 | Complies |
| 117     | 2 441.990 174           | 4.66                              | > 0.831                                 | Complies |
| 234     | 2 480.980 652           | 3.99                              | > 0.838                                 | Complies |



### Channel separation used Plot on Configuration GFSK/0 CH (2 402.999 695 MHz)

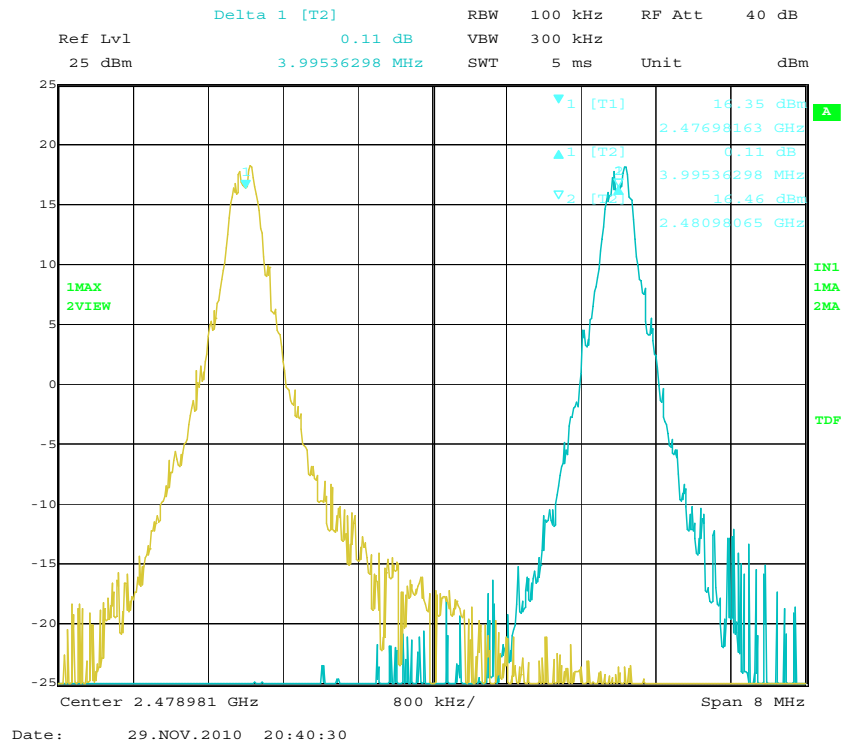


### Channel separation used Plot on Configuration GFSK/117 CH (2 441.990 174 MHz)





Channel separation used Plot on Configuration GFSK/234 CH (2 480.980 652 MHz)



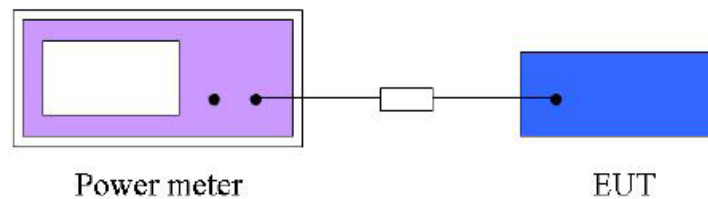


## 11. MAXIMUM PEAK OUTPUT POWER

### 11.1 Operating Environment

Temperature : 24.0 °C  
Relative Humidity : 43.0 % R.H.

### 11.2 Test Set-up (Layout)



### 11.3 Limit

The maximum peak output power measurement is 125 mW

### 11.4 Test Equipment used

| Model Name  | Manufacturer    | Description  | Serial Number | Due to Calibration |
|-------------|-----------------|--------------|---------------|--------------------|
| ■ - NRVD    | Rohde & Schwarz | Power meter  | 837794/048    | 12.11.2010         |
| ■ - NRV-Z32 | Rohde & Schwarz | Power sensor | 100062        | 10.20.2011         |

### 11.5 Test Result

- Test Date : December 1, 2010  
- Reference Standard : Part 15 Subpart C, Sec. 15.247(b)  
- Modulation : GFSK  
- Operating Condition : RF transmitting mode  
- Power Source : DC 7.4 V supplied from the Li-on battery

| Channel | Channel Frequency (MHz) | Peak output power (dBm) | Peak output power (mW) | Limit (mW) | Result   |
|---------|-------------------------|-------------------------|------------------------|------------|----------|
| 0       | 2 402.999 695           | 9.97                    | 9.91                   | 125        | Complies |
| 117     | 2 441.990 174           | 11.54                   | 14.3                   | 125        | Complies |
| 234     | 2 480.980 652           | 13.44                   | 22.1                   | 125        | Complies |

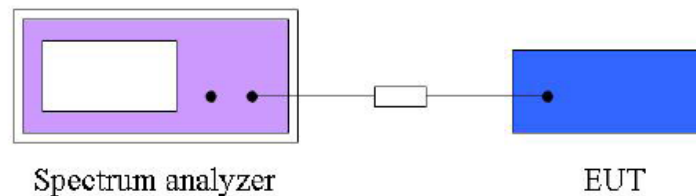


## 12. BAND EDGES MEASUREMENT

### 12.1 Operating Environment

Temperature : 24.0 °C  
Relative Humidity : 43.0 % R.H.

### 12.2 Test Set-up (Layout)



### 12.3 Limit

Below -20 dB of the highest emission level of operating band (in 100 kHz resolution band width)

### 12.4 Test Equipment used

| Model Name | Manufacturer    | Description       | Serial Number | Due to Calibration |
|------------|-----------------|-------------------|---------------|--------------------|
| ■ - ESIB26 | Rohde & Schwarz | EMI Test Receiver | 830482/010    | 12. 11. 2010       |

### 12.5 Test Result

- Test Date : November 10, 2010  
- Reference Standard : Part 15 Subpart C, Sec. 15.247(b)  
- Modulation : GFSK  
- Operating Condition : RF transmitting mode  
- Power Source : DC 7.4 V supplied from the Li-on battery

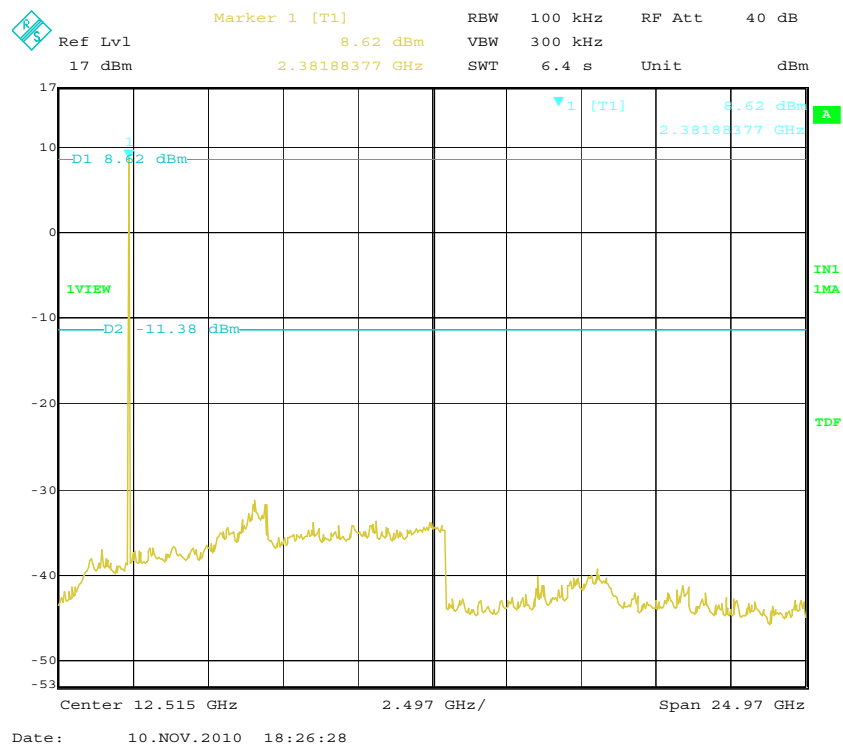
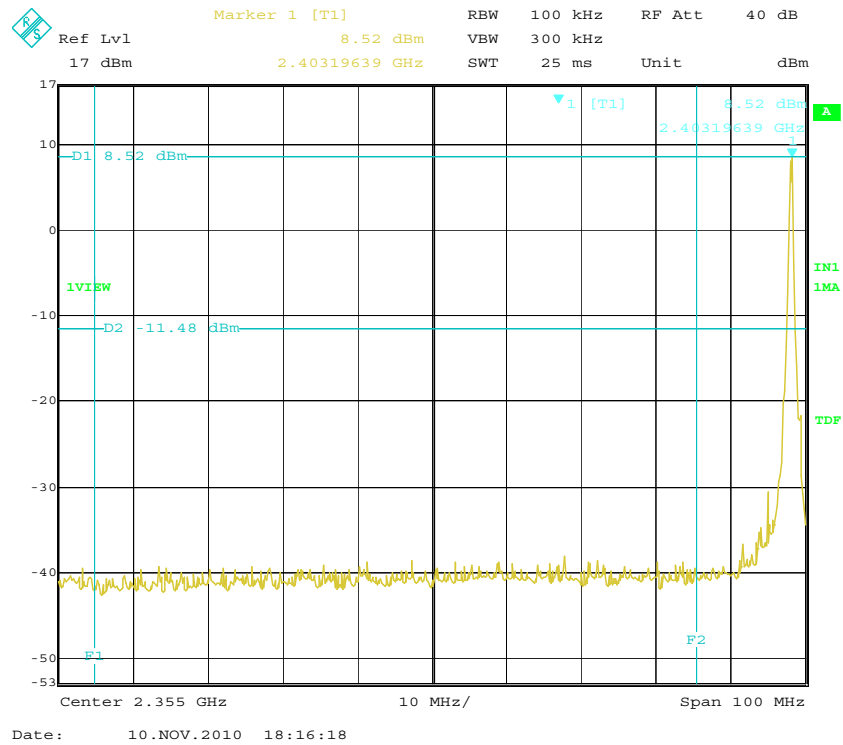
The spectrum plots are attached on the following 8 images, D1 line indicates the highest level, D2 line indicates the 20 dB offset below D1. It shows compliance with the requirement in part 15.247(d)

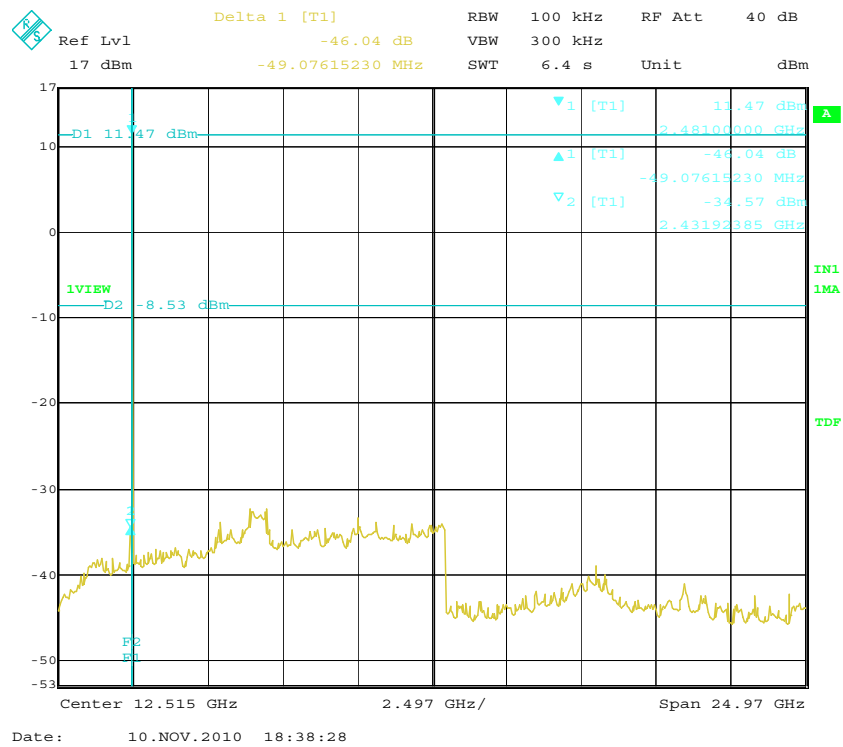
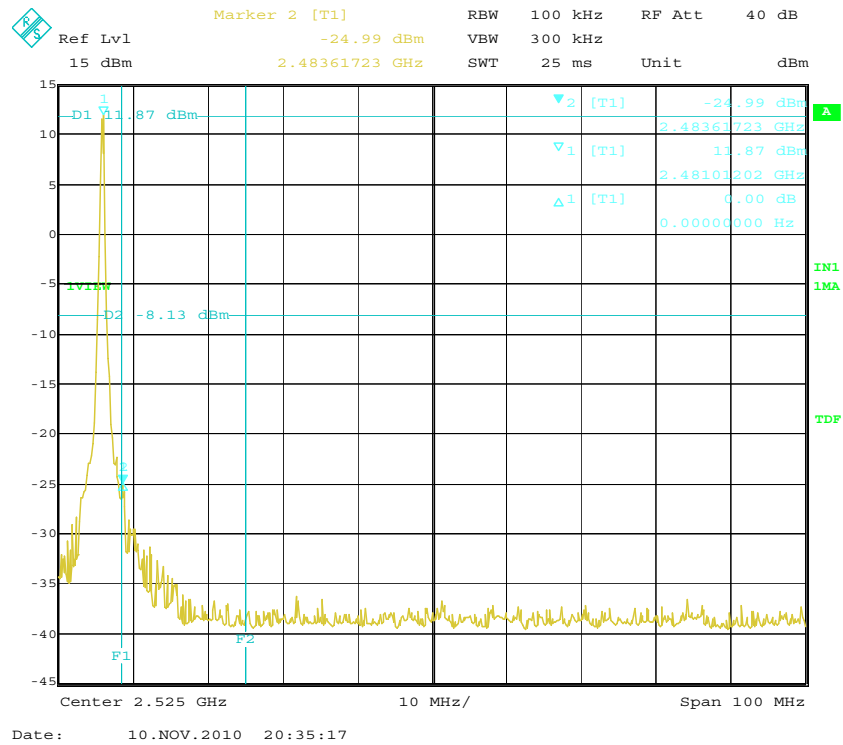
#### Spectrum Parameter

- Attenuation : Auto  
- Resolution bandwidth : 100 kHz  
- Video bandwidth : 100 kHz



### Band edge used Plot on Configuration GFSK







### 13. Radiated Emission

#### 13.1 Operating Environment

Temperature : 24.0 °C  
Relative Humidity : 43.0 % R.H.

#### 13.2 Test Set-up

The formal radiated emission was measured at 3 m distance anechoic chamber.

The EUT was placed on a non-conductive turntable approximately 0.8 m above the ground plane.

The turntable with EUT was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels.

This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

#### 13.3 Measurement Uncertainty

The measurement uncertainty was calculated in accordance with ISO “Guide to the expression of uncertainty in measurement”.

The measurement uncertainty was given with a confidence of 95 %.

| Test Items                                               | Uncertainty | Remark                                |
|----------------------------------------------------------|-------------|---------------------------------------|
| Radiated emission (30 MHz ~ 300 MHz, 3 m, Vertical)      | ± 4.09 dB   | Confidence levels of 95 % ( $k = 2$ ) |
| Radiated emission (30 MHz ~ 300 MHz, 3 m, Horizontal)    | ± 3.78 dB   | Confidence levels of 95 % ( $k = 2$ ) |
| Radiated emission (300 MHz ~ 1 000 MHz, 3 m, Vertical)   | ± 3.85 dB   | Confidence levels of 95 % ( $k = 2$ ) |
| Radiated emission (300 MHz ~ 1 000 MHz, 3 m, Horizontal) | ± 4.11 dB   | Confidence levels of 95 % ( $k = 2$ ) |

#### 13.4 Limit

20 dB in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (microvolt/meter) | Measurement Distance (meters) |
|-------------------|----------------------------------|-------------------------------|
| 0.009 ~ 0.490     | 2400/F (kHz)                     | 300                           |
| 0.490 ~ 1.705     | 2400/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                             |





### 13.5 Test Equipment used

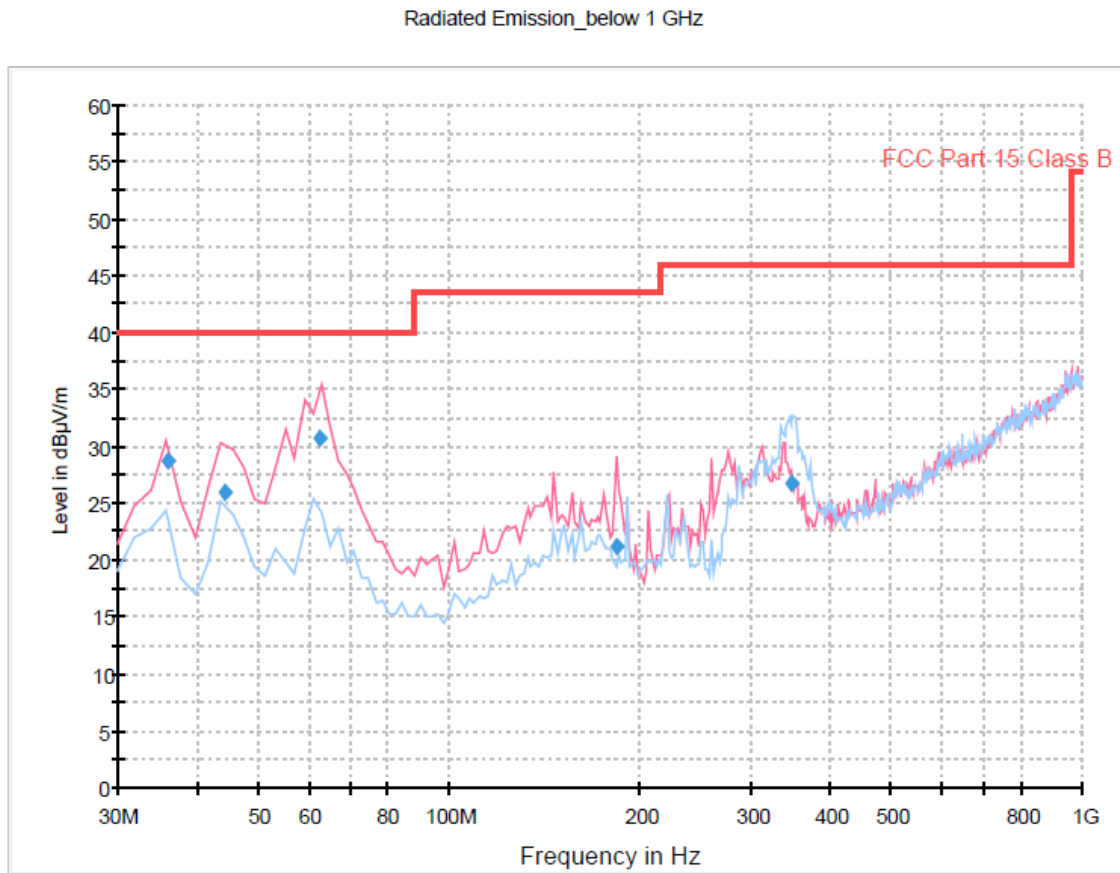
| Model Name                   | Manufacturer    | Description            | Serial Number | Due to Calibration |
|------------------------------|-----------------|------------------------|---------------|--------------------|
| ■ - ESIB26                   | Rohde & Schwarz | EMI Test Receiver      | 830482/010    | 12. 11. 2010       |
| ■ - VULB9160                 | Schwarzbeck     | Broadband test antenna | 3193          | 03. 15. 2012       |
| ■ - MCU066                   | maturo GmbH     | Position Controller    | 1390306       | N/A                |
| ■ - TT2.5SI                  | maturo GmbH     | Turntable              | 1390307       | N/A                |
| ■ - AM4.0                    | maturo GmbH     | Antenna Mast           | 1390308       | N/A                |
| ■ - BBHA9120D                | Schwarzbeck     | Horn antenna           | 207           | 12. 22. 2011       |
| ■ - 3160-09                  | ETS LINDGREN    | Horn antenna           | LM3423        | 04. 06. 2011       |
| ■ - AFS44-00101800-25-10P-44 | MITEQ           | Preamplifier           | 1258942       | 11. 12. 2011       |
| ■ - AFS44-00101800-25-10P-44 | MITEQ           | Preamplifier           | 1258943       | 11. 12. 2011       |

### 13.6 Radiated emission test data

|                                       |                                                                                                                            |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| - Test Date                           | : November 30, 2010                                                                                                        |
| - Reference Standard                  | : Part 15 Subpart C, Sec. 15.247(d)                                                                                        |
| - Modulation / Channel                | : GFSK (0 CH / 117 CH / 234 CH)                                                                                            |
| - Operating Condition                 | : RF transmitting mode                                                                                                     |
| - Measuring Distance                  | : 3 m                                                                                                                      |
| - Spectrum Resolution Bandwidth(6 dB) | : 120 kHz / 1 MHz / 10 Hz / 100 kHz                                                                                        |
| - Detector mode                       | : Peak detector mode / Quasi Peak detector mode / Average detector mode                                                    |
| - Power Source                        | : DC 7.4 V supplied from the Li-on battery                                                                                 |
| - Note                                | 1. The EUT was tested with new battery.<br>2. Through three orthogonal axes were investigated and the worst case is report |



**Worst case result of radiated emission (30 MHz to 1 000 MHz): GFSK**



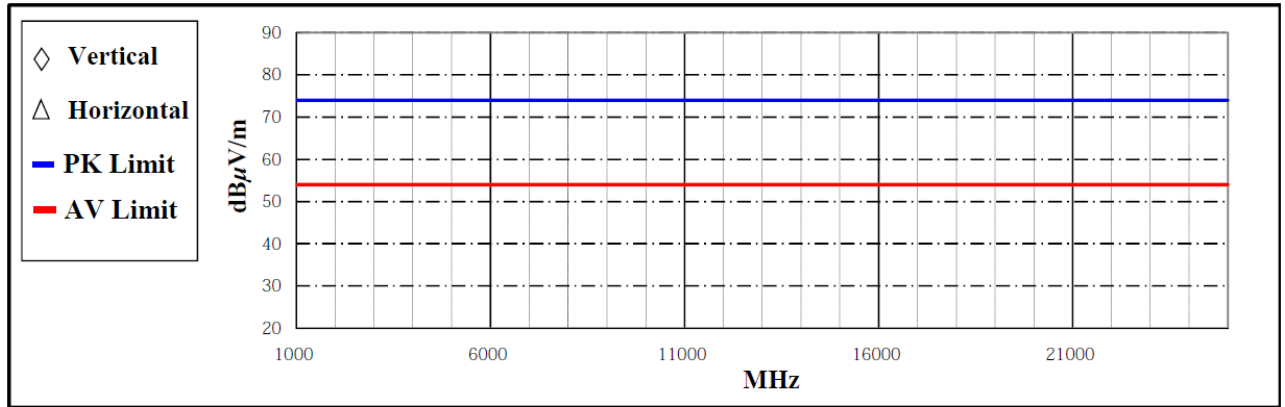
**Final Result 1**

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|-------------|--------------|---------------|------------|-------------|----------------|
| 35.971663       | 28.7               | 1000.0          | 120.000         | 100.0       | V            | 218.0         | 13.0       | 11.3        | 40.0           |
| 44.427214       | 25.9               | 1000.0          | 120.000         | 100.0       | V            | 341.0         | 13.4       | 14.1        | 40.0           |
| 62.666092       | 30.7               | 1000.0          | 120.000         | 100.0       | V            | 52.0          | 13.0       | 9.4         | 40.0           |
| 184.147134      | 21.1               | 1000.0          | 120.000         | 100.0       | V            | 138.0         | 13.7       | 22.4        | 43.5           |
| 348.697595      | 26.7               | 1000.0          | 120.000         | 100.0       | H            | 52.0          | 17.9       | 19.3        | 46.0           |



### Worst case result of radiated emission (1 GHz to 25 GHz): GFSK

| Frequency<br>(MHz) | Measurement Level          |         |        |          |                          | Limit<br>(dBμ V/m) |      | Margin<br>(dB) |       | Positioning System |        |       |
|--------------------|----------------------------|---------|--------|----------|--------------------------|--------------------|------|----------------|-------|--------------------|--------|-------|
|                    | Reading Value<br>(dBμ V/m) |         | AF     | AMP / CL | Test Result<br>(dBμ V/m) |                    |      |                |       | Pol.               | Height | Angle |
|                    | Peak                       | Average | (dB/m) | (dB)     | Peak                     | Average            | Peak | Average        | (H/V) | (cm)               | (°)    |       |
|                    | All frequency              |         |        |          |                          | <<                 | <<   |                |       |                    | -      | -     |



\*Comment : AMP/CL\_Cable loss value + AMP gain value  
AF : Antenna factor value  
Pol. : H(Horizontal), V(Vertical)

### Result of radiated emission (Band Edge)

0 CH

| Frequency<br>(MHz) | Measurement Level        |         |        |          |                          |         | Limit<br>(dBμ V/m) |         | Margin<br>(dB) |       | Positioning System |        |       |
|--------------------|--------------------------|---------|--------|----------|--------------------------|---------|--------------------|---------|----------------|-------|--------------------|--------|-------|
|                    | Reading Value<br>(dBμ V) |         | AF     | AMP / CL | Test Result<br>(dBμ V/m) |         |                    |         |                |       | Pol.               | Height | Angle |
|                    | Peak                     | Average | (dB/m) | (dB)     | Peak                     | Average | Peak               | Average | (H/V)          | (cm)  | (°)                |        |       |
| 2402.99            | 114.12                   | 105.02  | 26.99  | -36.91   | 104.20                   | 95.10   | 74.00              | 54.00   | -              | -     | -                  | -      |       |
| 2382.77            | 72.91                    | 52.31   | 26.94  | -36.95   | 62.90                    | 42.30   | 74.00              | 54.00   | 11.10          | 11.70 | -                  | -      |       |

234 CH

| Frequency<br>(MHz) | Measurement Level        |         |        |          |                          |         | Limit<br>(dBμ V/m) |       | Margin<br>(dB) |      | Positioning System |        |       |
|--------------------|--------------------------|---------|--------|----------|--------------------------|---------|--------------------|-------|----------------|------|--------------------|--------|-------|
|                    | Reading Value<br>(dBμ V) |         | AF     | AMP / CL | Test Result<br>(dBμ V/m) |         |                    |       |                |      | Pol.               | Height | Angle |
|                    | Peak                     | Average | (dB/m) | (dB)     | Peak                     | Average | (H/V)              | (cm)  | (°)            |      |                    |        |       |
| 2480.98            | 116.29                   | 106.59  | 27.20  | -36.79   | 106.70                   | 97.00   | 74.00              | 54.00 | -              | -    | -                  | -      | -     |
| 2483.50            | 72.97                    | 56.07   | 27.21  | -36.78   | 63.40                    | 46.50   | 74.00              | 54.00 | 10.60          | 7.50 | -                  | -      | -     |

Note:

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

Emission level (dBμV/m) = 20 log Emission level (μV/m).

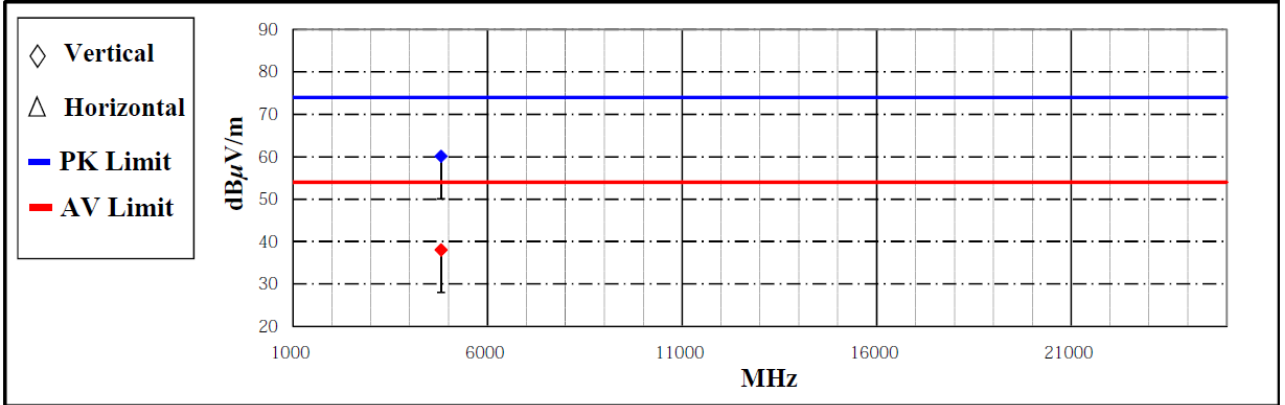
Corrected reading: Antenna factor + Cable loss + Preamplifier gain + Read value = Test result



### Result of radiated emission (1 GHz to 10<sup>th</sup> harmonics)

(GFSK, 0 CH / 2 402.999 695 MHz)

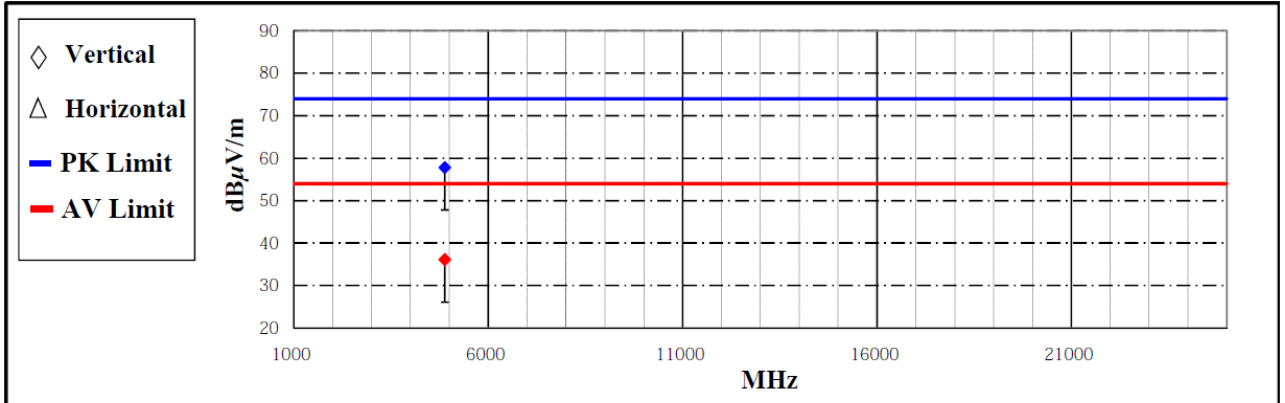
| Frequency<br>(MHz) | Measurement Level          |         |        |          | Limit<br>(dBμ V/m) |         | Margin<br>(dB) |         | Positioning System |        |                 |
|--------------------|----------------------------|---------|--------|----------|--------------------|---------|----------------|---------|--------------------|--------|-----------------|
|                    | Reading Value<br>(dBμ V/m) |         | AF     | AMP / CL |                    |         |                |         | Pol.               | Height | Angle           |
|                    | Peak                       | Average | (dB/m) | (dB)     | Peak               | Average | Peak           | Average | (H/V)              | (cm)   | (°)             |
| 4806.61            | 61.73                      | 39.63   | 31.20  | -32.83   | 60.10              | 38.00   | 74.00          | 54.00   | 13.90              | 16.00  | V<br>113<br>123 |



\*Comment : AMP/CL\_Cable loss value + AMP gain value  
AF : Antenna factor value  
Pol. : H(Horizontal), V(Vertical)

(GFSK, 117 CH / 2 441.990 174 MHz)

| Frequency<br>(MHz) | Measurement Level          |         |        |          | Limit<br>(dBμ V/m) |         | Margin<br>(dB) |         | Positioning System |        |                 |
|--------------------|----------------------------|---------|--------|----------|--------------------|---------|----------------|---------|--------------------|--------|-----------------|
|                    | Reading Value<br>(dBμ V/m) |         | AF     | AMP / CL |                    |         |                |         | Pol.               | Height | Angle           |
|                    | Peak                       | Average | (dB/m) | (dB)     | Peak               | Average | Peak           | Average | (H/V)              | (cm)   | (°)             |
| 4884.73            | 59.23                      | 37.53   | 31.34  | -32.77   | 57.80              | 36.10   | 74.00          | 54.00   | 16.20              | 17.90  | V<br>100<br>135 |

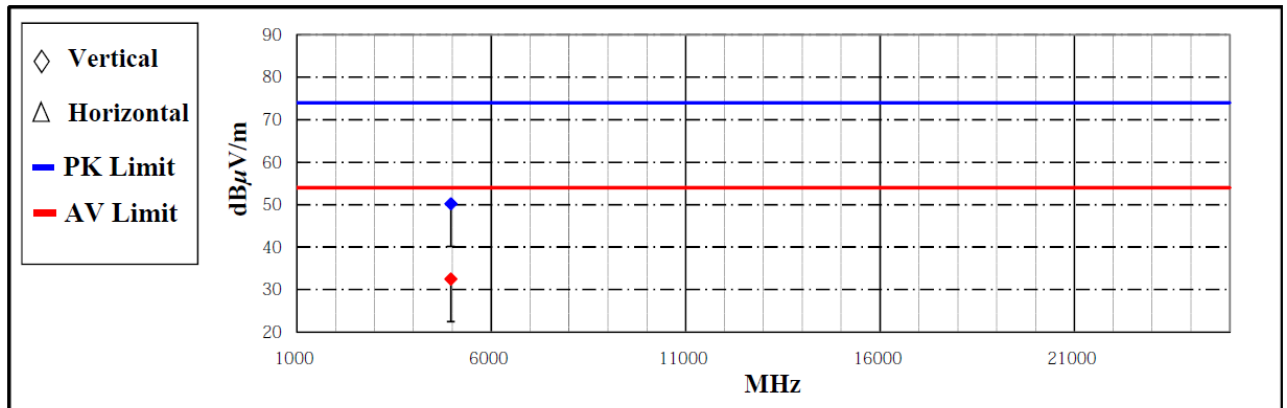


\*Comment : AMP/CL\_Cable loss value + AMP gain value  
AF : Antenna factor value  
Pol. : H(Horizontal), V(Vertical)



(GFSK, 234 CH / 2 480.980 652 MHz)

| Frequency<br>(MHz) | Measurement Level          |         |        |          |                          |         | Limit<br>(dBμ V/m) |         | Margin<br>(dB) |       | Positioning System |        |       |
|--------------------|----------------------------|---------|--------|----------|--------------------------|---------|--------------------|---------|----------------|-------|--------------------|--------|-------|
|                    | Reading Value<br>(dBμ V/m) |         | AF     | AMP / CL | Test Result<br>(dBμ V/m) |         |                    |         |                |       | Pol.               | Height | Angle |
|                    | Peak                       | Average | (dB/m) | (dB)     | Peak                     | Average | Peak               | Average | (H/V)          | (cm)  | (°)                |        |       |
|                    | 4962.11                    | 51.42   | 33.72  | 31.48    | -32.70                   | 50.20   | 32.50              | 74.00   | 54.00          | 23.80 | 21.50              | V      | 100   |



\*Comment : AMP/CL\_Cable loss value + AMP gain value  
AF : Antenna factor value  
Pol. : H(Horizontal), V(Vertical)

Note:

Emission level (dBμV/m) = 20 log Emission level (μV/m).

Corrected Reading: Reading value + AF (Antenna Factor) +AMP/CL (Cable Loss + Preamp factor) = Test result