# FCC PART 15C
# TEST REPORT
# No. I14N01249-BT

**for**

**Shenzhen Sang Fei Consumer Communications Co., Ltd.**

**WCDMA digital mobile phone**

**Model Name: Philips V387**

**FCC ID: VQRCTV387**

**with**

**Hardware Version: V387_V01**

**Software Version: Philips_V387_V01**

**Issued Date: 2015-01-23**

STTNG
CNAS L0570

**Test Laboratory:**

***FCC 2.948 Listed: No.342690***

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

**Test Laboratory:**

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# REPORT HISTORY

| Report Number | Revision | Description | Issue Date |
|---|---|---|---|
| I14N01249-BT | Rev.0 | 1st edition | 2015-01-23 |

# CONTENTS

# 1. Test Laboratory

## 1.1. Testing Location

Location : CTTL(South Branch)

Address: No.12, ShangSha Innovation and Technology Park, Futian District, Shenzhen, Guangdong, P. R. China 518048

## 1.2. Testing Environment

Normal Temperature: 15-35℃

Extreme Temperature: -20/+55℃

Relative Humidity: 20-75%

## 1.3. Project data

Testing Start Date: 2014-10-29

Testing End Date: 2014-11-13

## 1.4. Signature

Wang Shuai

**(Prepared this test report)**

**Tang Weisheng**

**(Reviewed this test report)**

**Zhang Bojun**

**(Approved this test report)**

# 2. Client Information

## 2.1. Applicant Information

| | |
|---|---|
| Company Name: | Shenzhen Sang Fei Consumer Communications Co., Ltd. |
| Address: | 11 Science and Technology Road, Shenzhen Hi-tech Industrial Park Nanshan District, Shenzhen, PRC |
| City: | Shenzhen |
| Postal Code: | / |
| Country: | China |
| Telephone: | 0755-26633217 |
| Fax: | 0755-26635272 |

## 2.2. Manufacturer Information

| | |
|---|---|
| Company Name: | Shenzhen Sang Fei Consumer Communications Co., Ltd. |
| Address: | 11 Science and Technology Road, Shenzhen Hi-tech Industrial Park Nanshan District, Shenzhen, PRC |
| City: | Shenzhen |
| Postal Code: | / |
| Country: | China |
| Telephone: | 0755-26633217 |
| Fax: | 0755-26635272 |

# 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

## 3.1. About EUT

| | |
|---|---|
| Description | WCDMA digital mobile phone |
| Model Name | Philips V387 |
| Marketing Name | PHILIPS |
| Frequency Band | 2402MHz~2480MHz |
| Type of Modulation | GFSK/π/4 DQPSK/8DPSK |
| Number of Channels | 79 |
| FCC ID | VQRCTV387 |

Note: Photographs of EUT are shown in ANNEX A of this test report.

## 3.2. Internal Identification of EUT

| EUT ID* | IMEI | HW Version | SW Version |
|---|---|---|---|
| EUT1 | / | V387_V01 | Philips_V387_V01 |

*EUT ID: is used to identify the test sample in the lab internally.

## 3.3. Internal Identification of AE

| AE ID* | Description | Type | SN |
|---|---|---|---|
| AE1 | Charger | A68-502000 | / |
| AE2 | Battery | AB4400AWMC | / |

*AE ID: is used to identify the test sample in the lab internally.

# 4. Reference Documents

## 4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

## 4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

| Reference | Title | Version |
|---|---|---|
| FCC Part15 | FCC CFR 47, Part 15, Subpart C:<br>15.205 Restricted bands of operation;<br>15.209 Radiated emission limits, general requirements;<br>15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz. | Oct, 2013 Edition |
| ANSI C63.4 | Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz | 2003 |
| FCC Public Notice DA 00-705 | Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems | Mar, 2000 |

# 5. Test Results

## 5.1. Summary of Test Results

| No | Test cases | Standard Sub-clause | Verdict |
|---|---|---|---|
| 0 | Antenna Requirement | 15.203 | **P** |
| 1 | Maximum Peak Output Power | 15.247 (b) | **P** |
| 2 | Band Edges Compliance | 15.247 (d) | **P** |
| 3 | Conducted Spurious Emission | 15.247 (d) | **P** |
| 4 | Radiated Spurious Emission | 15.247,15.205,15.209 | **P** |
| 5 | Occupied 20dB bandwidth | 15.247(a) | ***I*** |
| 6 | Time of Occupancy(Dwell Time) | 15.247(a) | **P** |
| 7 | Number of Hopping Channel | 15.247(a) | **P** |
| 8 | Carrier Frequency Separation | 15.247(a) | **P** |
| 9 | AC Powerline Conducted Emission | 15.107,15.207 | **P** |

See **ANNEX B and ANNEX C** for details.

## 5.2. Statements

CTTL has evaluated the test cases requested by the applicant/manufacturer as listed in section 5.1 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2

## 5.3. Terms used in the result table

Terms used in Verdict column

| | |
|---|---|
| P | Pass |
| NA | Not Available |
| F | Fail |

Abbreviations

| | |
|---|---|
| AC | Alternating Current |
| AFH | Adaptive Frequency Hopping |
| BW | Band Width |
| E.I.R.P. | equivalent isotropical radiated power |
| ISM | Industrial, Scientific and Medical |
| R&TTE | Radio and Telecommunications Terminal Equipment |
| RF | Radio Frequency |
| Tx | Transmitter |

## 5.4. Laboratory Environment

**Half-anechoic chamber** (11.20 meters×6.10 meters×5.60 meters) did not exceed following limits:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 30 ℃ |
| Relative humidity | Min. = 30 %, Max. = 60 % |
| Shielding effectiveness | > 110 dB |
| Electrical insulation | > 2M |
| Ground system resistance | < 0.5 |
| Normalized Site Attenuation (NSA) | < ±3.5dB, with 3m of Measuring distance, 30MHz 1000MHz |
| Uniformity of field strength | Between 0 and 6 dB, from 80MHz to 3000 MHz |

**Fully-anechoic chamber** (11.20 meters×6.10 meters×6.60 meters) did not exceed following limits:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 30 ℃ |
| Relative humidity | Min. = 30 %, Max. = 60 % |
| Shielding effectiveness | > 110 dB |
| Electrical insulation | > 2M |
| Ground system resistance | < 0.5 |
| VSWR | Between 0 and 6 dB, from 30MHz to 18 000 MHz |

**Conduction Lab** did not exceed following limits:

| | |
|---|---|
| Temperature | Min.=15 ℃, Max.=30 ℃ |
| Relative humidity | Min.=30 %, Max.= 60 % |
| Shielding effectiveness | > 80 dB |
| Electrical insulation | > 2M Ω |
| Ground system resistance | < 0.5 Ω |

# 6. Test Facilities Utilized

### Conducted test system

| No. | Equipment | Model | Serial Number | Manufacturer | Calibration Due date | Calibration Period |
|---|---|---|---|---|---|---|
| 1 | Vector Signal Analyzer | FSV40 | 100903 | Rohde & Schwarz | 2015-04-22 | 1 year |
| 2 | Bluetooth Tester | CBT32 | 100584 | Rohde & Schwarz | 2015-01-11 | 1 year |

### Radiated emission test system

| No. | Equipment | Model | Serial Number | Manufacturer | Calibration Due date | Calibration Period |
|---|---|---|---|---|---|---|
| 1 | Chamber | FACT5-2.0 | 4166 | ETS-Lindgren | 2016-05-29 | 3 years |
| 2 | Test Receiver | ESCI | 100701 | Rohde & Schwarz | 2015-07-30 | 1 year |
| 3 | Spectrum Analyzer | FSP40 | 100378 | Rohde & Schwarz | 2015-12-19 | 1 year |
| 4 | BiLog Antenna | VULB9163 | 9163-329 | Schwarzbeck | 2017-01-20 | 3 years |
| 5 | Test Receiver | ESCI | 100702 | Rohde & Schwarz | 2015-07-30 | 1 year |
| 6 | LISN | ESH2-Z5 | 100196 | Rohde & Schwarz | 2015-01-14 | 1 year |
| 7 | Signal Generator | SMR40 | 100541 | Rohde & Schwarz | 2015-12-25 | 1 year |
| 8 | Dual-Ridge Waveguide Horn Antenna | 3117 | 00066577 | ETS-Lindgren | 2016-04-01 | 3 years |
| 9 | Loop Antenna | HLA6120 | 35779 | TESEQ | 2016-02-25 | 3 years |
| 10 | EMI Antenna | 3160-09 | 00118383 | ETS-Lindgren | 2015-09-05 | 3 years |

### Anechoic chamber

Fully anechoic chamber by ETS-Lindgren.

## ANNEX A: EUT photograph

**Pic A-1 Mobile phone**

**Pic A-2 Mobile phone**


**Pic A-3 Battery**


**Pic A-4 Charger**

# ANNEX B: MEASUREMENT RESULTS FOR RECEIVER

## B.0 Antenna requirement

**Measurement Limit:**

| Standard | Requirement |
|---|---|
| FCC CRF Part 15.203 | 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, § 15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded. |

**Conclusion: The Directional gains of antenna used for transmitting is -3.0 dBi.**
**The RF transmitter uses an integrate antenna without connector.**

## B.1 Maximum Peak Output Power

**Measurement Limit:**

| Standard | Limit (dBm) |
|---|---|
| FCC CRF Part 15.247(b)(1) | < 30 |

**Measurement Results:**

| Mode | Test Result (dBm) | | | | | |
|---|---|---|---|---|---|---|
| | 2402MHz (Ch0) | | 2441MHz (Ch39) | | 2480 MHz (Ch78) | |
| GFSK | Fig.1 | 2.32 | Fig.2 | 2.68 | Fig.3 | 3.01 |
| π /4 DQPSK | Fig.4 | 1.51 | Fig.5 | 1.88 | Fig.6 | 2.29 |
| 8DPSK | Fig.7 | 1.51 | Fig.8 | 1.87 | Fig.9 | 2.09 |

**Conclusion: Pass**

## B.2 Band Edges Compliance

**Measurement Limit:**

| Standard | Limit (dBc) |
|---|---|
| FCC 47 CFR Part 15.247 (d) | > 20 |

**Measurement Result:**

| Mode | Channel | Hopping | Test Results | Conclusion |
|---|---|---|---|---|
| GFSK | 0 | ON | Fig.10 | P |
| | 78 | ON | Fig.11 | P |
| π /4 DQPSK | 0 | ON | Fig.12 | P |
| | 78 | ON | Fig.13 | P |
| 8DPSK | 0 | ON | Fig.14 | P |
| | 78 | ON | Fig.15 | P |

| Mode | Channel | Hopping | Test Results | Conclusion |
|---|---|---|---|---|
| GFSK | 0 | OFF | Fig.16 | P |
| | 78 | OFF | Fig.17 | P |
| π /4 DQPSK | 0 | OFF | Fig.18 | P |
| | 78 | OFF | Fig.19 | P |
| 8DPSK | 0 | OFF | Fig.20 | P |
| | 78 | OFF | Fig.21 | P |

**See ANNEX C for test graphs.**

**Conclusion: Pass**

## B.3 Conducted Emission

**Measurement Limit:**

| Standard | Limit |
|---|---|
| FCC 47 CFR Part 15.247 (d) | 20dB below peak output power in 100 kHz bandwidth |

**Measurement Results:**

| MODE | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| GFSK | 0 | 2.402 GHz | Fig.22 | P |
| | | 30 MHz-3GHz | Fig.23 | P |
| | | 3GHz-18GHz | Fig.24 | P |
| | 39 | 2.441 GHz | Fig.25 | P |
| | | 30 MHz-3 GHz | Fig.26 | P |
| | | 3GHz-18GHz | Fig.27 | P |
| | 78 | 2.480 GHz | Fig.28 | P |
| | | 30 MHz-3GHz | Fig.29 | P |
| | | 3GHz-18GHz | Fig.30 | P |
| π /4 DQPSK | 0 | 2.402 GHz | Fig.31 | P |
| | | 30 MHz-3 GHz | Fig.32 | P |
| | | 3GHz-18GHz | Fig.33 | P |
| | 39 | 2.441 GHz | Fig.34 | P |
| | | 30 MHz-3GHz | Fig.35 | P |
| | | 3GHz-18Ghz | Fig.36 | P |
| | 78 | 2.480 GHz | Fig.37 | P |
| | | 30 MHz-3GHz | Fig.38 | P |
| | | 3GHz-18Ghz | Fig.39 | P |
| 8DPSK | 0 | 2.402 GHz | Fig.40 | P |
| | | 30 MHz-3GHz | Fig.41 | P |
| | | 3GHz-18GHz | Fig.42 | P |
| | 39 | 2.441 GHz | Fig.43 | P |
| | | 30 MHz-3GHz | Fig.44 | P |
| | | 3GHz-18GHz | Fig.45 | P |
| | 78 | 2.480 GHz | Fig.46 | P |
| | | 30 MHz-3GHz | Fig.47 | P |
| | | 3GHz-18GHz | Fig.48 | P |
| / | All channel | 18GHz-26GHz | Fig.49 | P |

**See ANNEX C for test graphs.**

**Conclusion: Pass**

## B.4 Radiated Emission

**Measurement Limit:**

| Standard | Limit |
|---|---|
| FCC 47 CFR Part 15.247, 15.205, 15.209 | 20dB below peak output power |

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

**Limit in restricted band:**

| Frequency of emission (MHz) | Field strength(μV/m) | 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 |

**Test Condition**

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

| Frequency of emission (MHz) | RBW/VBW | Sweep Time(s) |
|---|---|---|
| 30-1000 | 120kHz/300kHz | 5 |
| 1000-4000 | 1MHz/3MHz | 15 |
| 4000-18000 | 1MHz/3MHz | 40 |
| 18000-26500 | 1MHz/3MHz | 20 |

**Note**: According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band from 9kHz to 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic.

The measurement results include the horizontal polarization and vertical polarization measurements.

**Measurement Results:**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| GFSK | 0 | 30 MHz ~1 GHz | Fig.50 | P |
| | | 1 GHz ~ 18 GHz | Fig.51 | P |
| | 39 | 30 MHz ~1 GHz | Fig.52 | P |
| | | 1 GHz ~ 18 GHz | Fig.53 | P |
| | 78 | 30 MHz ~1 GHz | Fig.54 | P |
| | | 1 GHz ~ 18 GHz | Fig.55 | P |
| | Power(CH0) | 2.38 GHz ~ 2.45 GHz | Fig.56 | P |
| | Power(CH78) | 2.45 GHz ~ 2.5 GHz | Fig.57 | P |
| π/4 DQPSK | 0 | 30 MHz ~1 GHz | Fig.58 | P |
| | | 1 GHz ~ 18 GHz | Fig.59 | P |
| | 39 | 30 MHz ~1 GHz | Fig.60 | P |
| | | 1 GHz ~ 18 GHz | Fig.61 | P |
| | 78 | 30 MHz ~1 GHz | Fig.62 | P |
| | | 1 GHz ~ 18 GHz | Fig.63 | P |
| | Power(CH0) | 2.38 GHz ~ 2.45 GHz | Fig.64 | P |
| | Power(CH78) | 2.45 GHz ~ 2.5 GHz | Fig.65 | P |
| 8DPSK | 0 | 30 MHz ~1 GHz | Fig.66 | P |
| | | 1 GHz ~ 18 GHz | Fig.67 | P |
| | 39 | 30 MHz ~1 GHz | Fig.68 | P |
| | | 1 GHz ~ 18 GHz | Fig.69 | P |
| | 78 | 30 MHz ~1 GHz | Fig.70 | P |
| | | 1 GHz ~ 18 GHz | Fig.71 | P |
| | Power(CH0) | 2.38 GHz ~ 2.45 GHz | Fig.72 | P |
| | Power(CH78) | 2.45 GHz ~ 2.5 GHz | Fig.73 | P |
| / | All channels | 18 GHz~ 26.5 GHz | Fig.74 | P |

**GFSK CH0 (1-18GHz)**

| Frequency (MHz) | Average-Clear Write | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14541.000 | 45.2 | H | 12.6 | 8.8 | 54.0 |
| 14974.000 | 45.9 | H | 13.8 | 8.1 | 54.0 |
| 15731.000 | 47.6 | H | 14.0 | 6.4 | 54.0 |
| 16199.000 | 47.8 | H | 14.4 | 6.2 | 54.0 |
| 16821.000 | 48.4 | H | 15.5 | 5.6 | 54.0 |
| 17352.000 | 48.1 | H | 15.5 | 5.9 | 54.0 |

**GFSK CH0 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14394.000 | 57.9 | H | 13.4 | 16.1 | 74.0 |
| 15056.000 | 57.8 | H | 13.2 | 16.2 | 74.0 |
| 15828.000 | 59.2 | H | 14.4 | 14.8 | 74.0 |
| 16240.000 | 60.1 | H | 14.5 | 13.9 | 74.0 |
| 16839.000 | 60.6 | H | 15.6 | 13.4 | 74.0 |
| 17308.000 | 60.7 | V | 15.4 | 13.3 | 74.0 |

**GFSK CH39 (1-18GHz)**

| Frequency (MHz) | Average-Clear Write | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14450.000 | 45.2 | H | 13.1 | 8.8 | 54.0 |
| 15060.000 | 45.8 | H | 13.2 | 8.2 | 54.0 |
| 15769.000 | 47.6 | H | 14.1 | 6.4 | 54.0 |
| 16183.000 | 48.0 | H | 14.5 | 6.0 | 54.0 |
| 16785.000 | 48.6 | H | 15.3 | 5.4 | 54.0 |
| 17316.000 | 48.3 | H | 15.4 | 5.7 | 54.0 |

**GFSK CH39 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14422.000 | 57.4 | H | 13.3 | 16.6 | 74.0 |
| 15092.000 | 58.6 | V | 13.0 | 15.4 | 74.0 |
| 15734.000 | 59.4 | H | 14.0 | 14.6 | 74.0 |
| 16303.000 | 60.0 | V | 14.9 | 14.0 | 74.0 |
| 16769.000 | 60.8 | V | 15.2 | 13.2 | 74.0 |
| 17293.000 | 60.3 | H | 15.4 | 13.7 | 74.0 |

**GFSK CH78 (1-18GHz)**

| Frequency (MHz) | Average-Clear Write | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14453.000 | 45.0 | H | 13.1 | 9.0 | 54.0 |
| 15042.000 | 45.6 | H | 13.3 | 8.4 | 54.0 |
| 15713.000 | 47.2 | V | 13.9 | 6.8 | 54.0 |
| 16347.000 | 47.5 | H | 15.1 | 6.5 | 54.0 |
| 16826.000 | 48.1 | H | 15.5 | 5.9 | 54.0 |
| 17251.000 | 47.6 | H | 15.3 | 6.4 | 54.0 |

**GFSK CH78 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14221.000 | 57.2 | H | 12.8 | 16.8 | 74.0 |
| 14998.000 | 57.6 | H | 13.6 | 16.4 | 74.0 |
| 15795.000 | 59.1 | V | 14.2 | 14.9 | 74.0 |
| 16360.000 | 60.1 | H | 15.2 | 13.9 | 74.0 |
| 16906.000 | 61.0 | V | 15.8 | 13.0 | 74.0 |
| 17329.000 | 60.2 | V | 15.5 | 13.8 | 74.0 |

**π /4 DQPSK CH0 (1-18GHz)**

| Frequency (MHz) | Average-Clear Write | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14392.000 | 45.0 | H | 13.4 | 9.0 | 54.0 |
| 14968.000 | 45.6 | H | 13.7 | 8.4 | 54.0 |
| 15794.000 | 47.2 | V | 14.2 | 6.8 | 54.0 |
| 16332.000 | 47.3 | V | 15.0 | 6.7 | 54.0 |
| 16826.000 | 48.2 | H | 15.5 | 5.8 | 54.0 |
| 17434.000 | 47.6 | H | 15.6 | 6.4 | 54.0 |

**π /4 DQPSK CH0 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14365.000 | 58.1 | V | 13.3 | 15.9 | 74.0 |
| 15028.000 | 57.3 | V | 13.4 | 16.7 | 74.0 |
| 15716.000 | 59.0 | H | 14.0 | 15.0 | 74.0 |
| 16240.000 | 59.4 | V | 14.5 | 14.6 | 74.0 |
| 16800.000 | 59.9 | H | 15.4 | 14.1 | 74.0 |
| 17783.000 | 59.9 | V | 15.7 | 14.1 | 74.0 |

**π /4 DQPSK CH39 (1-18GHz)**

| Frequency (MHz) | Average-Clear Write | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14398.000 | 45.1 | V | 13.4 | 8.9 | 54.0 |
| 15060.000 | 45.8 | V | 13.2 | 8.2 | 54.0 |
| 15776.000 | 47.5 | H | 14.2 | 6.5 | 54.0 |
| 16296.000 | 47.5 | H | 14.8 | 6.5 | 54.0 |
| 16809.000 | 48.2 | H | 15.4 | 5.8 | 54.0 |
| 17419.000 | 47.9 | V | 15.6 | 6.1 | 54.0 |

**π /4 DQPSK CH39 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14422.000 | 57.6 | H | 13.3 | 16.4 | 74.0 |
| 15143.000 | 57.8 | V | 12.9 | 16.2 | 74.0 |
| 15716.000 | 59.4 | H | 14.0 | 14.6 | 74.0 |
| 16256.000 | 59.7 | H | 14.6 | 14.3 | 74.0 |
| 16819.000 | 60.3 | H | 15.5 | 13.7 | 74.0 |
| 17488.000 | 59.7 | V | 15.7 | 14.3 | 74.0 |

**π /4 DQPSK CH78 (1-18GHz)**

| Frequency (MHz) | Average-Clear Write | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14521.000 | 45.2 | H | 12.7 | 8.8 | 54.0 |
| 15049.000 | 45.9 | H | 13.3 | 8.1 | 54.0 |
| 15778.000 | 47.5 | H | 14.2 | 6.5 | 54.0 |
| 16245.000 | 47.8 | H | 14.6 | 6.2 | 54.0 |
| 16790.000 | 48.5 | H | 15.3 | 5.5 | 54.0 |
| 17434.000 | 48.1 | H | 15.6 | 5.9 | 54.0 |

**π /4 DQPSK CH78 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14493.000 | 57.5 | H | 12.9 | 16.5 | 74.0 |
| 15047.000 | 58.0 | H | 13.3 | 16.0 | 74.0 |
| 15838.000 | 59.6 | V | 14.4 | 14.4 | 74.0 |
| 16289.000 | 59.7 | V | 14.8 | 14.3 | 74.0 |
| 16825.000 | 60.7 | V | 15.5 | 13.3 | 74.0 |
| 17537.000 | 60.6 | V | 15.8 | 13.4 | 74.0 |

**8DPSK CH0 (1-18GHz)**

| Frequency (MHz) | Average-Clear Write | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14538.000 | 45.2 | V | 12.6 | 8.8 | 54.0 |
| 15067.000 | 45.9 | H | 13.2 | 8.1 | 54.0 |
| 15776.000 | 47.6 | H | 14.2 | 6.4 | 54.0 |
| 16296.000 | 48.1 | H | 14.8 | 5.9 | 54.0 |
| 16826.000 | 48.7 | H | 15.5 | 5.3 | 54.0 |
| 17275.000 | 48.3 | V | 15.4 | 5.7 | 54.0 |

**8DPSK CH0 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14232.000 | 57.2 | V | 12.9 | 16.8 | 74.0 |
| 15082.000 | 58.4 | H | 13.1 | 15.6 | 74.0 |
| 15706.000 | 59.4 | H | 13.9 | 14.6 | 74.0 |
| 16316.000 | 59.9 | V | 15.0 | 14.1 | 74.0 |
| 16755.000 | 61.6 | H | 15.1 | 12.4 | 74.0 |
| 17272.000 | 61.2 | H | 15.4 | 12.8 | 74.0 |

**8DPSK CH39 (1-18GHz)**

| Frequency (MHz) | Average-Clear Write | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14447.000 | 45.0 | H | 13.1 | 9.0 | 54.0 |
| 14976.000 | 45.6 | H | 13.8 | 8.4 | 54.0 |
| 15779.000 | 47.3 | H | 14.2 | 6.7 | 54.0 |
| 16319.000 | 47.5 | H | 15.0 | 6.5 | 54.0 |
| 16842.000 | 48.1 | H | 15.6 | 5.9 | 54.0 |
| 17416.000 | 47.6 | H | 15.6 | 6.4 | 54.0 |

**8DPSK CH39 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14451.000 | 56.6 | H | 13.1 | 17.4 | 74.0 |
| 14942.000 | 58.1 | H | 13.7 | 15.9 | 74.0 |
| 15791.000 | 59.3 | H | 14.2 | 14.7 | 74.0 |
| 16292.000 | 59.5 | H | 14.8 | 14.5 | 74.0 |
| 17045.000 | 60.0 | H | 15.8 | 14.0 | 74.0 |
| 17322.000 | 60.2 | H | 15.4 | 13.8 | 74.0 |

**8DPSK CH78 (1-18GHz)**

| Frequency (MHz) | Average-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14452.000 | 44.8 | V | 13.1 | 9.2 | 54.0 |
| 14958.000 | 45.5 | V | 13.7 | 8.5 | 54.0 |
| 15776.000 | 47.2 | V | 14.2 | 6.8 | 54.0 |
| 16327.000 | 47.3 | V | 15.0 | 6.7 | 54.0 |
| 16839.000 | 47.9 | V | 15.6 | 6.1 | 54.0 |
| 17311.000 | 47.3 | V | 15.4 | 6.7 | 54.0 |

**8DPSK CH78 (1-18GHz)**

| Frequency (MHz) | MaxPeak-ClearWrite | Polarization | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 14243.000 | 57.5 | V | 12.9 | 16.5 | 74.0 |
| 14948.000 | 57.9 | H | 13.7 | 16.1 | 74.0 |
| 15746.000 | 59.5 | H | 14.0 | 14.5 | 74.0 |
| 16240.000 | 59.2 | H | 14.5 | 14.8 | 74.0 |
| 16829.000 | 60.6 | V | 15.5 | 13.4 | 74.0 |
| 17334.000 | 59.5 | H | 15.5 | 14.5 | 74.0 |

**See ANNEX C for test graphs.**

**Conclusion: Pass**

## B.5 Occupied 20dB Bandwidth

**Measurement Limit:**

| Standard | Limit (kHz) |
|---|---|
| FCC 47 CFR Part 15.247 (a) | / |

**Measurement Result:**

| Mode | Channel | Occupied 20dB Bandwidth ( MHz) | | conclusion |
|---|---|---|---|---|
| GFSK | 0 | Fig.75 | 1.151 | / |
| | 39 | Fig.76 | 1.136 | |
| | 78 | Fig.77 | 1.136 | |
| π /4 DQPSK | 0 | Fig.78 | 1.302 | / |
| | 39 | Fig.79 | 1.302 | |
| | 78 | Fig.80 | 1.302 | |
| 8DPSK | 0 | Fig.81 | 1.324 | / |
| | 39 | Fig.82 | 1.317 | |
| | 78 | Fig.83 | 1.331 | |

**See ANNEX C for test graphs.**

**Conclusion: PASS**

## B.6 Time of Occupancy (Dwell Time)

**Measurement Limit:**

| Standard | Limit |
|---|---|
| FCC 47 CFR Part 15.247(a) | < 400 ms |

**Measurement Results:**

| Mode | Channel | Packet | Dwell Time(ms) | | Conclusion |
|---|---|---|---|---|---|
| GFSK | 39 | DH5 | Fig.84 | 170.4 | **P** |
| | | | Fig.85 | | |
| π /4 DQPSK | 39 | 2-DH5 | Fig.86 | 193.2 | **P** |
| | | | Fig.87 | | |
| 8DPSK | 39 | 3-DH5 | Fig.88 | 171.3 | **P** |
| | | | Fig.89 | | |

**See ANNEX C for test graphs.**

**Conclusion: Pass**

## B.7 Number of Hopping Channels

**Measurement Limit:**

| Standard | Limit |
|---|---|
| FCC 47 CFR Part 15.247(a) | At least 15 non-overlapping channels |

**Measurement Results:**

| Mode | Channel | Packet | Number of hopping channels | | Test result | Conclusion |
|---|---|---|---|---|---|---|
| GFSK | 39 | DH5 | Fig.90 | Fig.91 | 79 | **P** |
| π/4 DQPSK | 39 | 2-DH5 | Fig.92 | Fig.93 | 79 | **P** |
| 8DPSK | 39 | 3-DH5 | Fig.94 | Fig.95 | 79 | **P** |

**See ANNEX C for test graphs.**

**Conclusion: Pass**

## B.8 Carrier Frequency Separation

**Measurement Limit:**

| Standard | Limit |
|---|---|
| FCC 47 CFR Part 15.247(a) | By a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater |

**Measurement Results:**

| Mode | Channel | Packet | Separation of hopping channels | Test result (MHz) | Conclusion |
|---|---|---|---|---|---|
| GFSK | 39 | DH5 | Fig.96 | 1.006 | P |
| π/4 DQPSK | 39 | 2-DH5 | Fig.97 | 1.006 | P |
| 8DPSK | 39 | 3-DH5 | Fig.98 | 1.006 | P |

See ANNEX C for test graphs.

**Conclusion: Pass**

## B.9 AC Power line Conducted Emission

**Test Condition:**

| Voltage（V） | Frequency（Hz） |
|---|---|
| 120 | 60 |

**Measurement Result and limit:**

BT (Quasi-peak Limit)-AE1

| Frequency range (MHz) | Quasi-peak Limit (dBμV) | Result (dBμV) | | Conclusion |
|---|---|---|---|---|
| | | Traffic | Idle | |
| 0.15 to 0.5 | 66 to 56 | Fig.99 | Fig.100 | P |
| 0.5 to 5 | 56 | | | |
| 5 to 30 | 60 | | | |
| NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz. | | | | |

BT (Average Limit)-AE1

| Frequency range (MHz) | Average-peak Limit (dBμV) | Result (dBμV) | | Conclusion |
|---|---|---|---|---|
| | | Traffic | Idle | |
| 0.15 to 0.5 | 56 to 46 | Fig.99 | Fig.100 | P |
| 0.5 to 5 | 46 | | | |
| 5 to 30 | 50 | | | |
| NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz. | | | | |

**Note:** The measurement results include the L1 and N measurements.

**See ANNEX C for test graphs.**

**Conclusion: Pass**

# ANNEX C: TEST FIGURE LIST

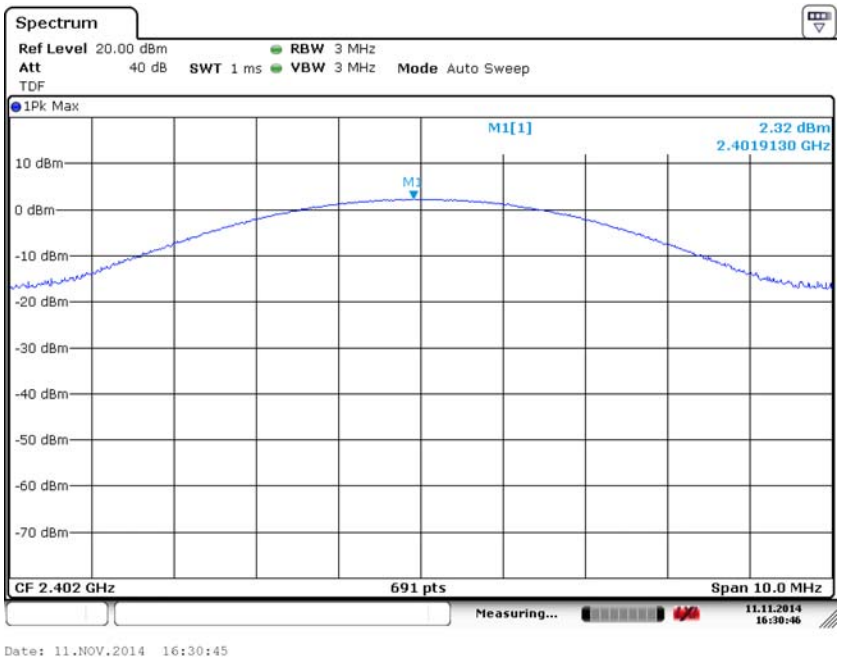


**Fig. 1 Maximum Peak Output Power(GFSK, Ch 0)**

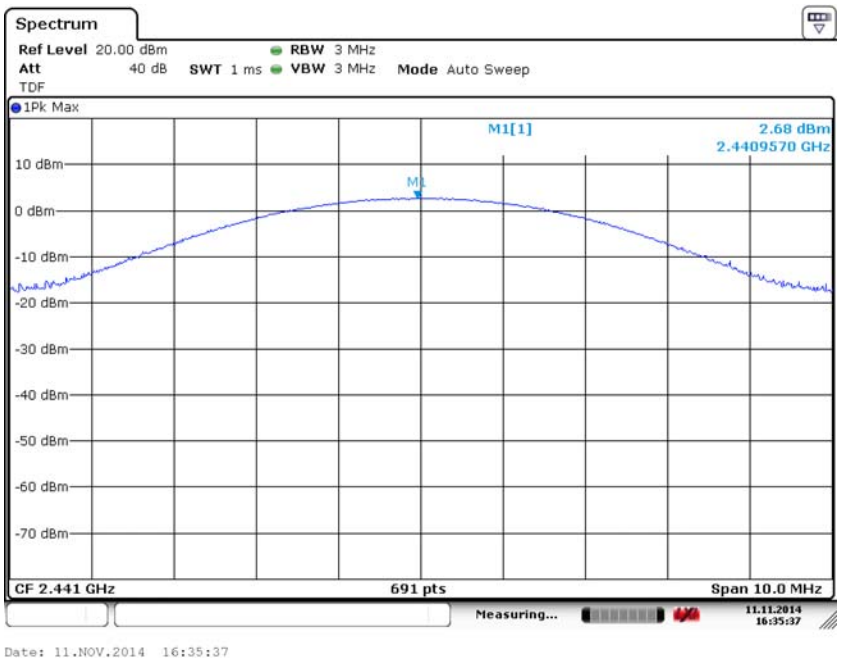


**Fig. 2 Maximum Peak Output Power(GFSK, Ch 39)**

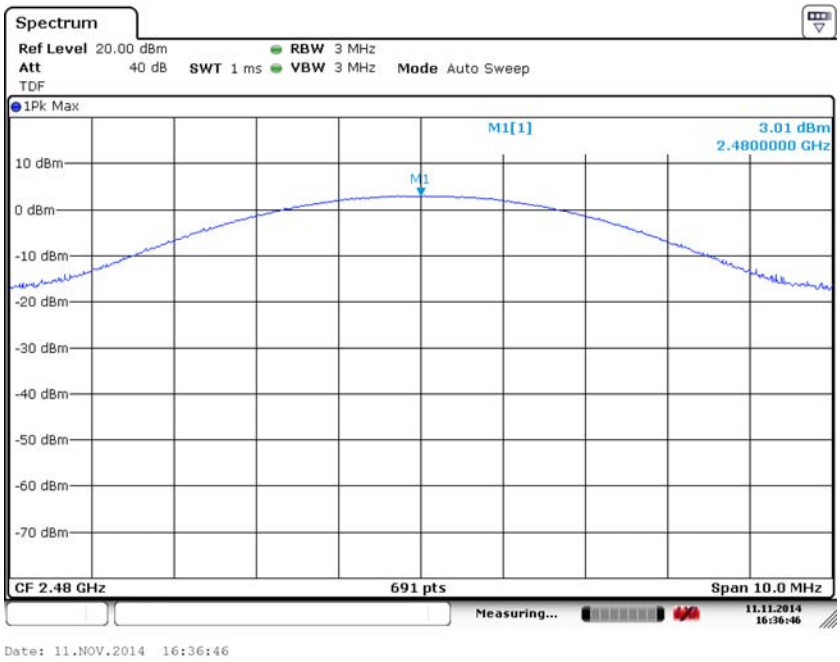


**Fig. 3 Maximum Peak Output Power(GFSK, Ch 78)**

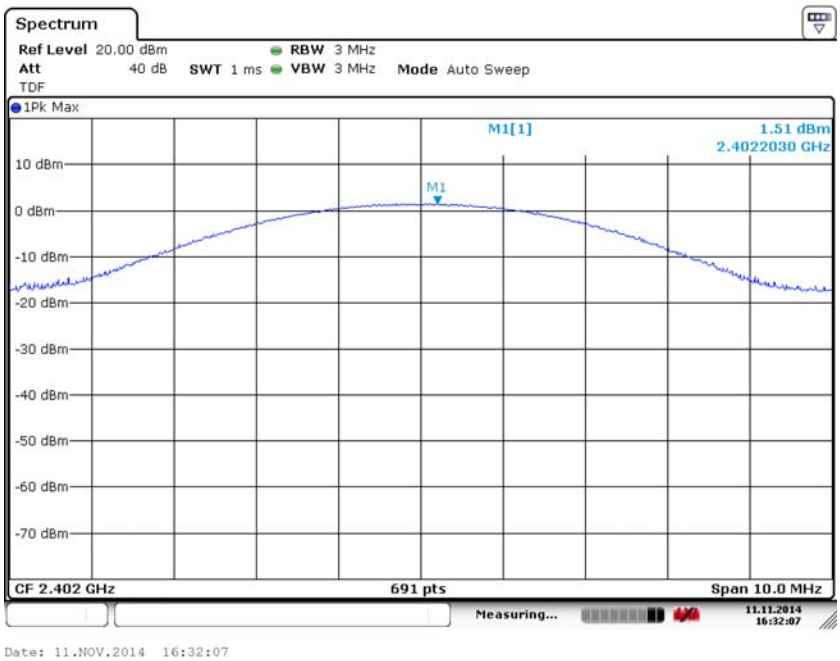


**Fig. 4 Maximum Peak Output Power( π /4 DQPSK, Ch 0)**

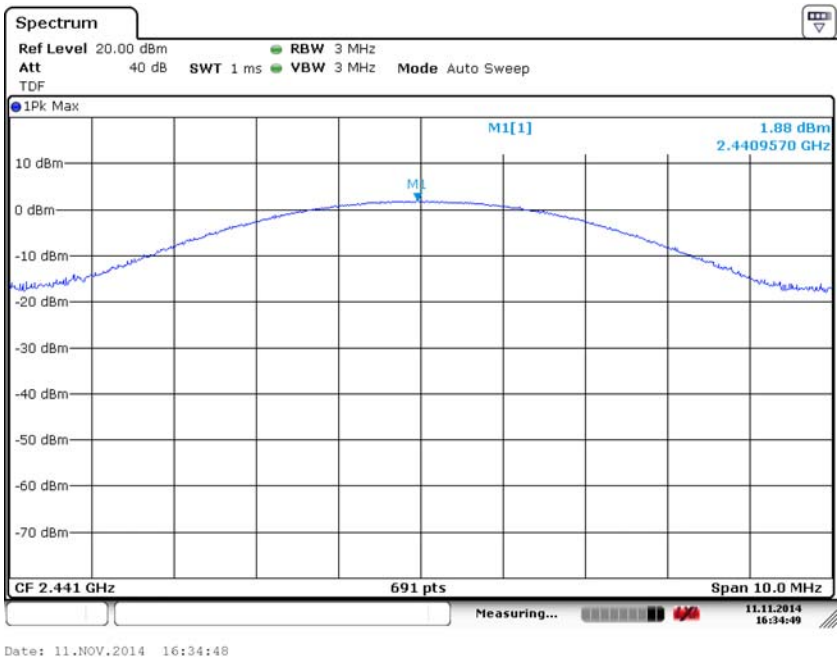


**Fig. 5 Maximum Peak Output Power(π/4 DQPSK, Ch 39)**

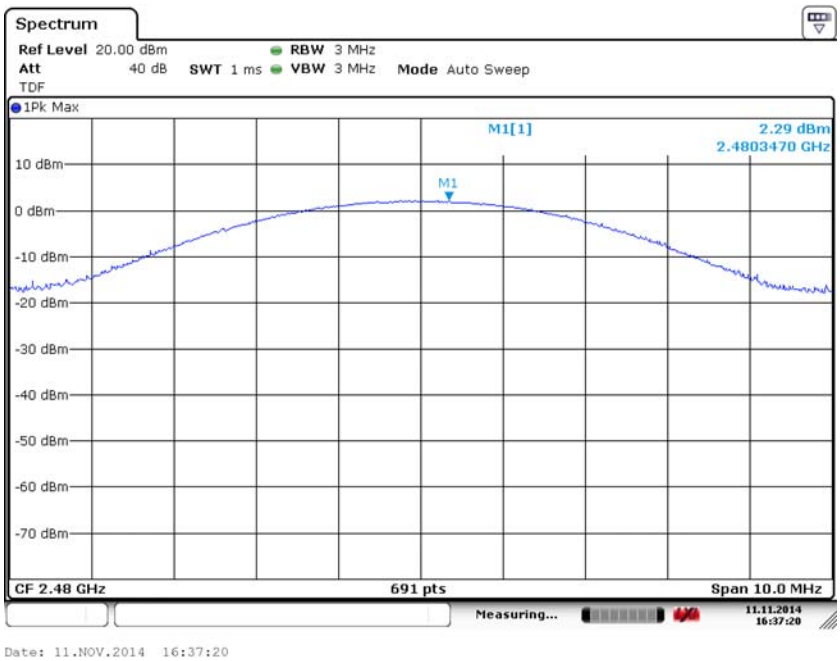


**Fig. 6 Maximum Peak Output Power(π/4 DQPSK, Ch 78)**

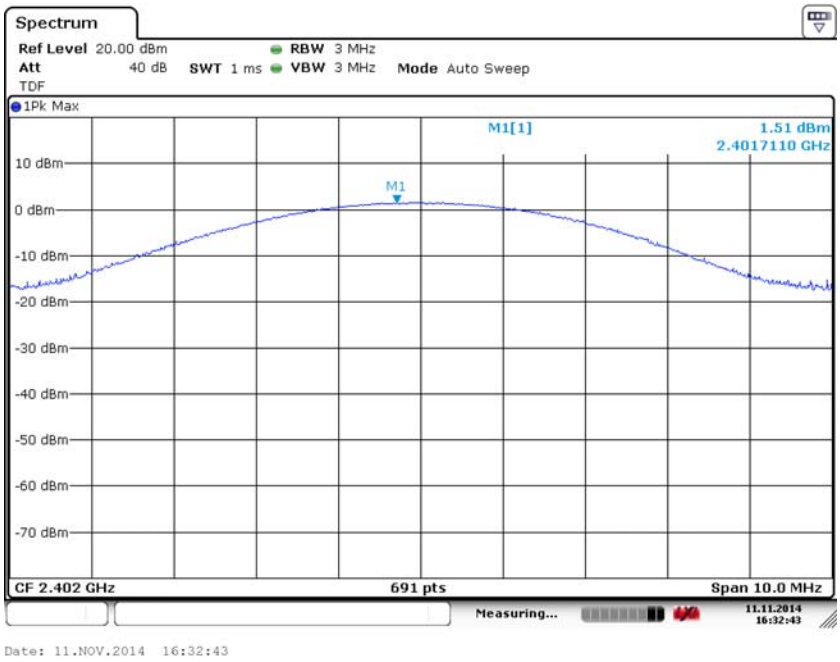


**Fig. 7 Maximum Peak Output Power(8DPSK, Ch 0)**

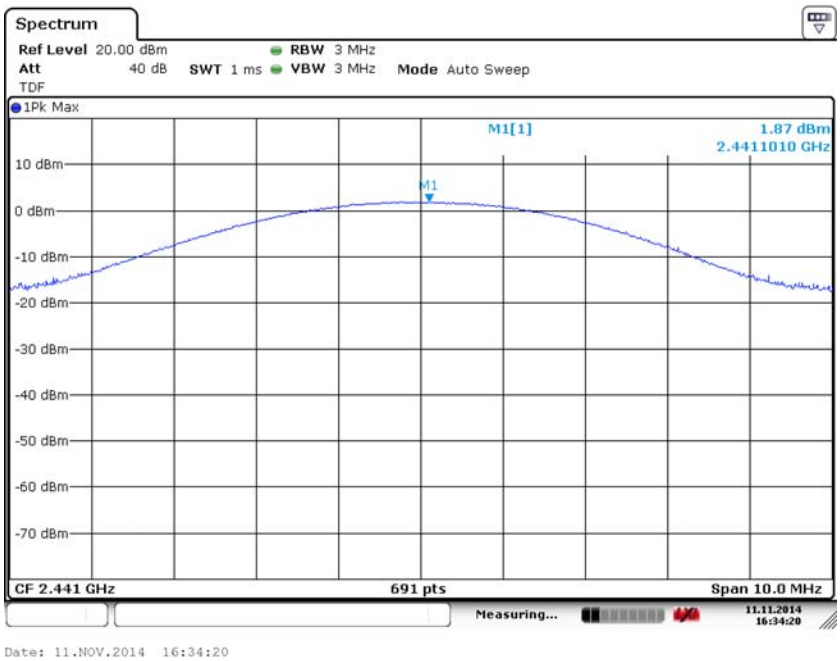


**Fig. 8 Maximum Peak Output Power(8DPSK, Ch 39)**

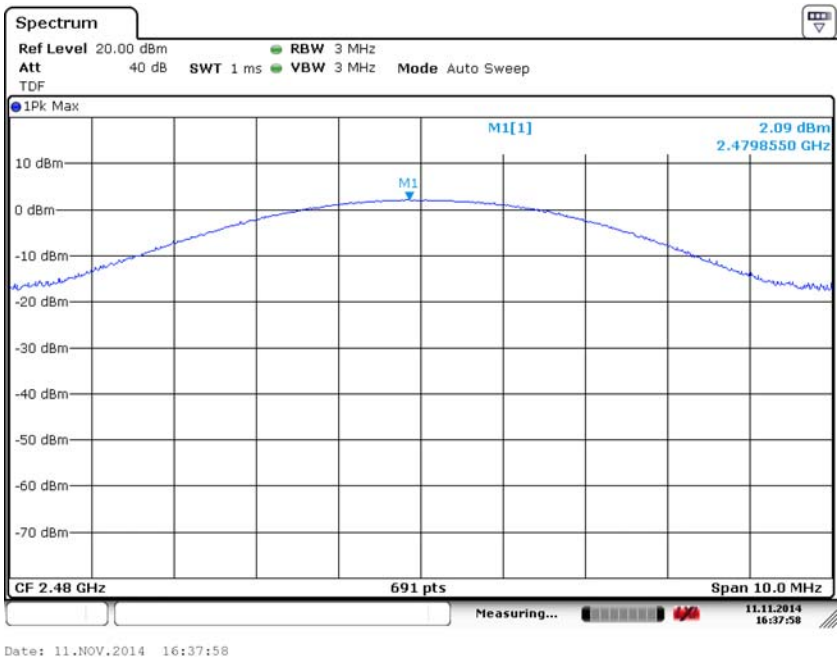


**Fig. 9 Maximum Peak Output Power(8DPSK, Ch 78)**

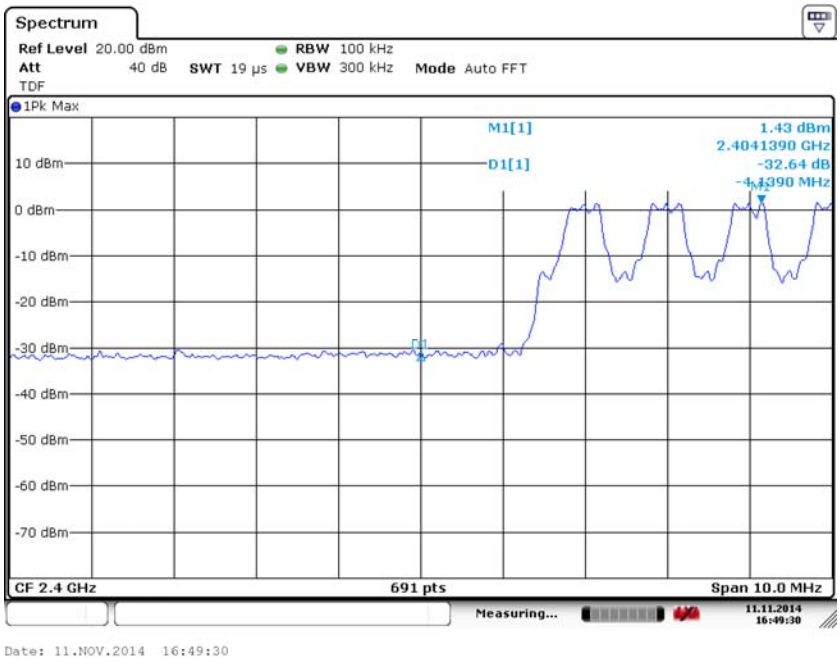


**Fig. 10 Band Edges (GFSK, Ch 0, Hopping ON)**

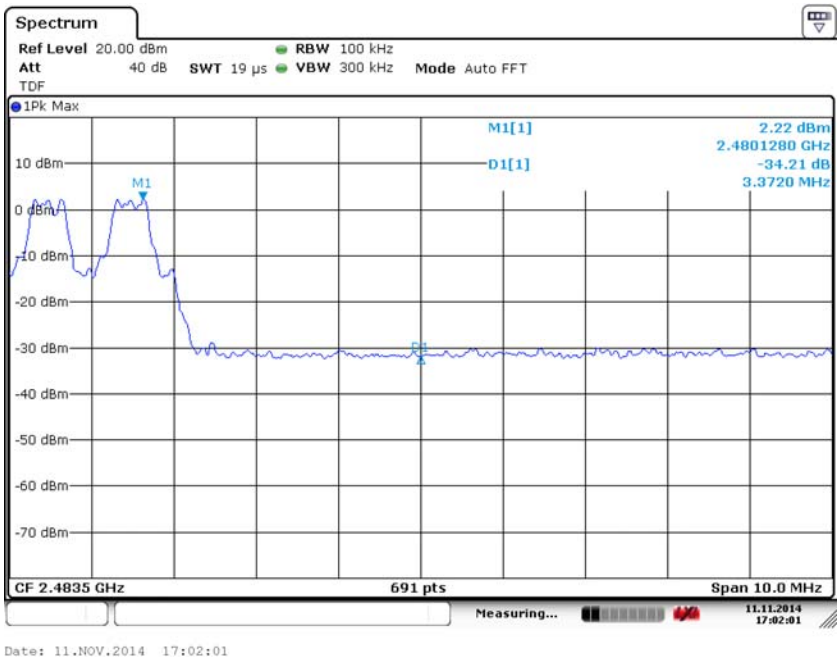


**Fig. 11 Band Edges (GFSK, Ch 78, Hopping ON)**

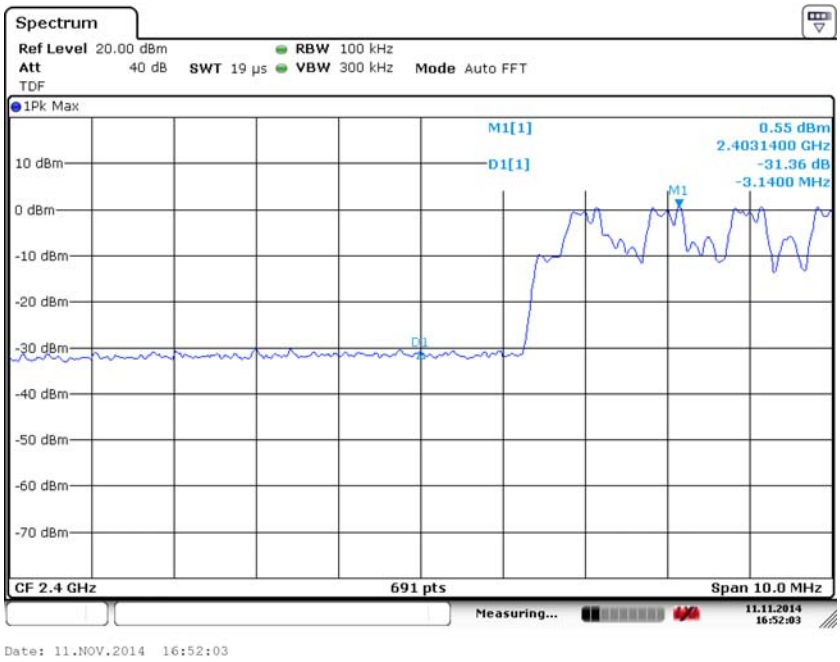


**Fig. 12 Band Edges ( π /4 DQPSK, Ch 0, Hopping ON)**

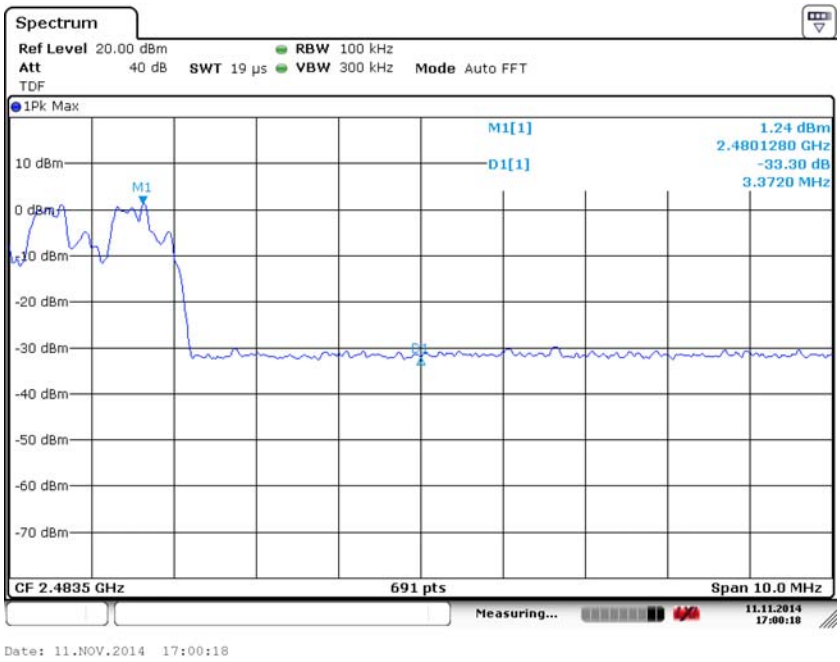


**Fig. 13 Band Edges ( π /4 DQPSK, Ch 78, Hopping ON)**

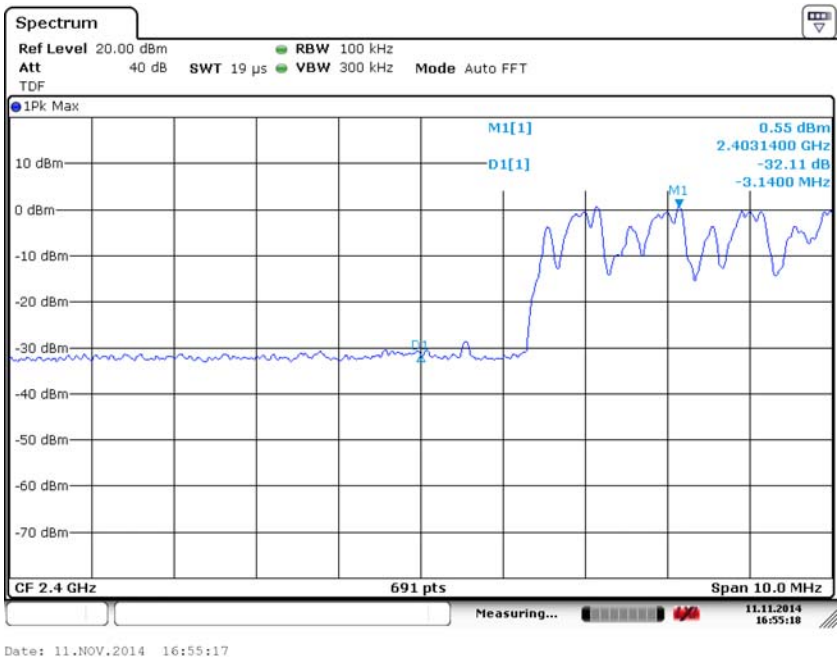


**Fig. 14 Band Edges (8DPSK, Ch 0, Hopping ON)**

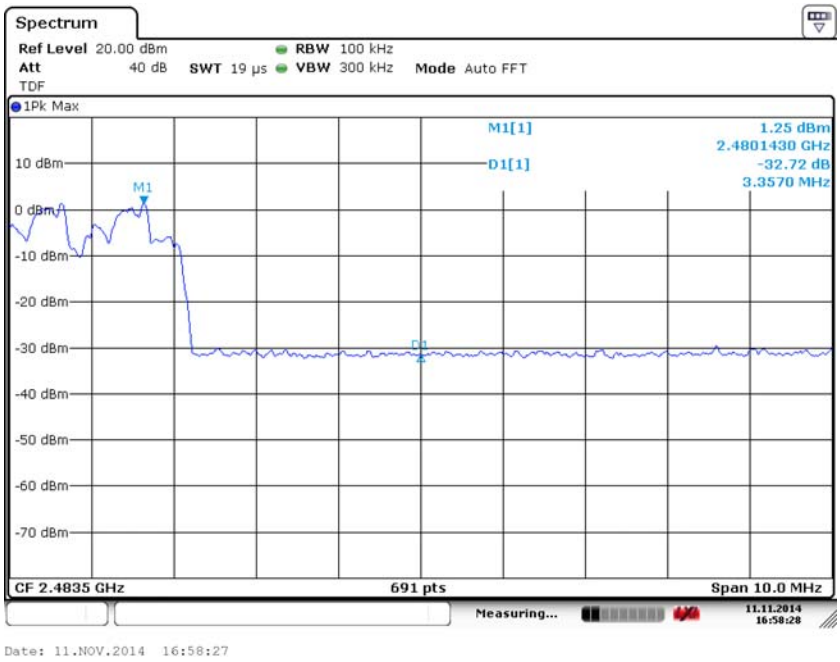


**Fig. 15 Band Edges (8DPSK, Ch 78, Hopping ON)**

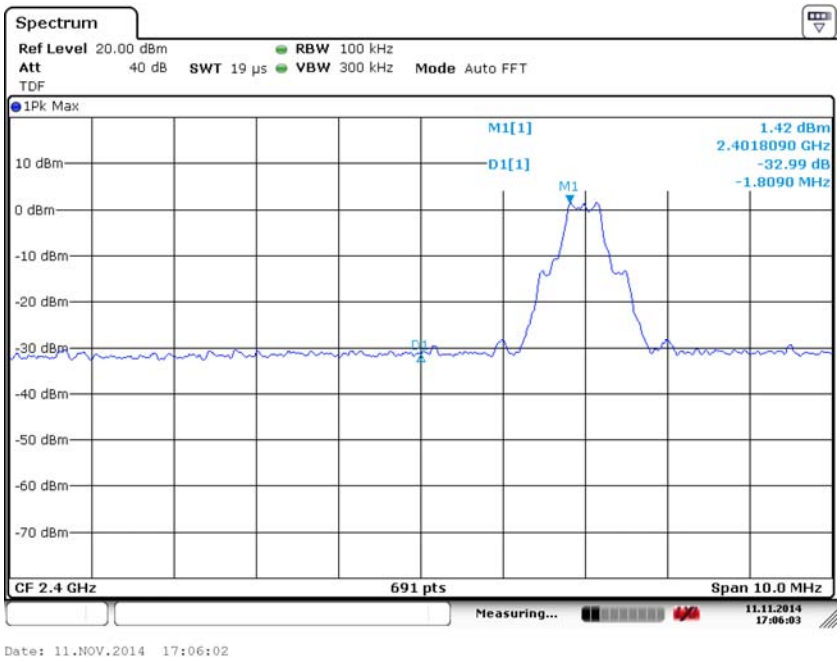


**Fig. 16 Band Edges (GFSK, Ch 0, Hopping OFF)**

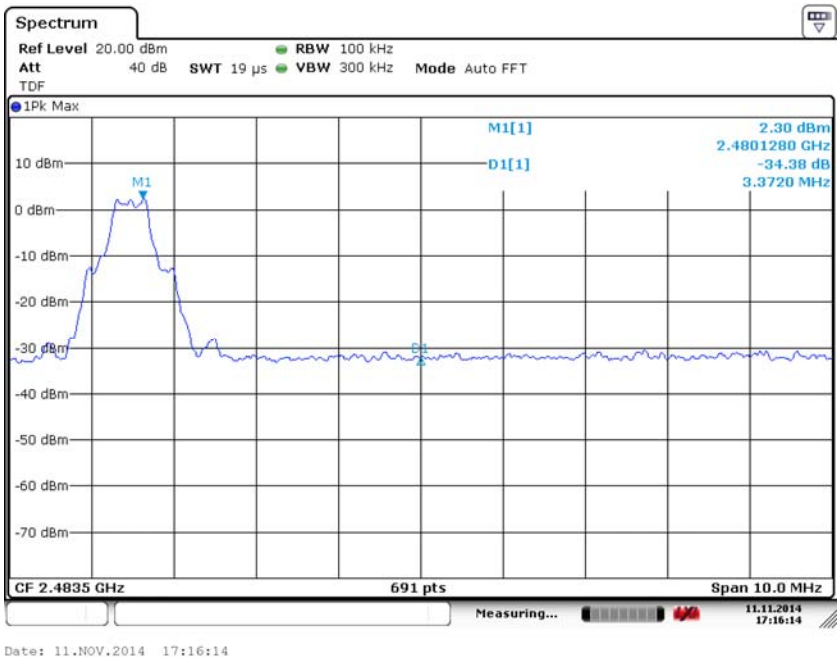


**Fig. 17 Band Edges (GFSK, Ch 78, Hopping OFF)**

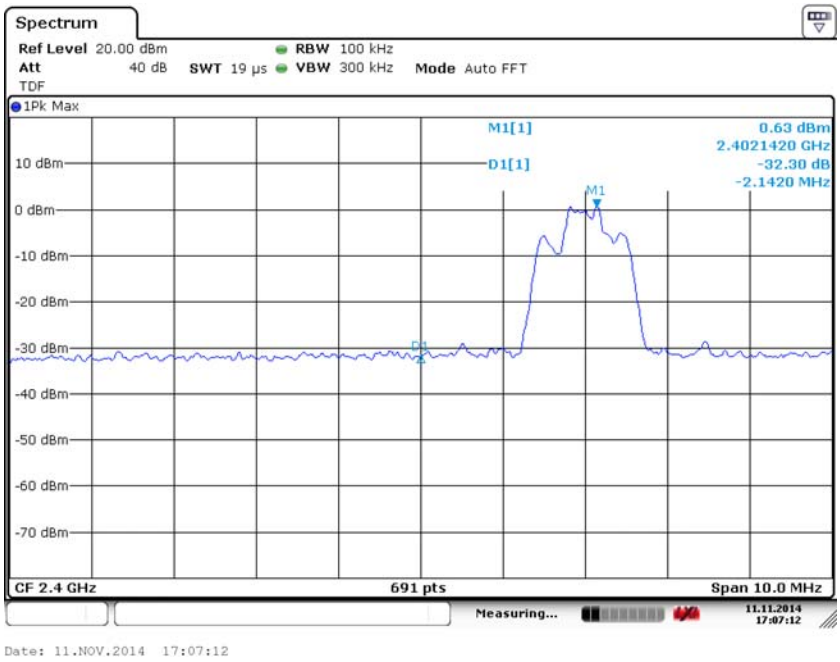


**Fig. 18 Band Edges ( π /4 DQPSK, Ch 0, Hopping OFF)**

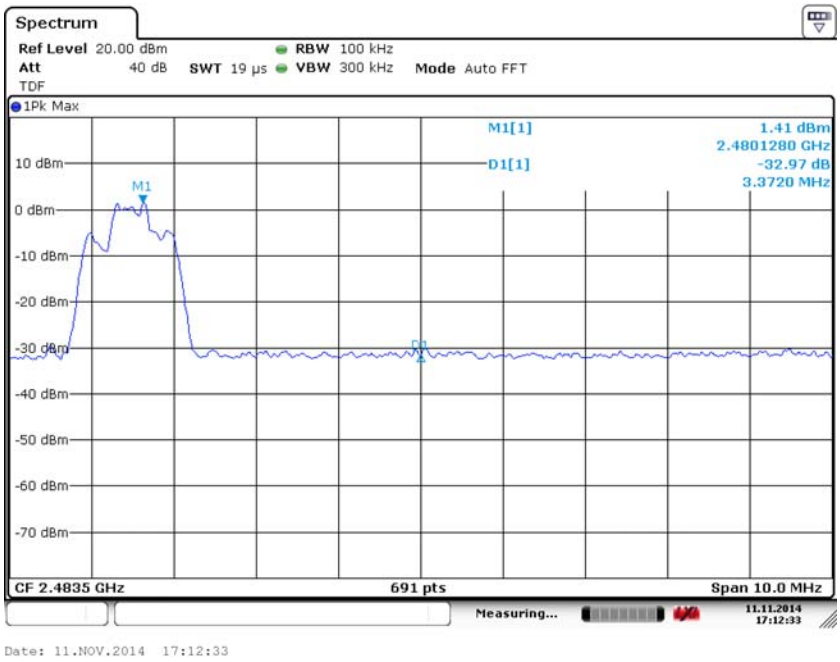


**Fig. 19 Band Edges ( π /4 DQPSK, Ch 78, Hopping OFF)**

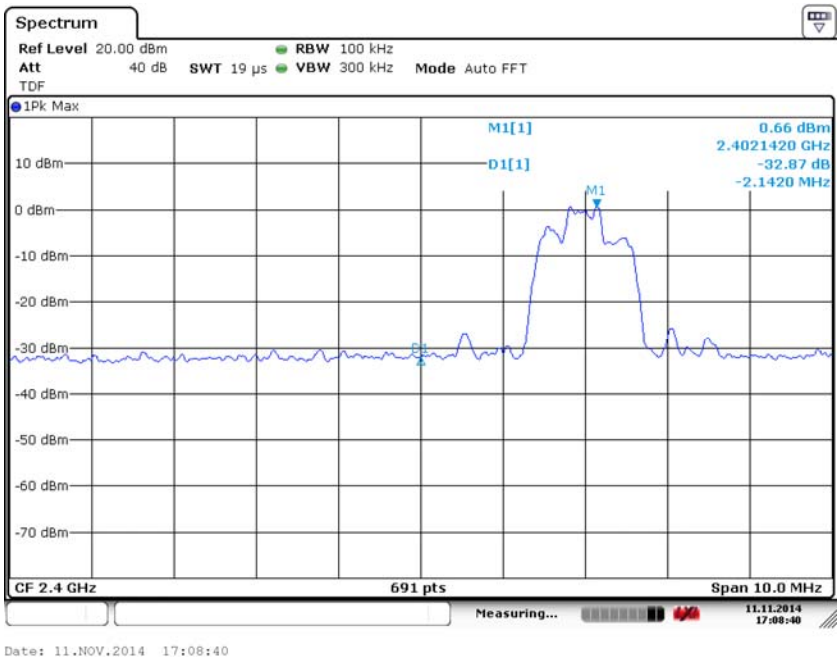


**Fig. 20 Band Edges (8DPSK, Ch 0, Hopping OFF)**

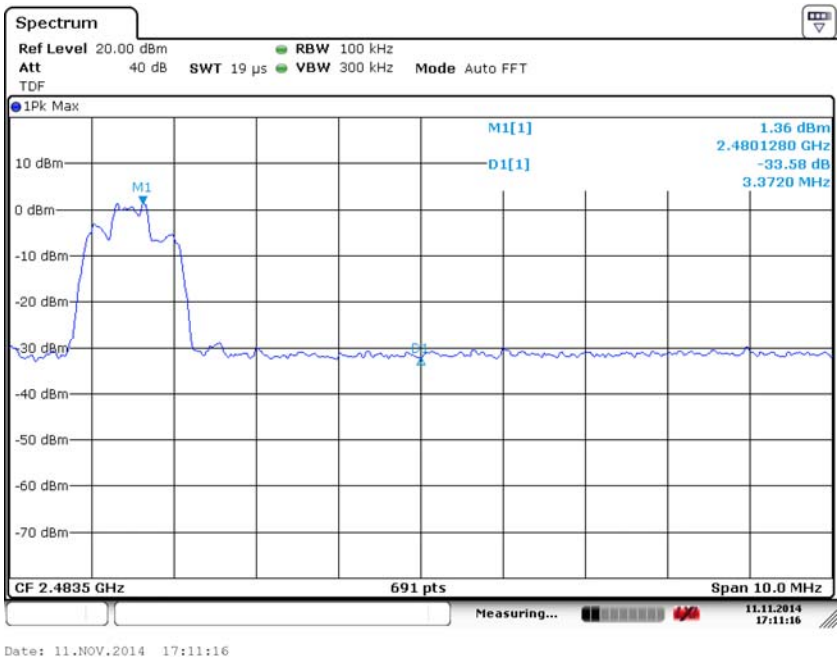


**Fig. 21 Band Edges (8DPSK, Ch 78, Hopping OFF)**

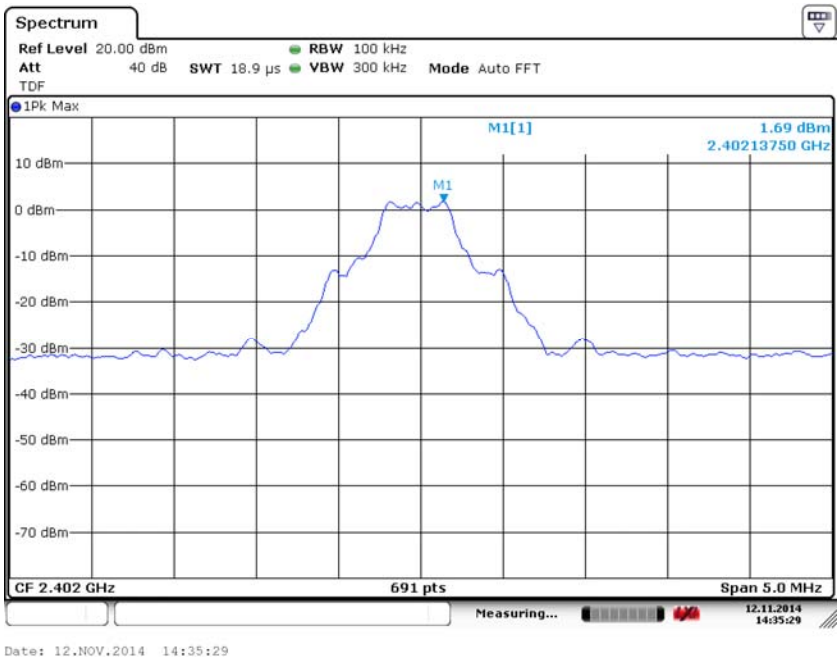


**Fig. 22 Conducted Spurious Emission (GFSK, Ch0, 2.402GHz)**

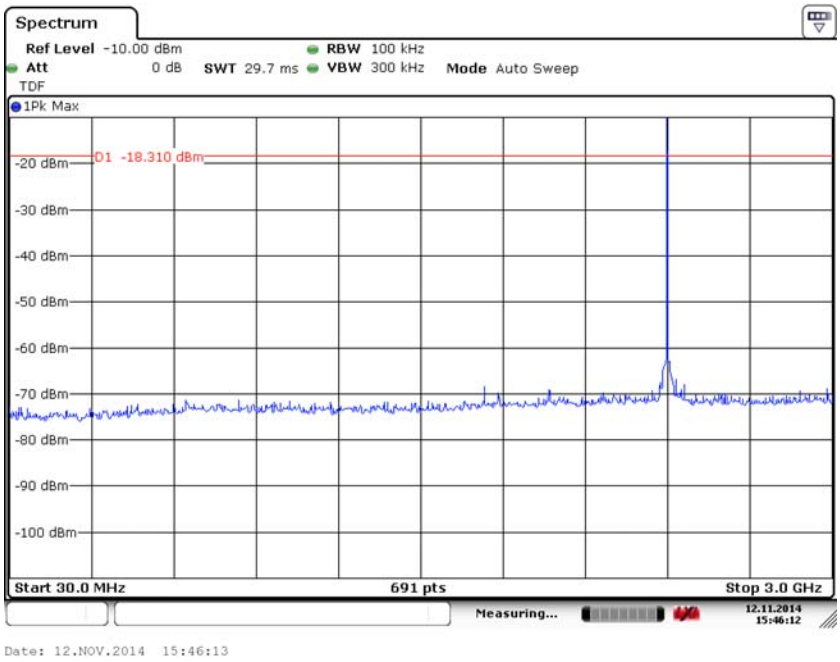


**Fig. 23 Conducted Spurious Emission (GFSK, Ch0, 30 MHz-3 GHz)**

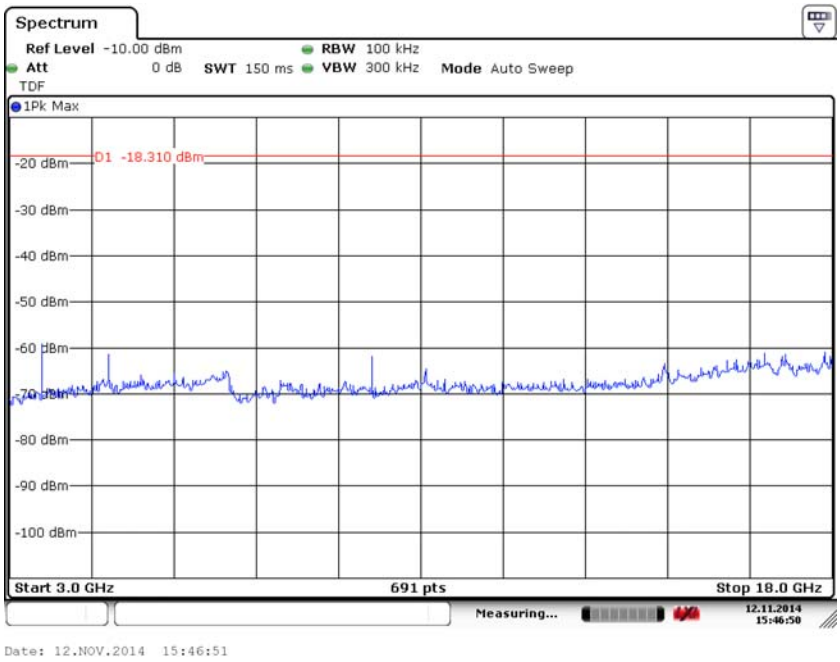


**Fig. 24 Conducted Spurious Emission (GFSK, Ch0, 3GHz-18 GHz)**

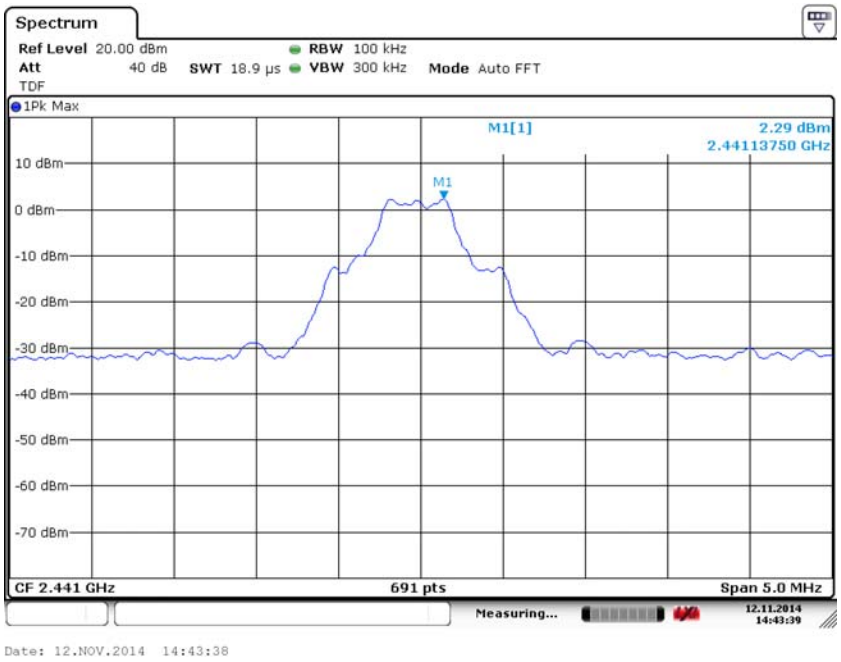


**Fig. 25 Conducted Spurious Emission (GFSK, Ch39, 2.441GHz)**

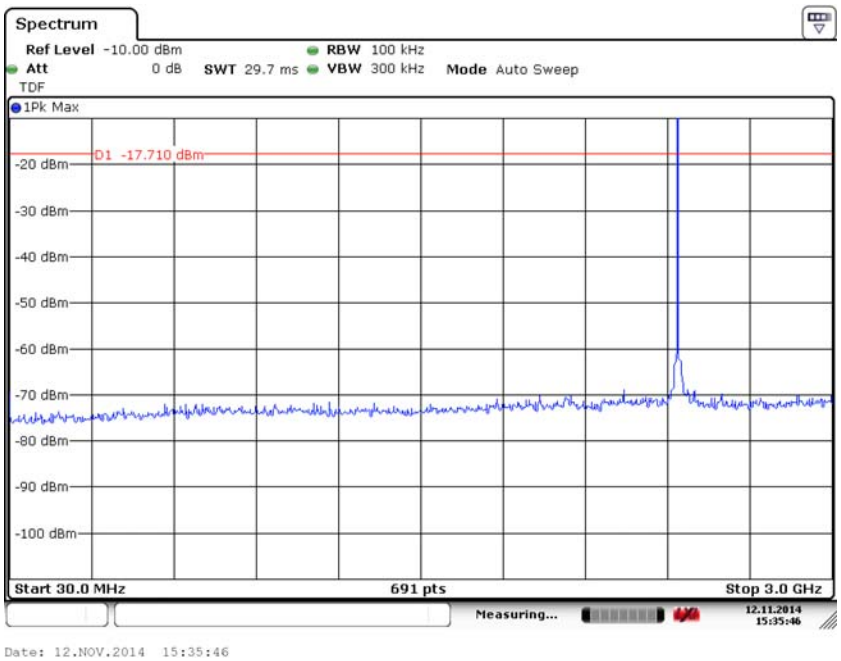


**Fig. 26 Conducted Spurious Emission (GFSK, Ch39, 30 MHz-3 GHz)**

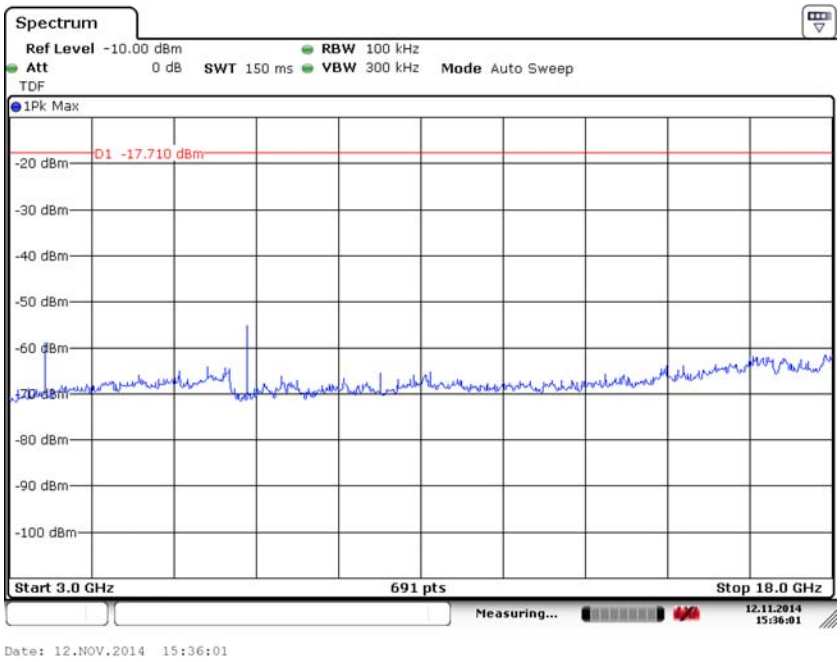


**Fig. 27 Conducted Spurious Emission (GFSK, Ch39, 3GHz-18 GHz)**

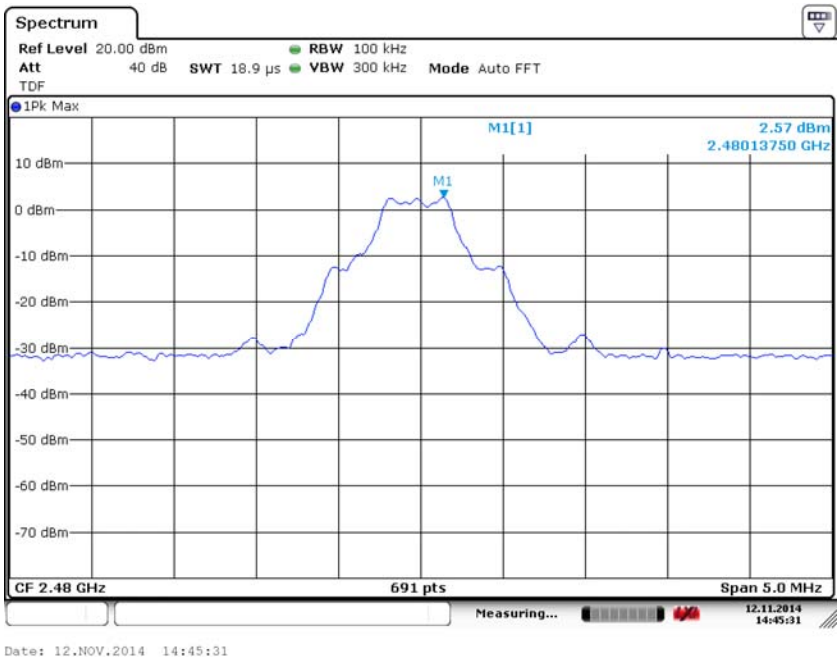


**Fig. 28 Conducted Spurious Emission (GFSK, Ch78, 2.480GHz)**

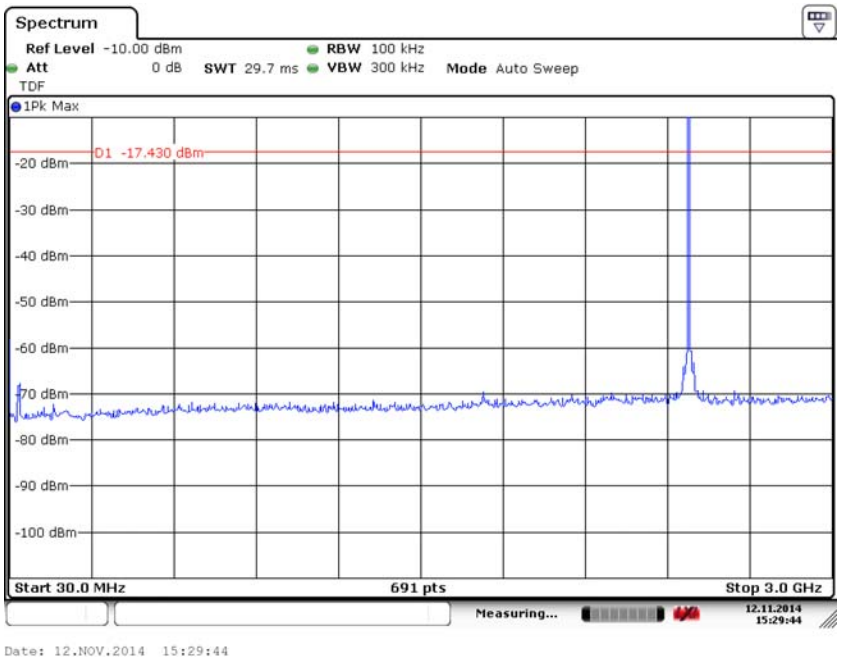


**Fig. 29 Conducted Spurious Emission (GFSK, Ch78, 30 MHz-3 GHz)**

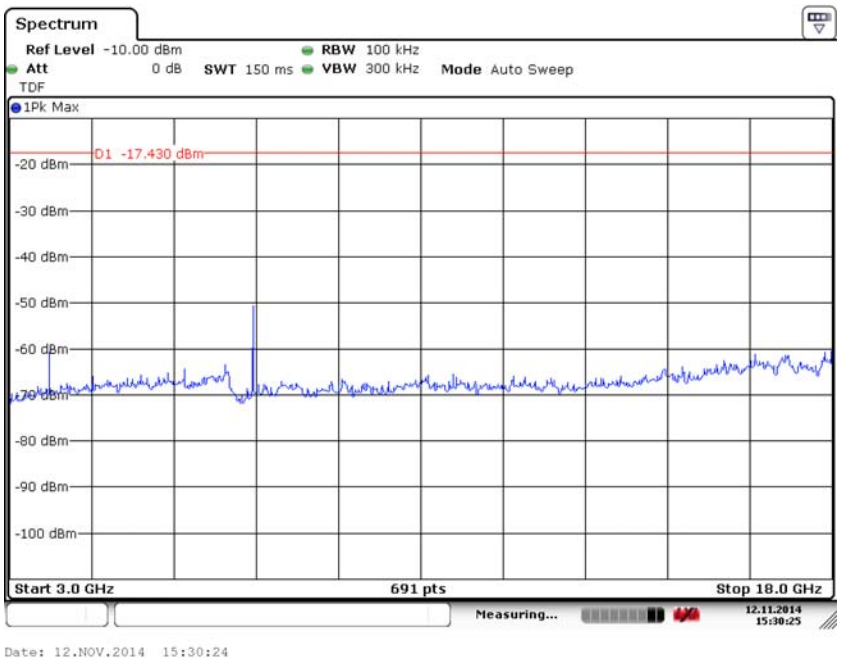


**Fig. 30 Conducted Spurious Emission (GFSK, Ch78, 3GHz-18 GHz)**

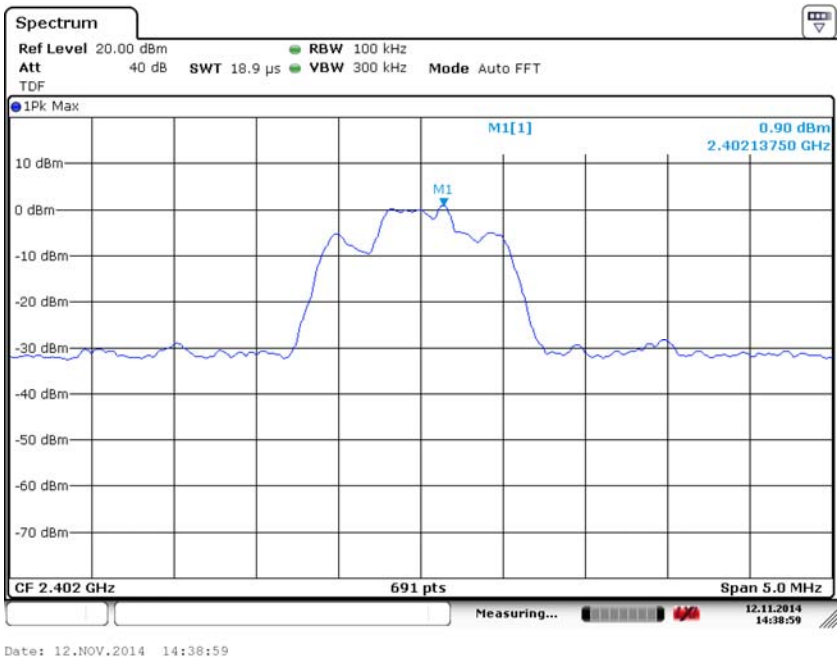


**Fig. 31 Conducted Spurious Emission ( π /4 DQPSK, Ch0, 2.402GHz)**

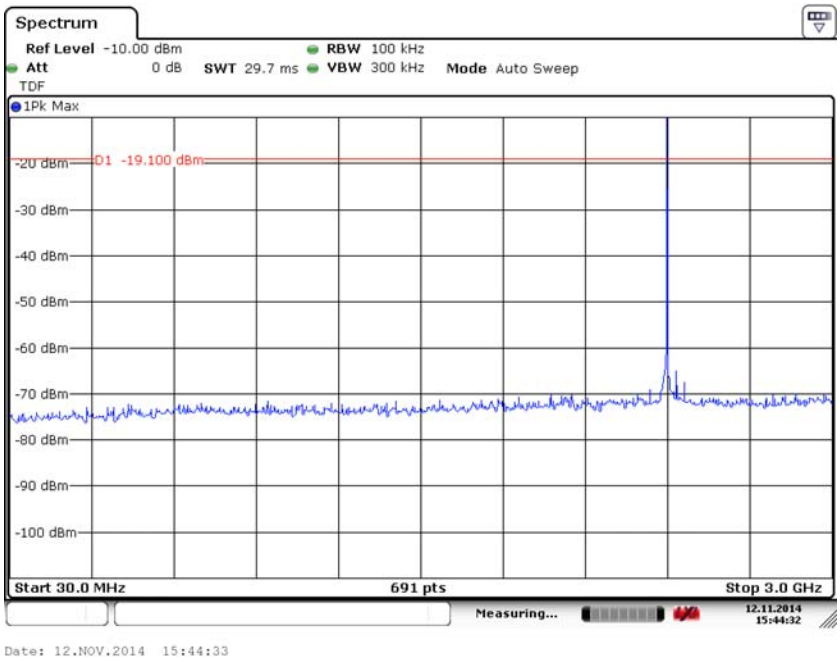


**Fig. 32 Conducted Spurious Emission ( π /4 DQPSK, Ch0, 30 MHz-3 GHz)**

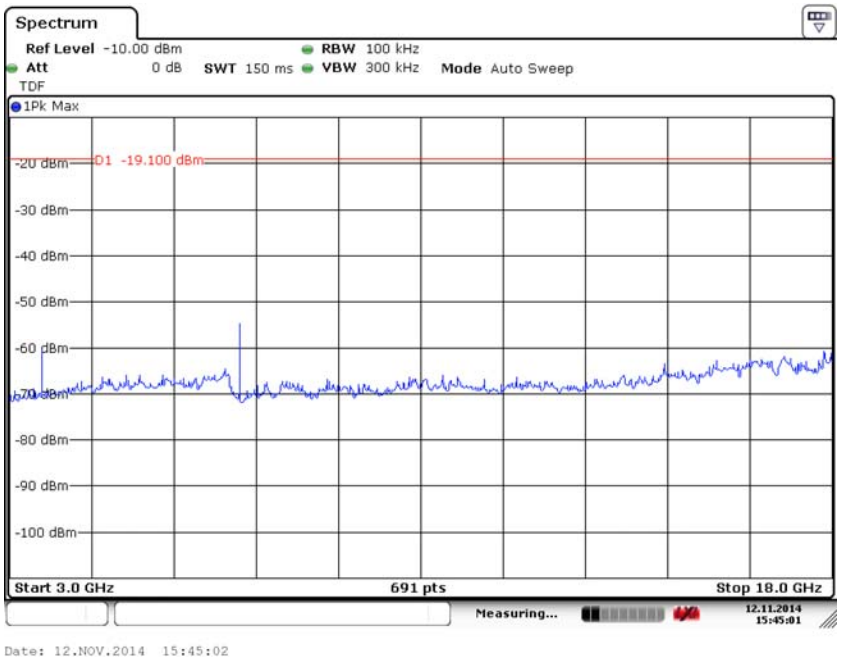


**Fig. 33 Conducted Spurious Emission ( π /4 DQPSK, Ch0, 3GHz-18 GHz)**

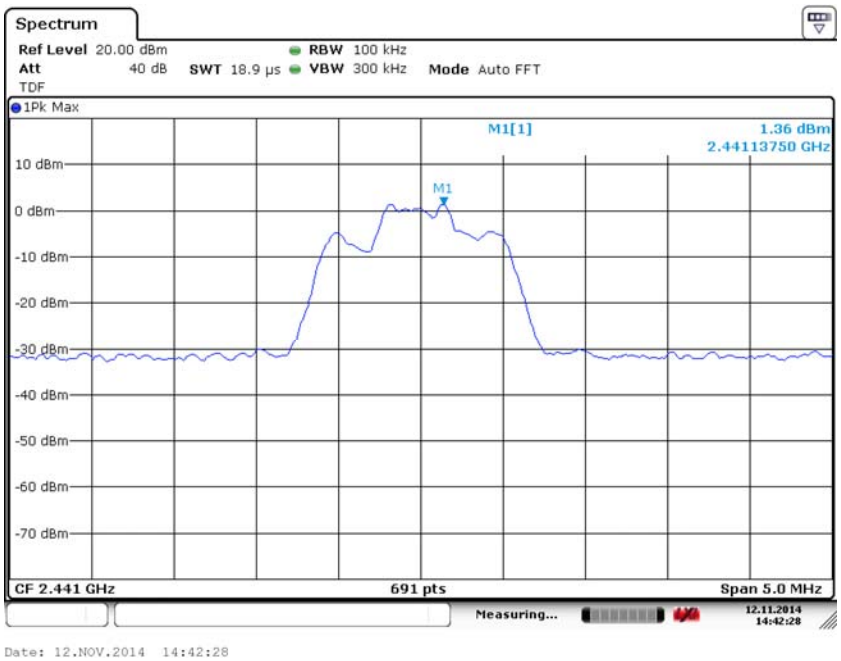


**Fig. 34 Conducted Spurious Emission ( π /4 DQPSK, Ch39, 2.441GHz)**

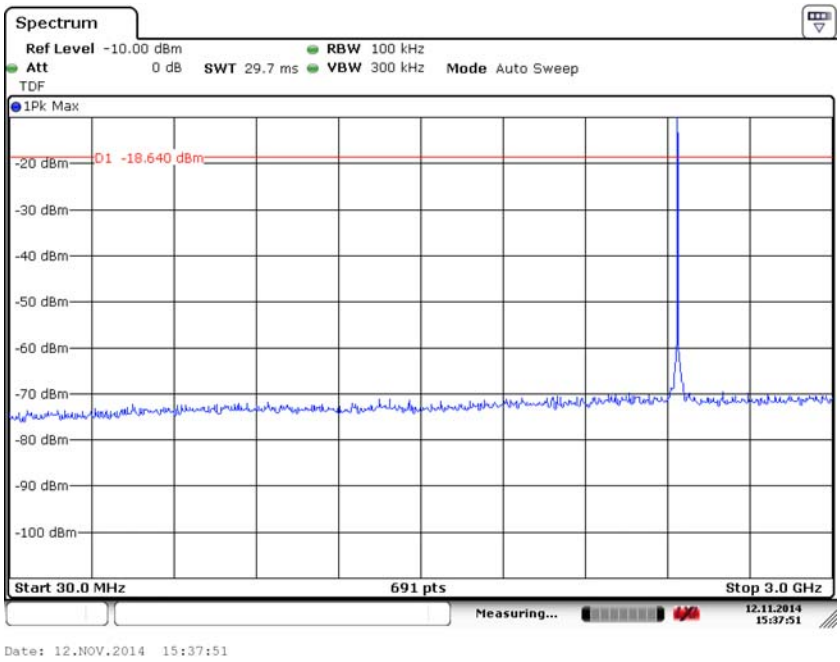


**Fig. 35 Conducted Spurious Emission ( π /4 DQPSK, Ch39, 30 MHz-3 GHz)**

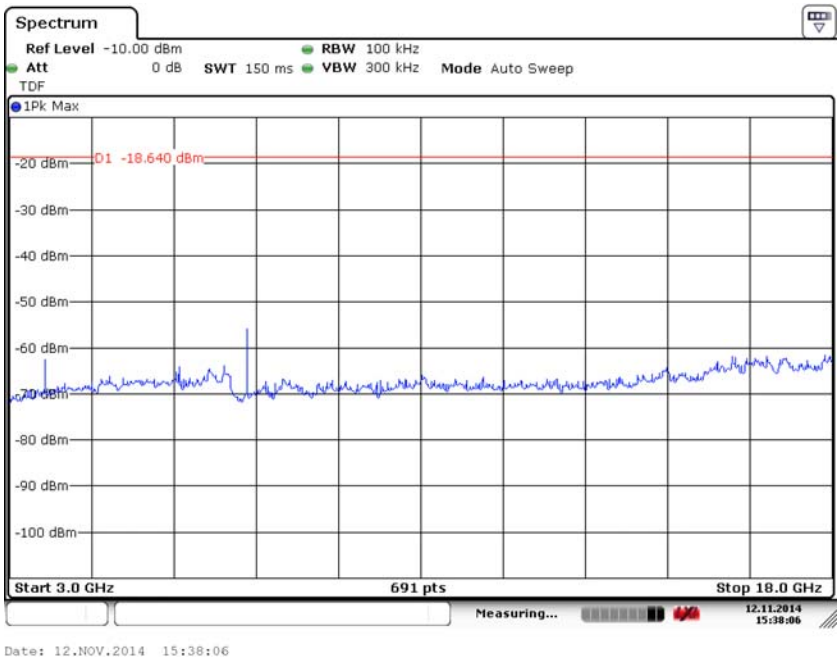


**Fig. 36 Conducted Spurious Emission ( π /4 DQPSK, Ch39, 3GHz-18 GHz)**

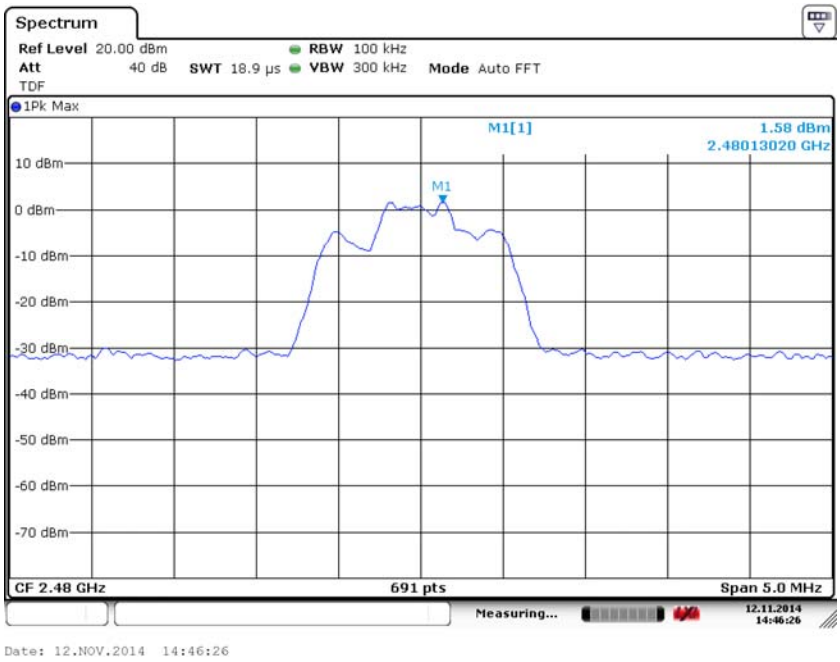


**Fig. 37 Conducted Spurious Emission ( π /4 DQPSK, Ch78, 2.480GHz)**

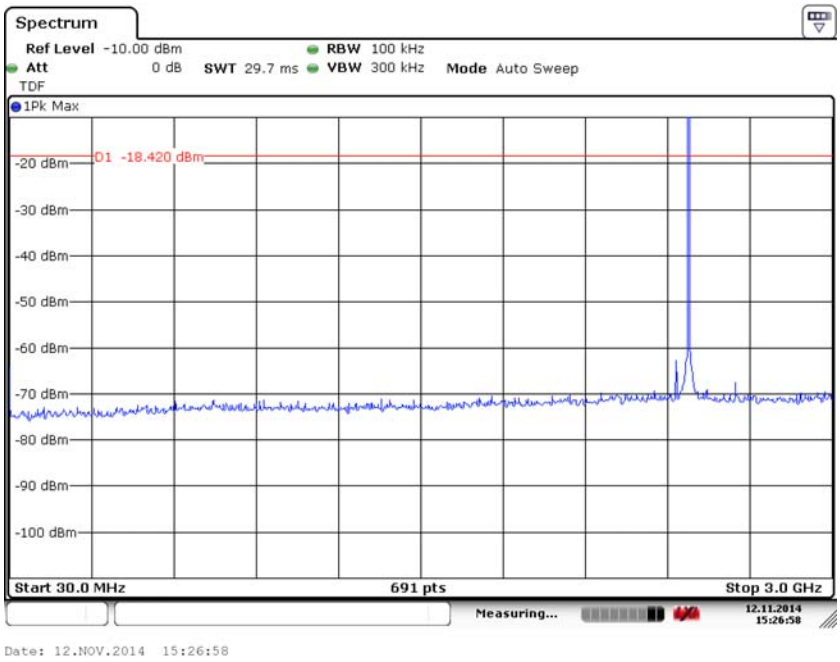


**Fig. 38 Conducted Spurious Emission ( π /4 DQPSK, Ch78, 30 MHz-3 GHz)**

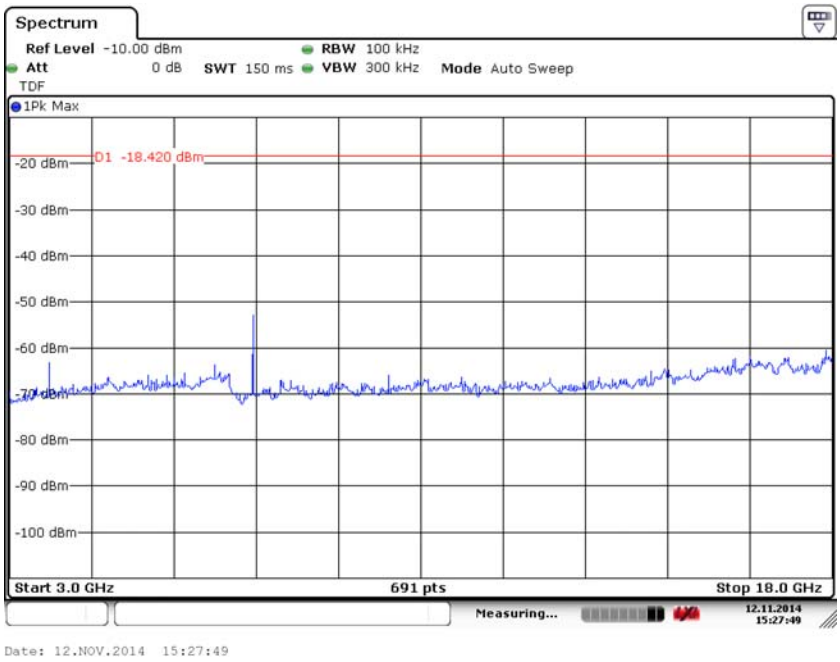


**Fig. 39 Conducted Spurious Emission ( π /4 DQPSK, Ch78, 3GHz-18 GHz)**


**Fig. 40 Conducted Spurious Emission (8DPSK, Ch0, 2.402GHz)**

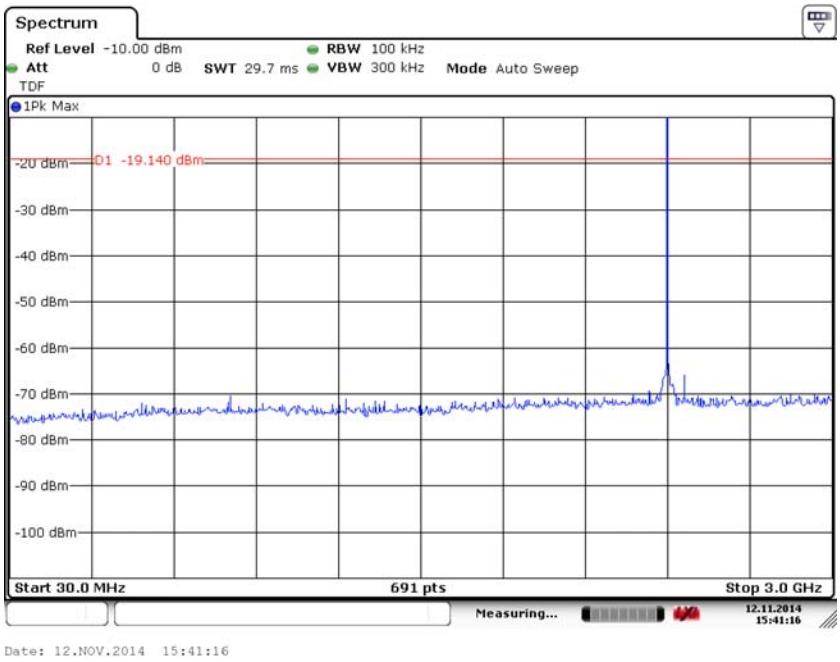


**Fig. 41 Conducted Spurious Emission (8DPSK, Ch0, 30 MHz-3 GHz)**

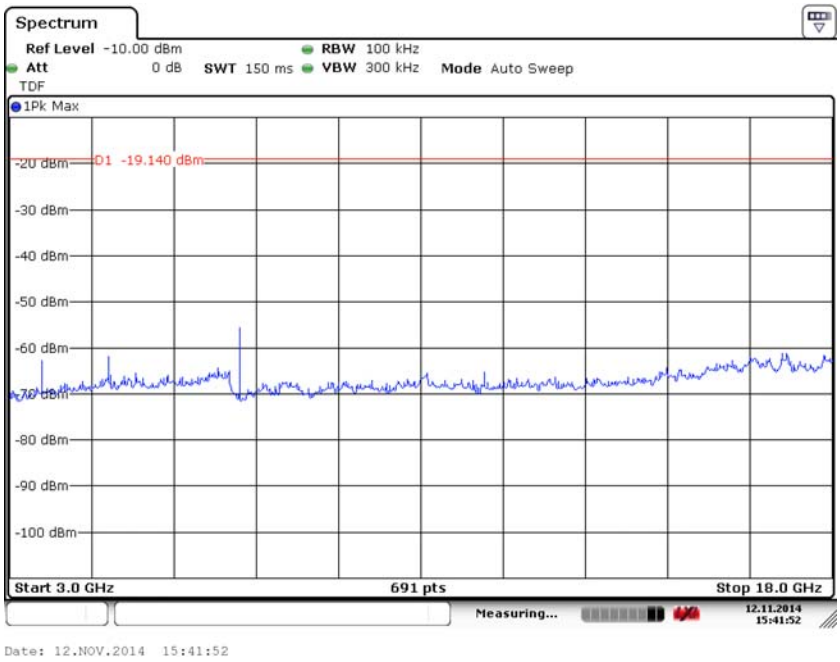


**Fig. 42 Conducted Spurious Emission (8DPSK, Ch0, 3GHz-18 GHz)**

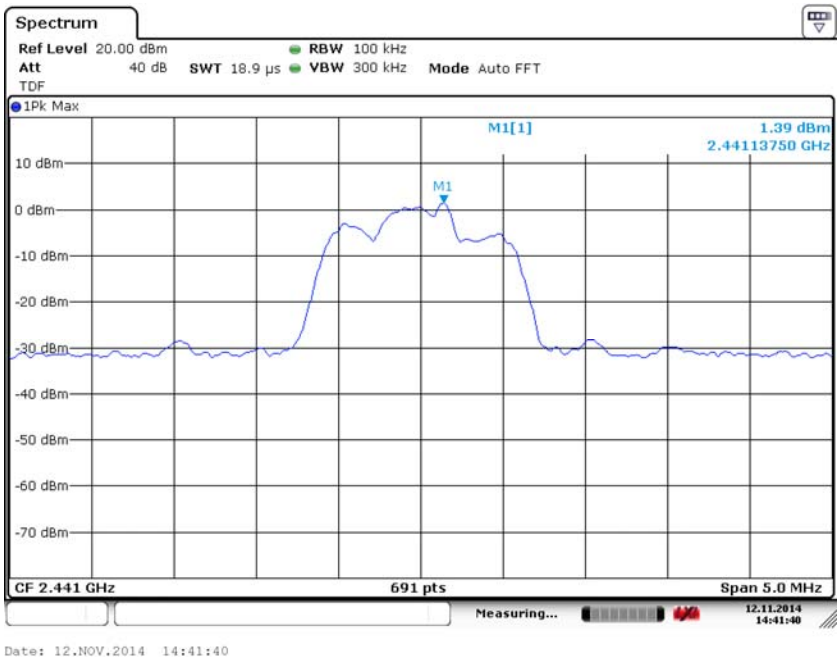


**Fig. 43 Conducted Spurious Emission (8DPSK, Ch39, 2.441GHz)**

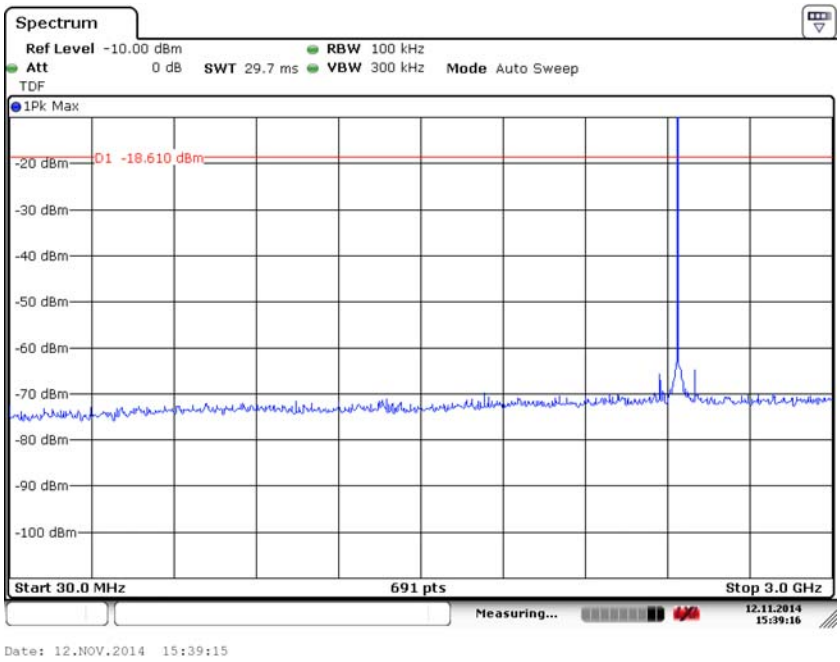


**Fig. 44 Conducted Spurious Emission (8DPSK, Ch39, 30 MHz-3 GHz)**

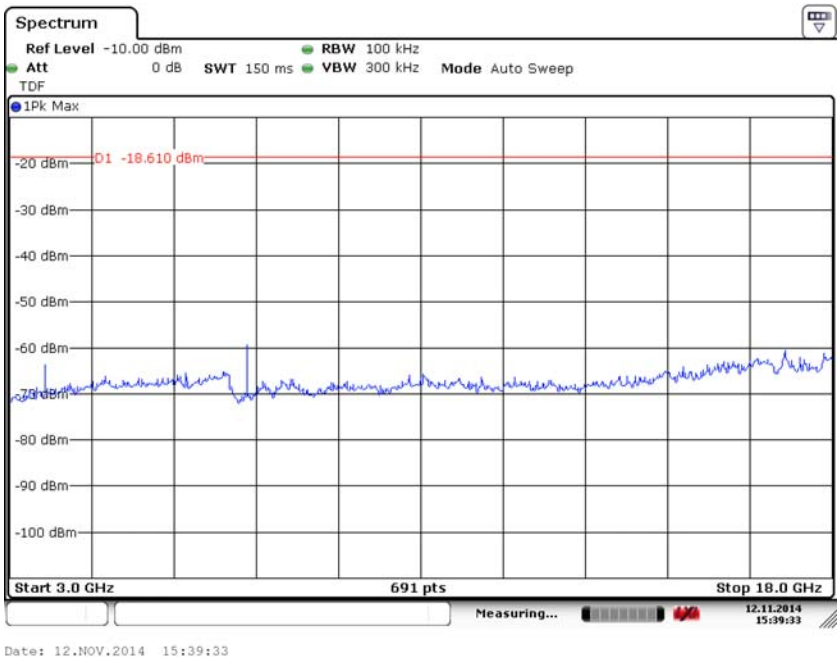


**Fig. 45 Conducted Spurious Emission (8DPSK, Ch39, 3GHz-18 GHz)**

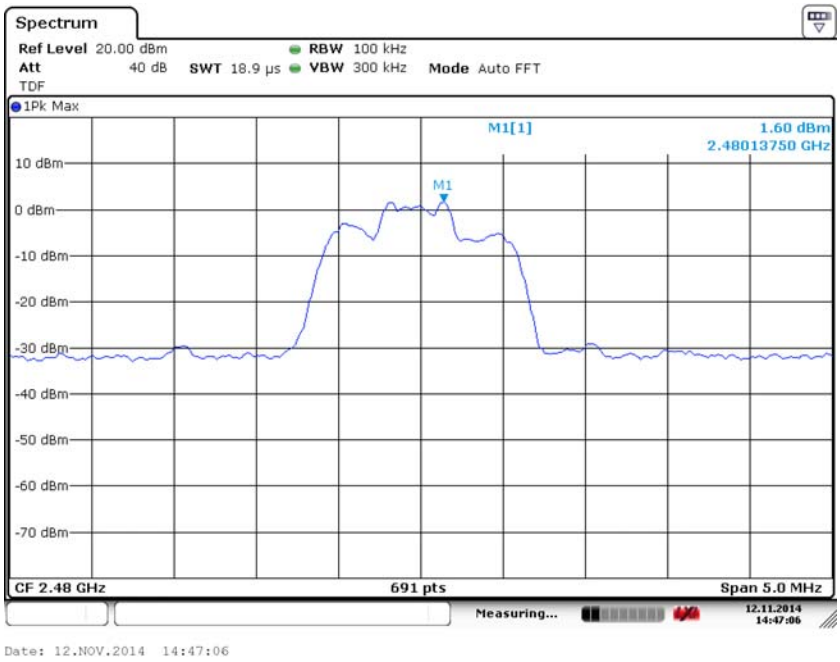


**Fig. 46 Conducted Spurious Emission (8DPSK, Ch78, 2.480GHz)**

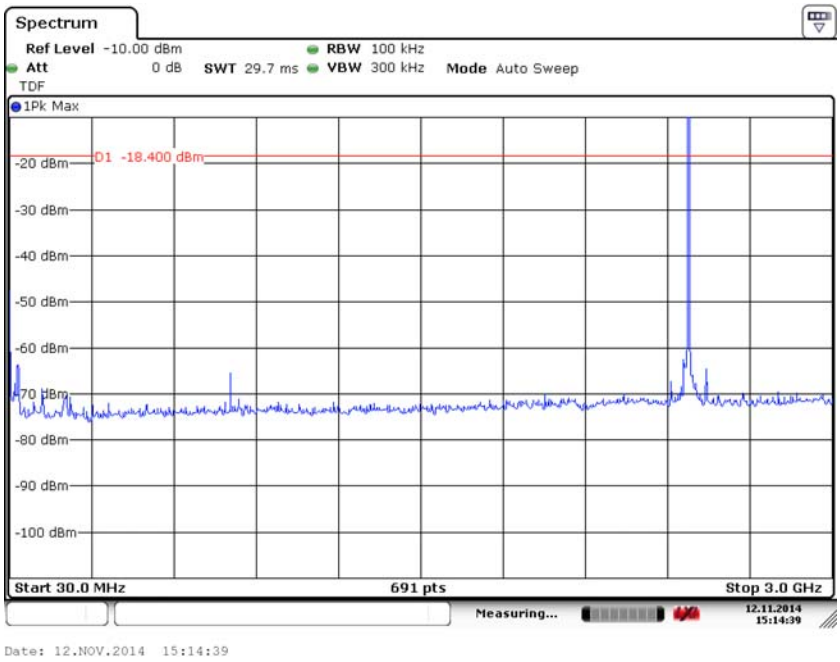


**Fig. 47 Conducted Spurious Emission (8DPSK, Ch78, 30 MHz-3 GHz)**

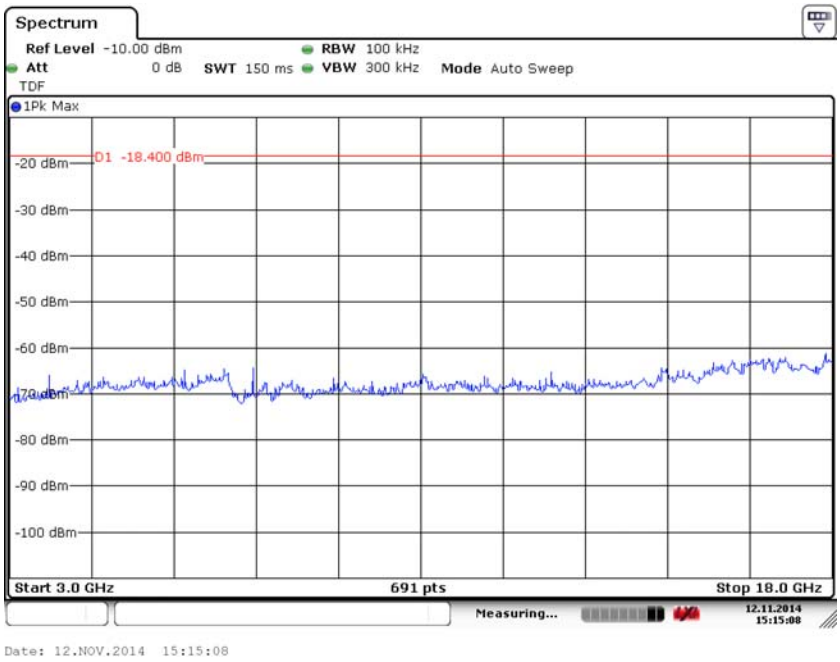


**Fig. 48 Conducted Spurious Emission (8DPSK, Ch78, 3GHz-18 GHz)**

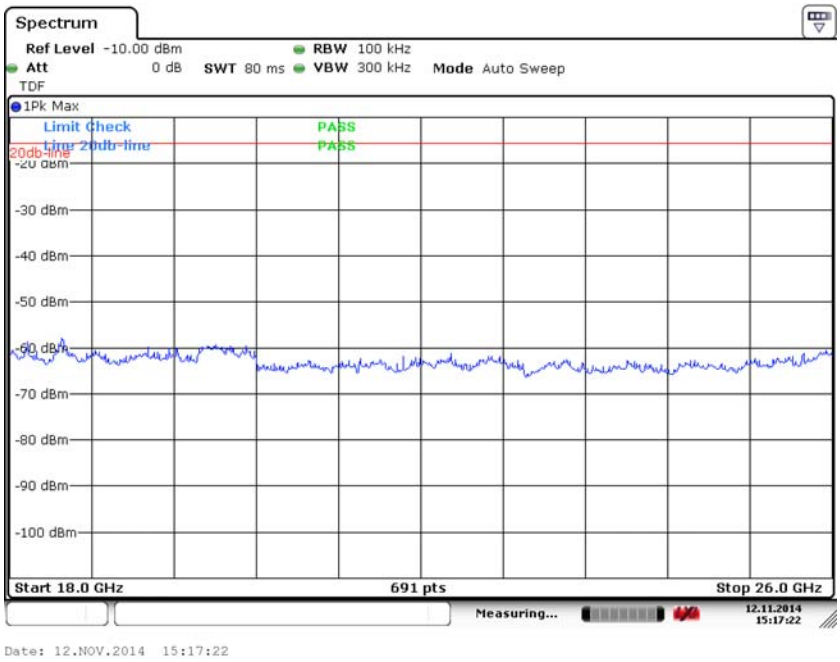


**Fig. 49 Conducted Spurious Emission (All channel, 18 GHz-26 GHz)**

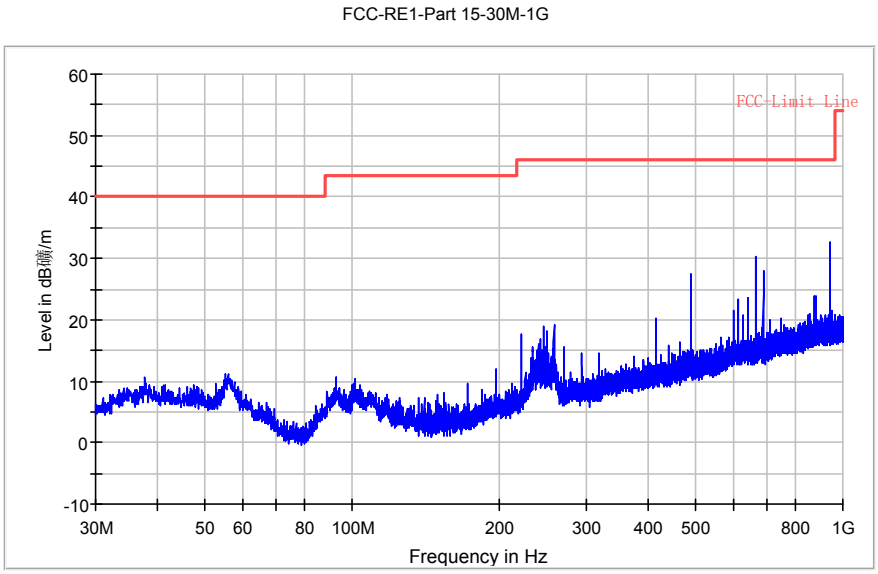


**Fig. 50 Radiated Spurious Emission (GFSK, Ch0, 30 MHz ~1 GHz)**

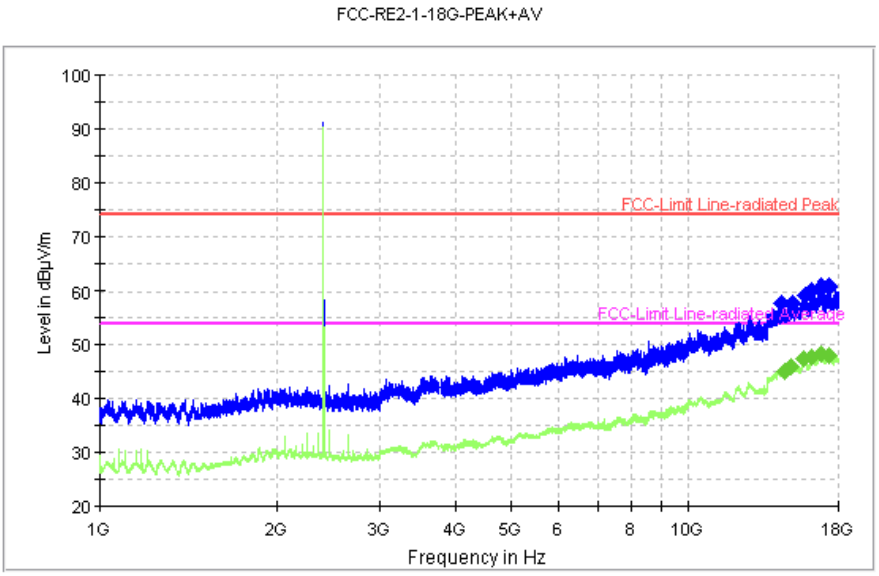


**Fig. 51 Radiated Spurious Emission (GFSK, Ch0, 1 GHz ~18 GHz)**

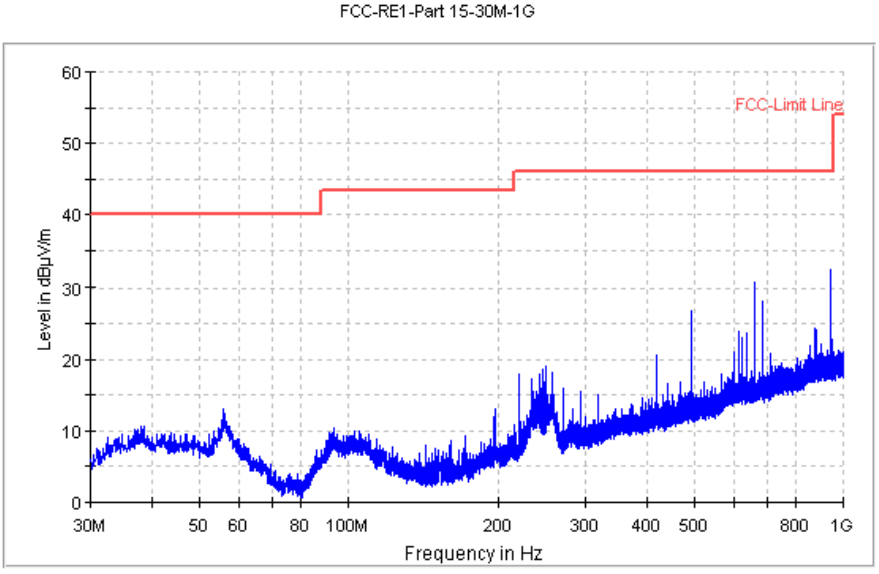


**Fig. 52 Radiated Spurious Emission (GFSK, Ch39, 30 MHz ~1 GHz)**

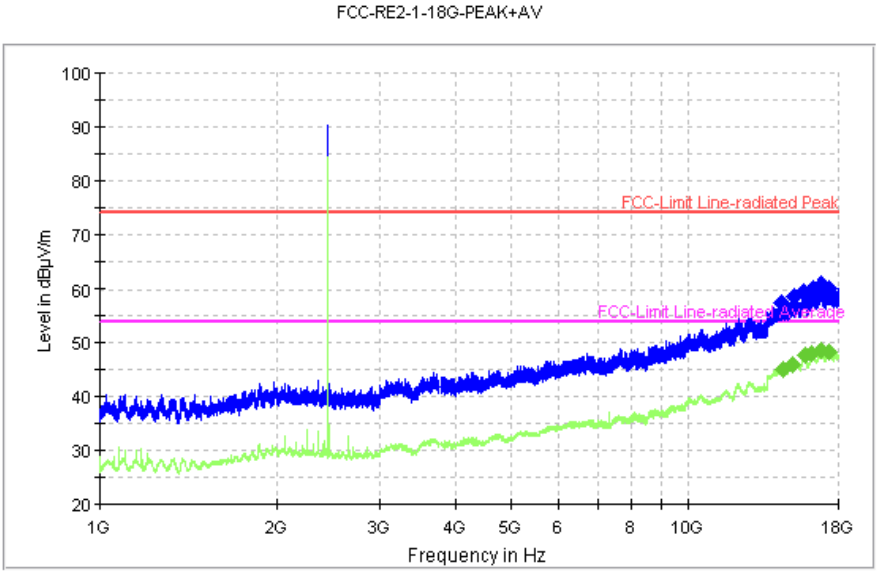


**Fig. 53 Radiated Spurious Emission (GFSK, Ch39, 1 GHz ~18 GHz)**

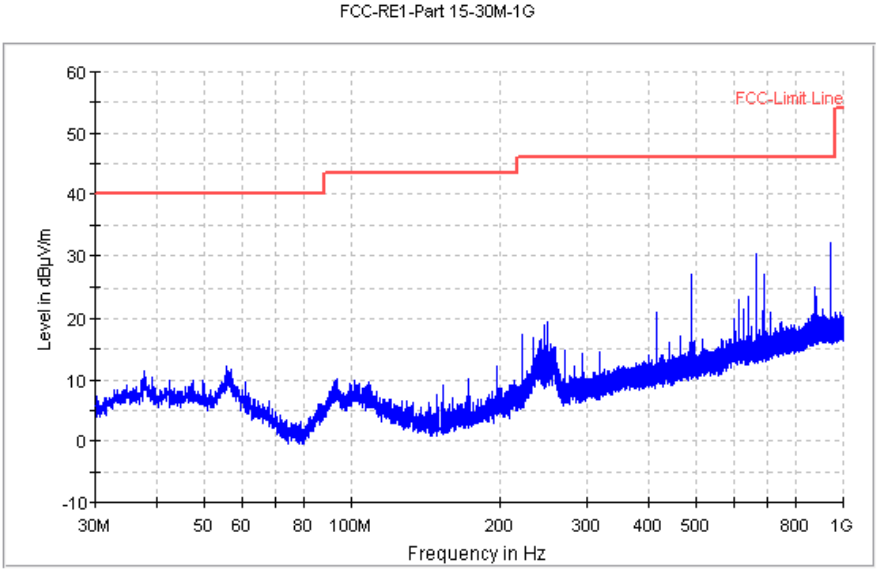


**Fig. 54 Radiated Spurious Emission (GFSK, Ch78, 30 MHz ~1 GHz)**

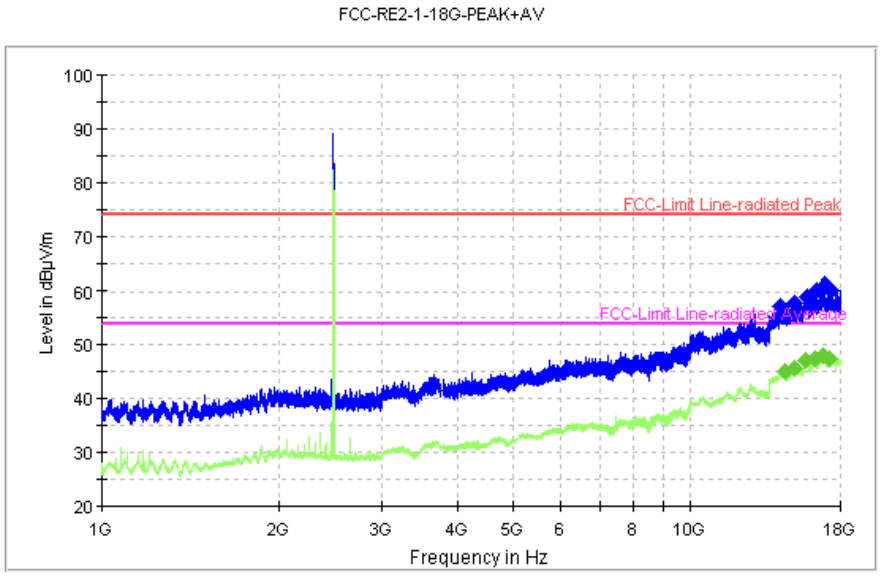


**Fig. 55 Radiated Spurious Emission (GFSK, Ch78, 1 GHz ~18 GHz)**

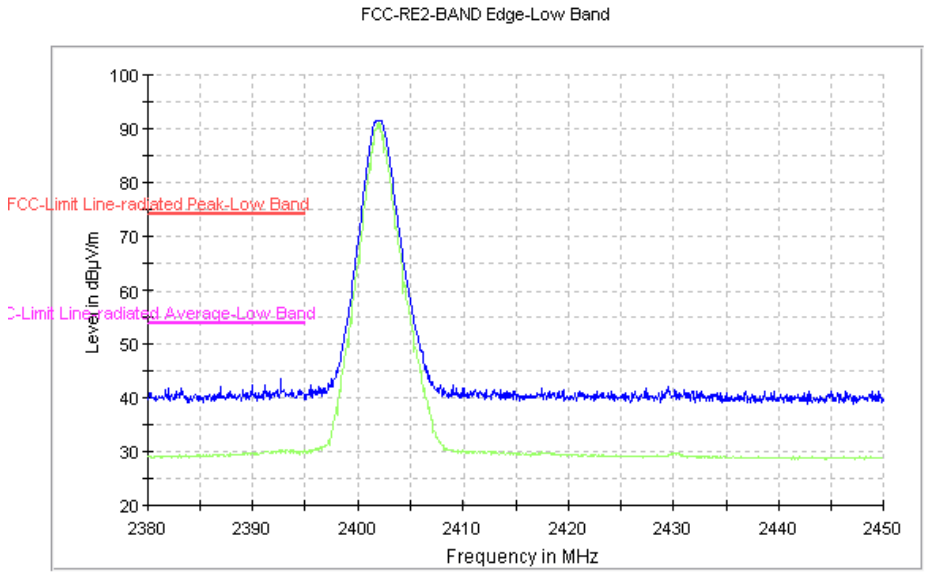


**Fig. 56 Radiated Emission Power (GFSK, Ch0, 2380GHz~2450GHz)**

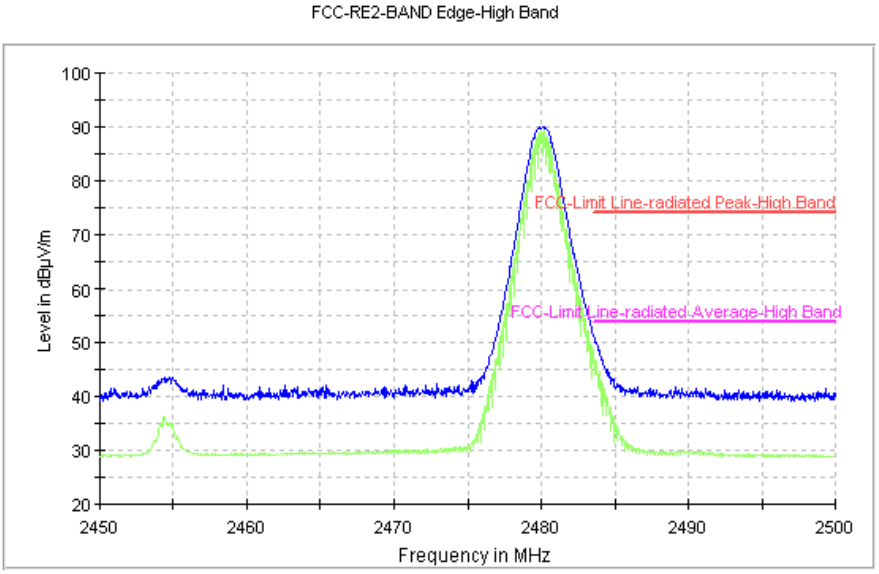


**Fig. 57 Radiated Emission Power (GFSK, Ch78, 2450GHz~2500GHz)**

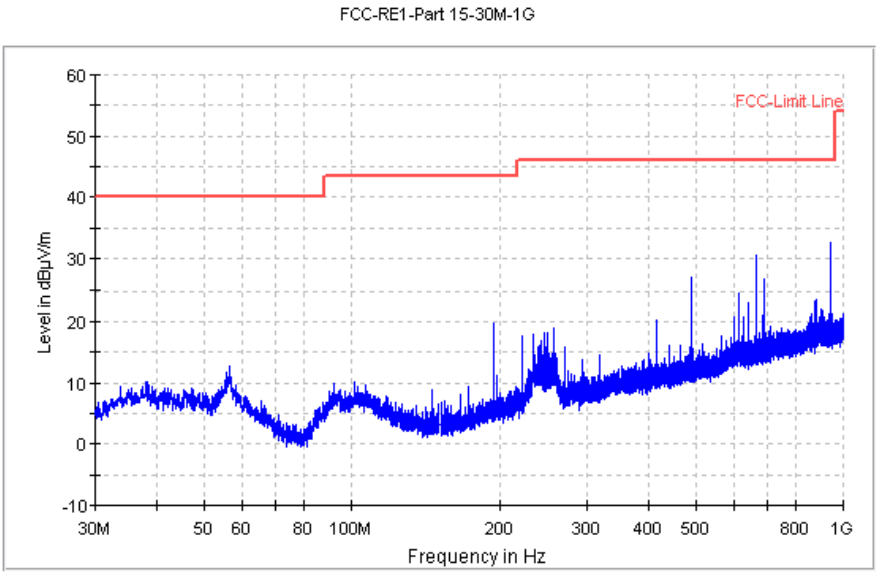


**Fig. 58 Radiated Spurious Emission ( π /4 DQPSK, Ch0, 30 MHz ~1 GHz)**

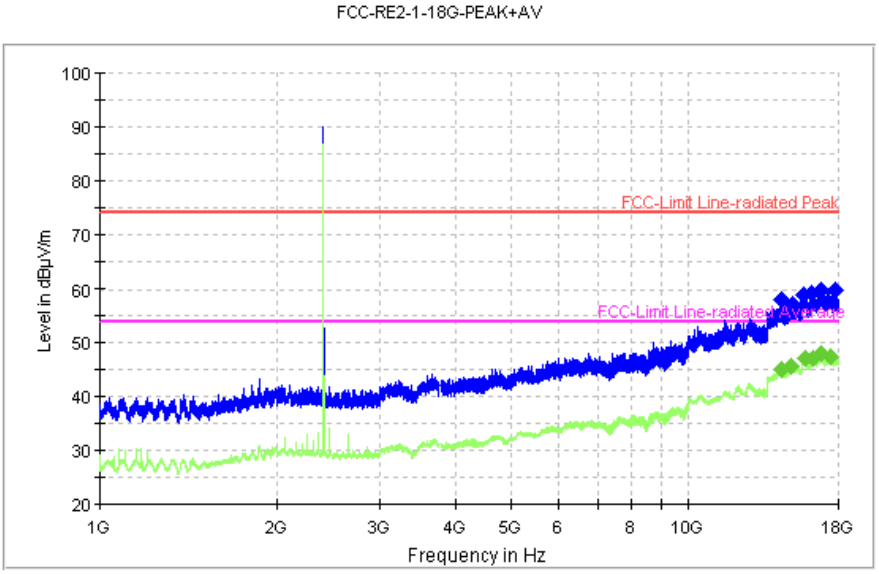


**Fig. 59 Radiated Spurious Emission ( π /4 DQPSK, Ch0, 1 GHz ~18 GHz)**

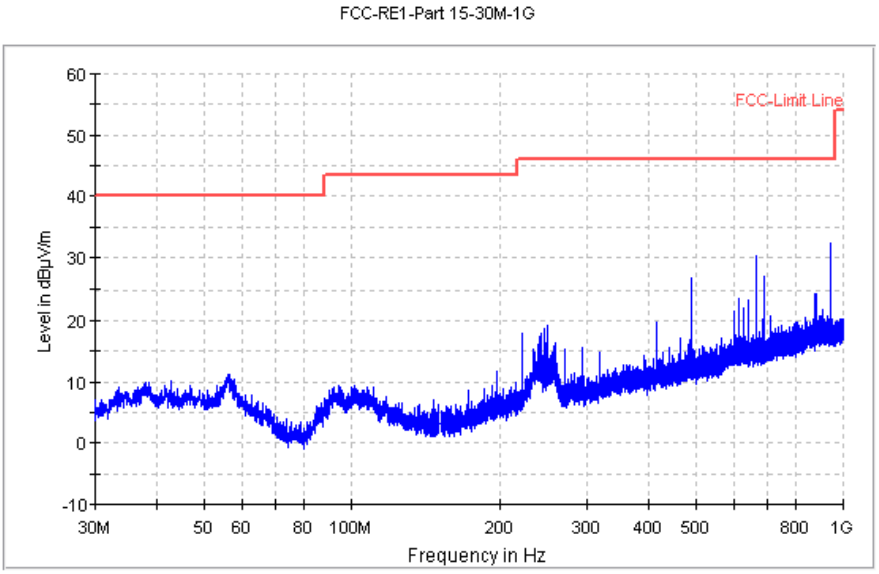


**Fig. 60 Radiated Spurious Emission ( π /4 DQPSK, Ch39, 30 MHz ~1 GHz)**

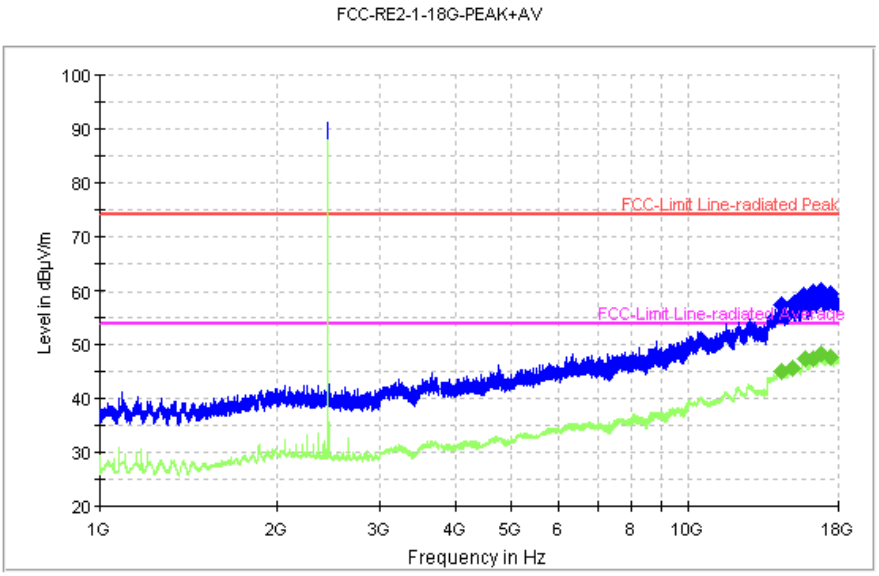


**Fig. 61 Radiated Spurious Emission ( π /4 DQPSK, Ch39, 1 GHz ~18 GHz)**

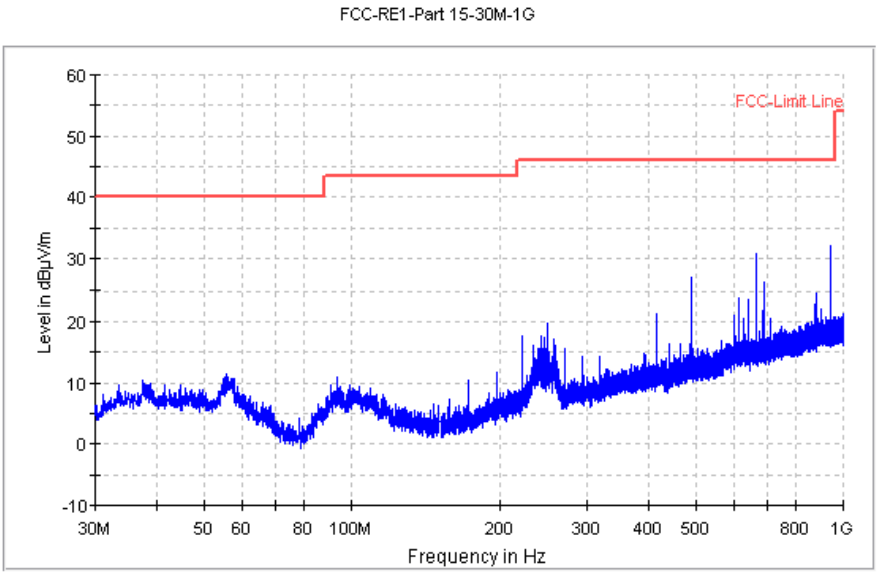


**Fig. 62 Radiated Spurious Emission ( π /4 DQPSK, Ch78, 30 MHz ~1 GHz)**

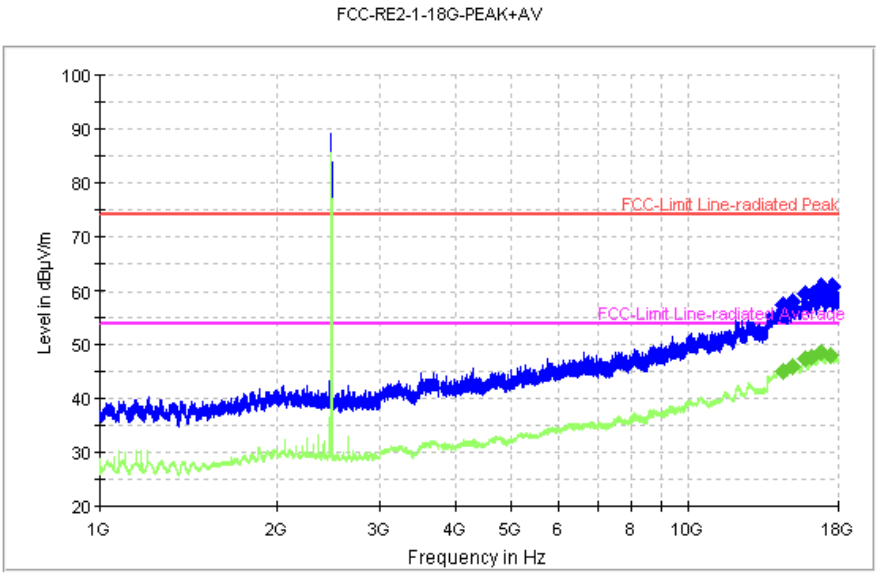


**Fig. 63 Radiated Spurious Emission ( π /4 DQPSK, Ch78, 1 GHz ~18 GHz)**

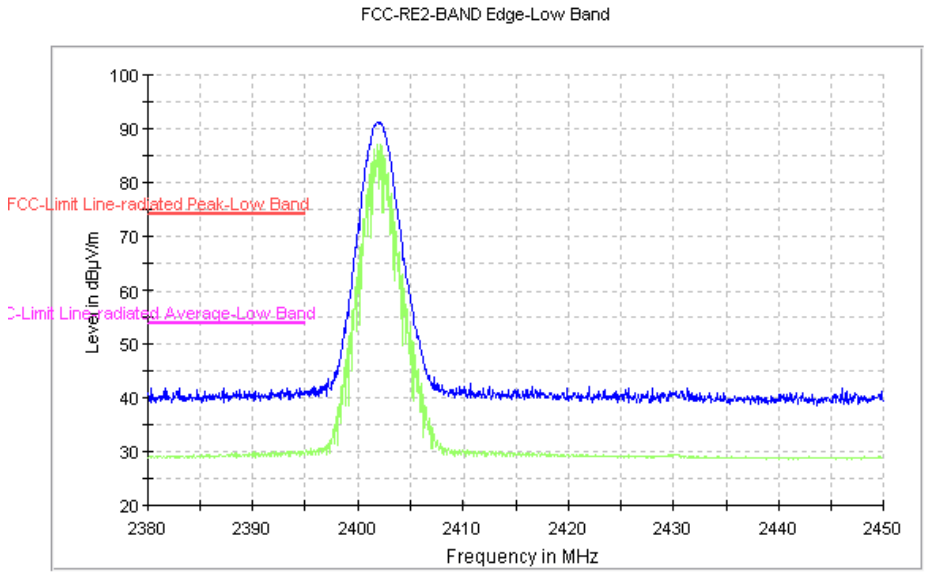


**Fig. 64 Radiated Emission Power ( π /4 DQPSK, Ch0, 2380GHz~2450GHz)**

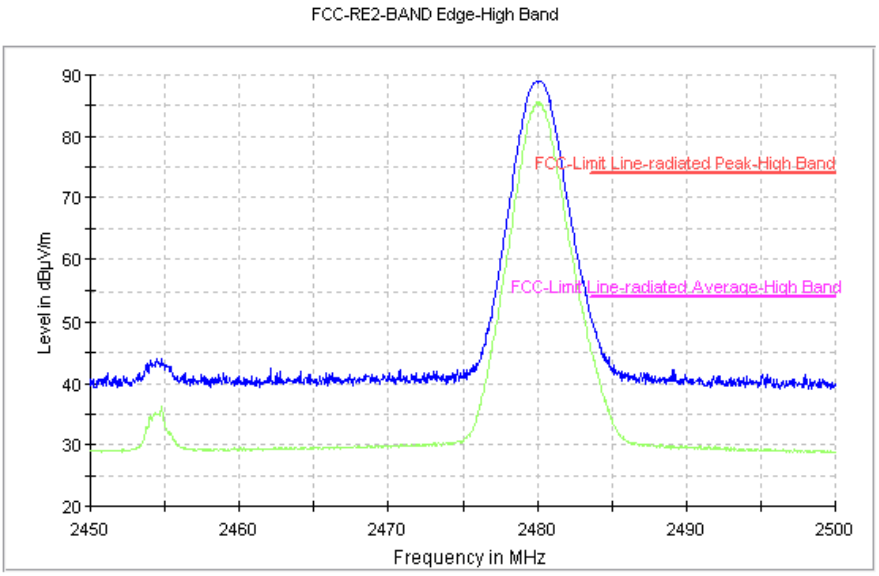


**Fig. 65 Radiated Emission Power ( π /4 DQPSK, Ch78, 2450GHz~2500GHz)**

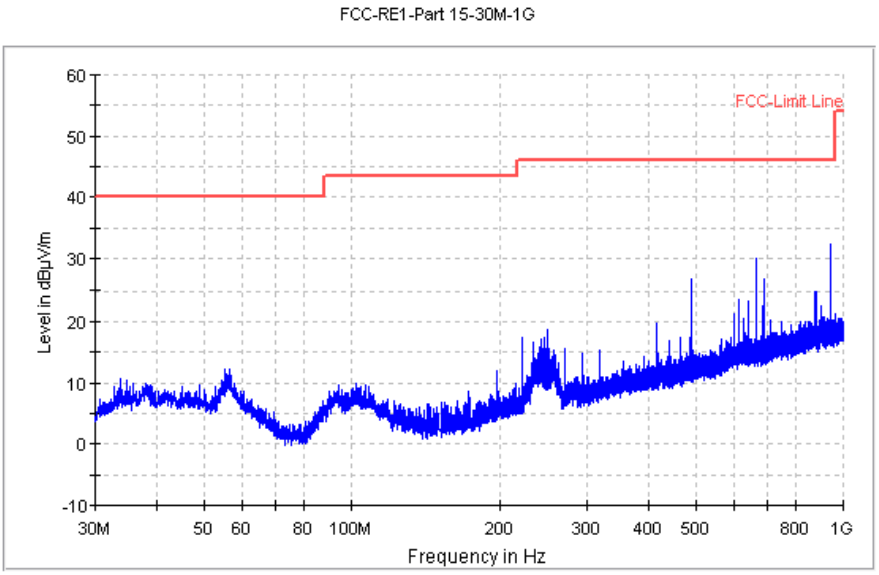


**Fig. 66 Radiated Spurious Emission (8DPSK, Ch0, 30 MHz ~1 GHz)**

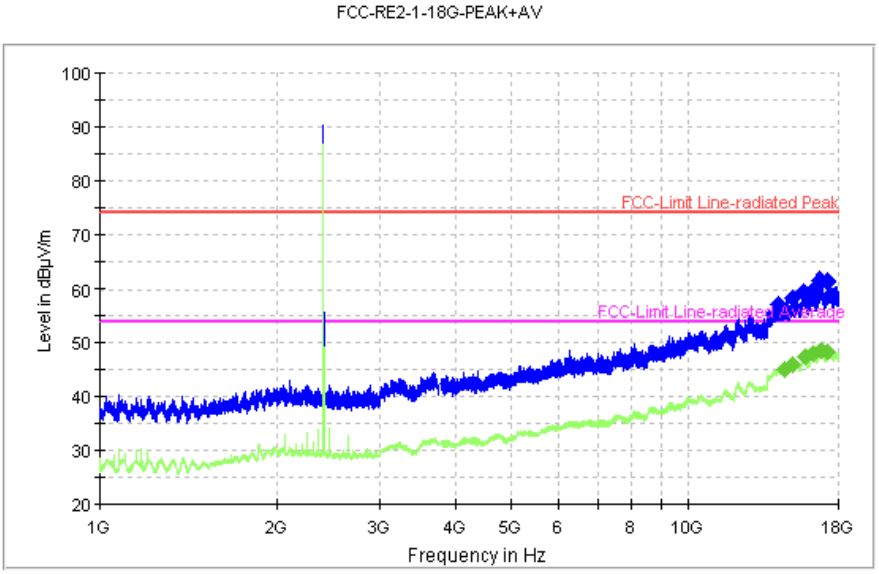


**Fig. 67 Radiated Spurious Emission (8DPSK, Ch0, 1 GHz ~18 GHz)**

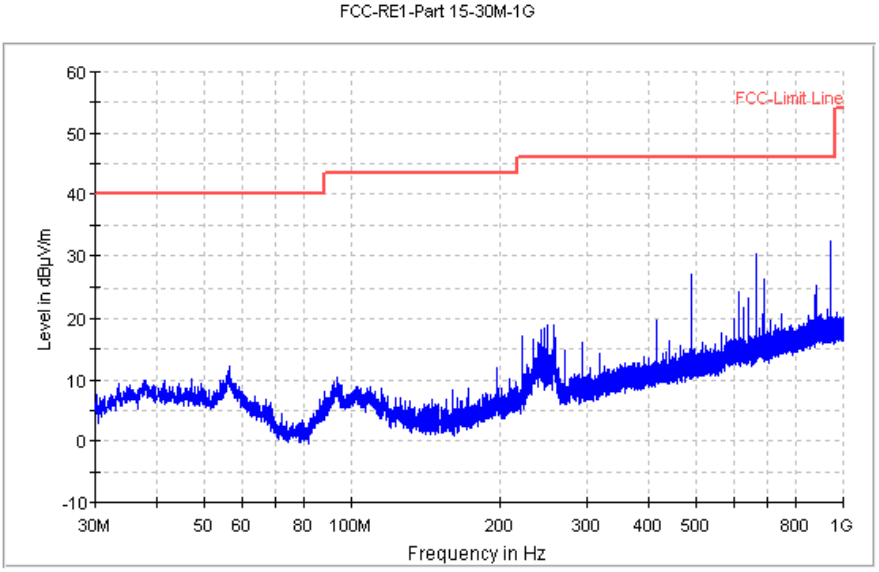


**Fig. 68 Radiated Spurious Emission (8DPSK, Ch39, 30 MHz ~1 GHz)**

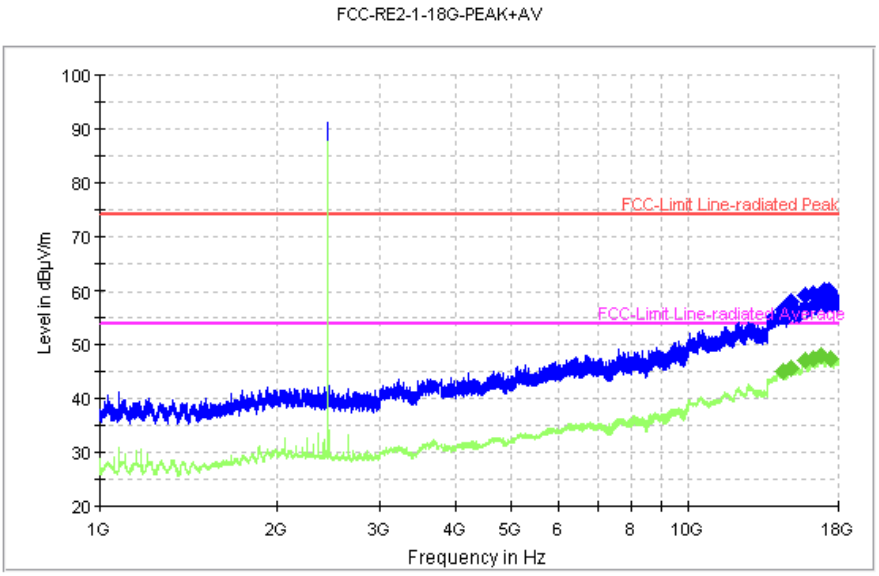


**Fig. 69 Radiated Spurious Emission (8DPSK, Ch39, 1 GHz ~18 GHz)**

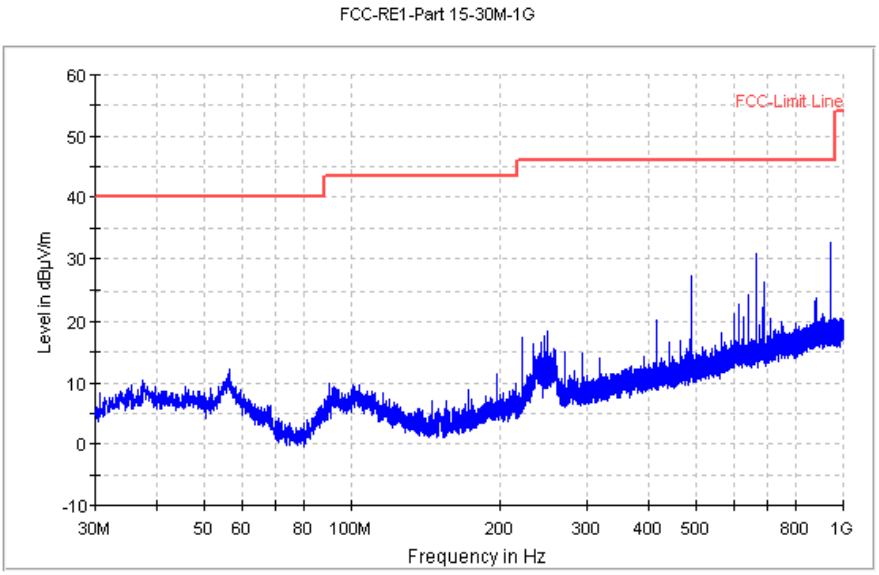


**Fig. 70 Radiated Spurious Emission (8DPSK, Ch78, 30 MHz ~1 GHz)**

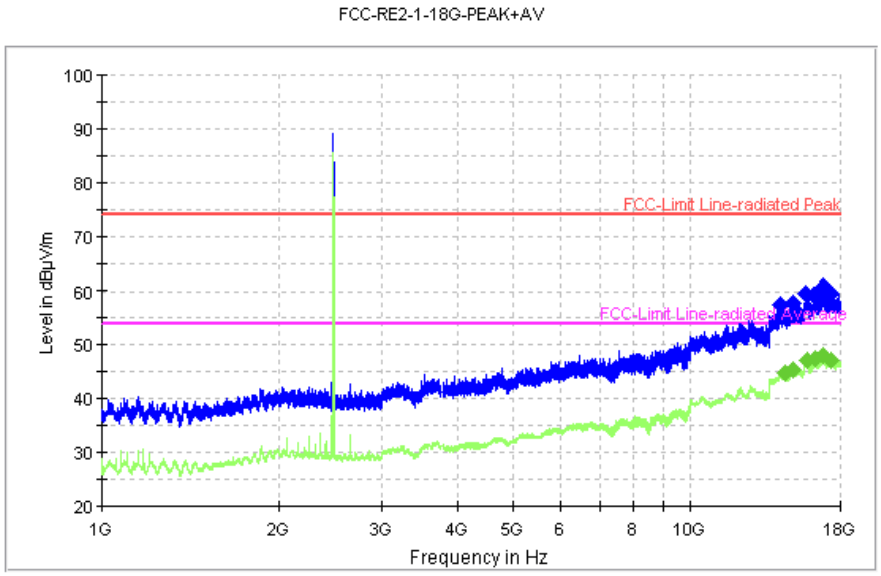


**Fig. 71 Radiated Spurious Emission (8DPSK, Ch78, 1 GHz ~18 GHz)**

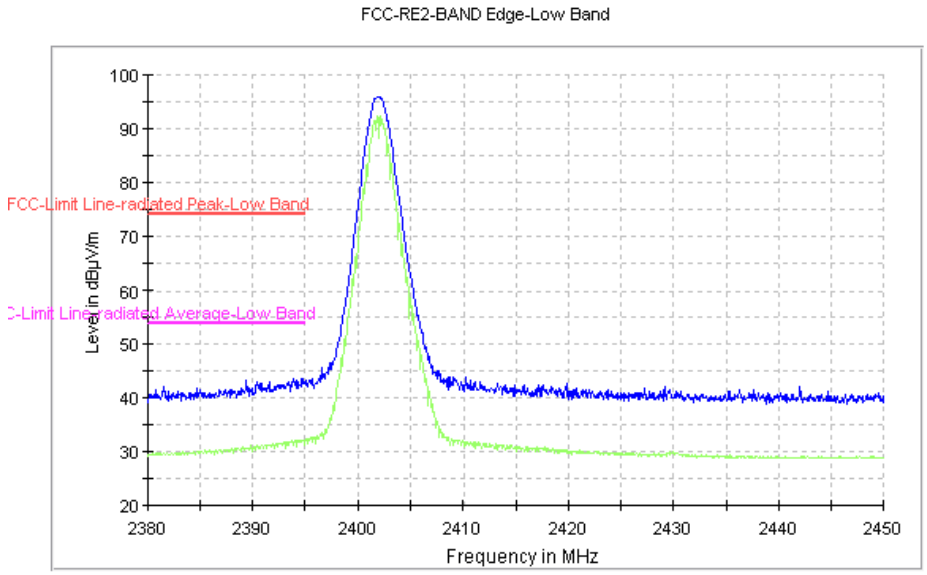


**Fig. 72 Radiated Emission Power (8DPSK, Ch0, 2380GHz~2450GHz)**

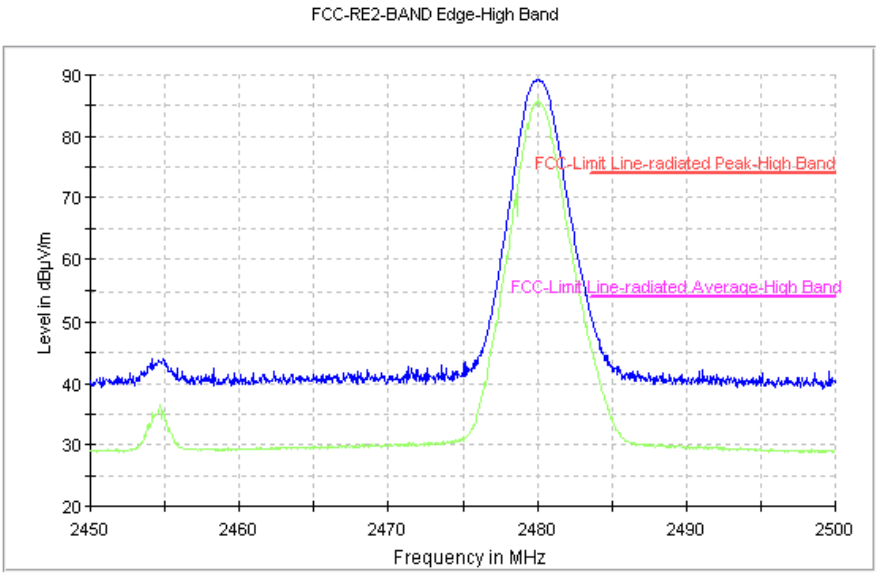


**Fig. 73 Radiated Emission Power (8DPSK, Ch78, 2450GHz~2500GHz)**

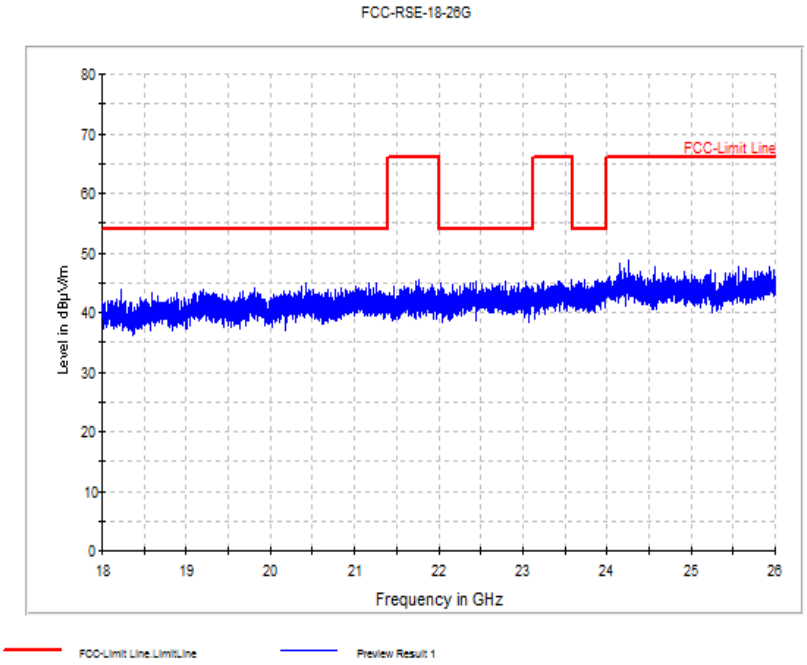


**Fig. 74 Radiated Spurious Emission (All channel, 18 GHz ~26 GHz)**

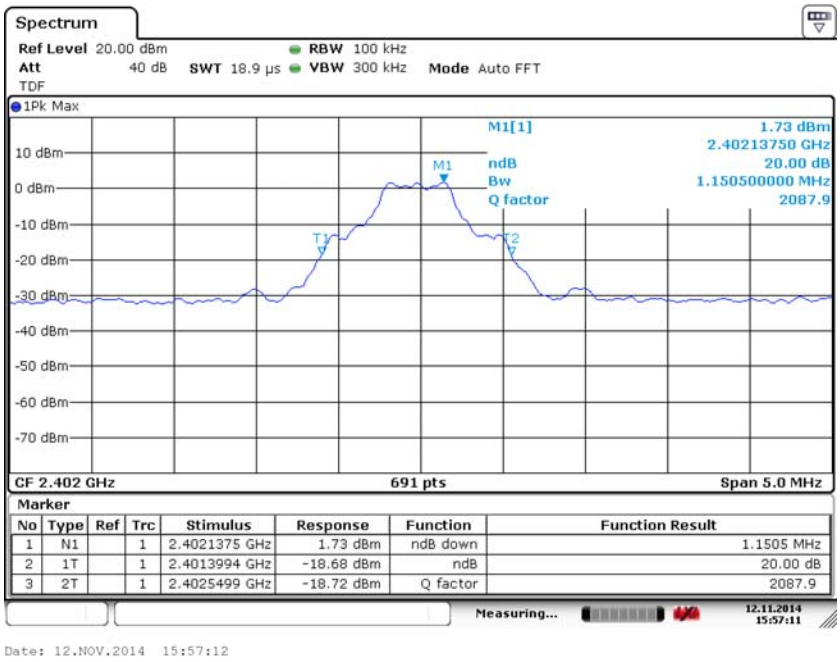


**Fig. 75 Occupied 20dB Bandwidth (GFSK, Ch 0)**

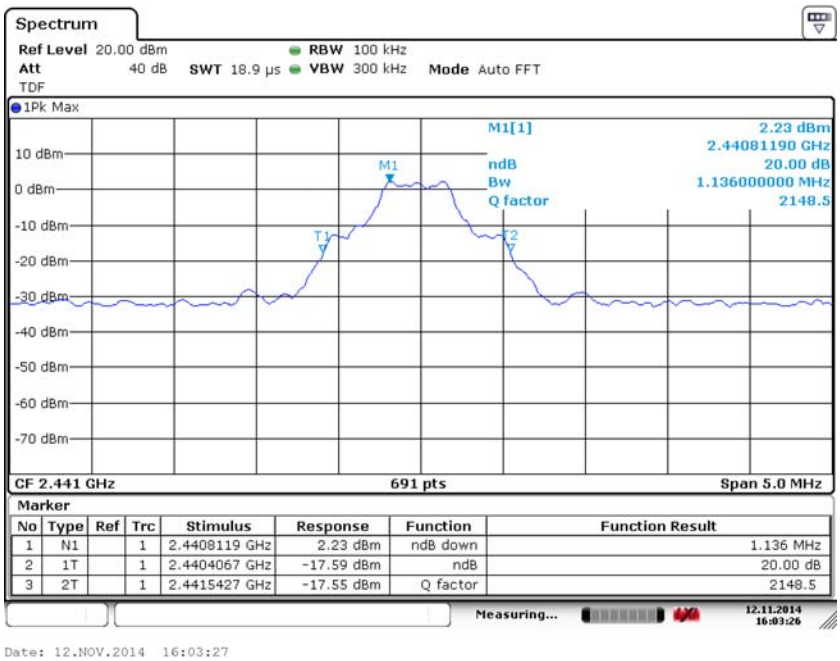


**Fig. 76 Occupied 20dB Bandwidth (GFSK, Ch 39)**

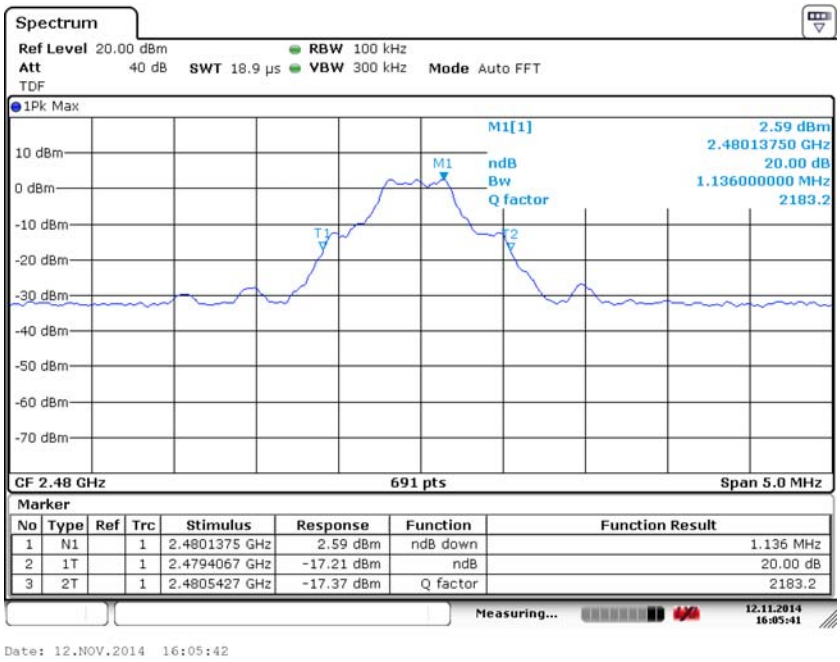


**Fig. 77 Occupied 20dB Bandwidth (GFSK, Ch 78)**

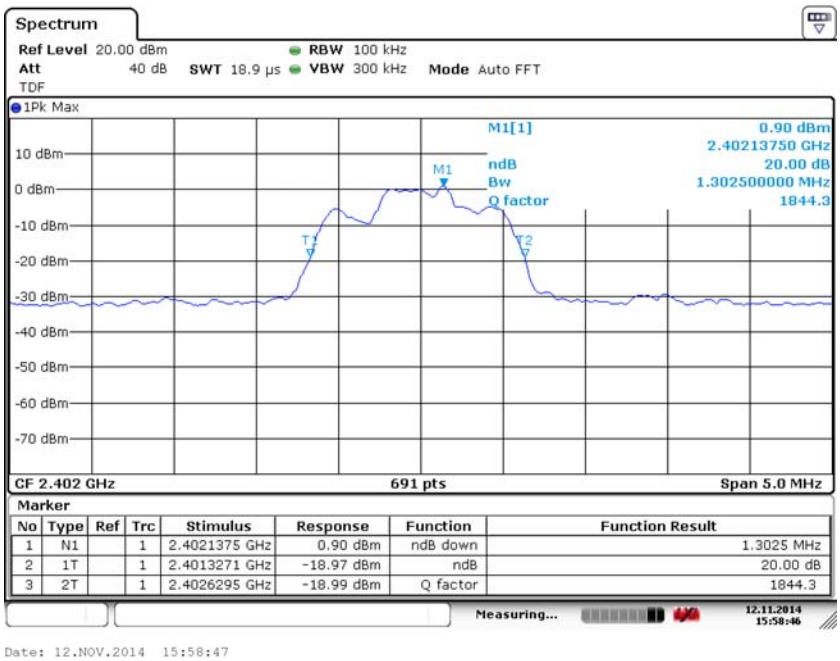


**Fig. 78 Occupied 20dB Bandwidth ( π /4 DQPSK, Ch 0)**

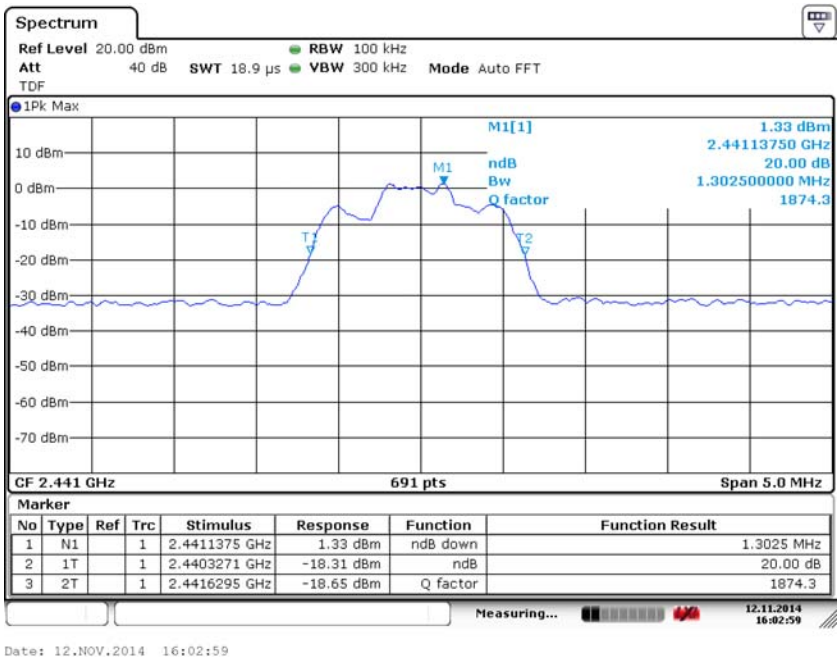


**Fig. 79 Occupied 20dB Bandwidth ( π /4 DQPSK, Ch 39)**

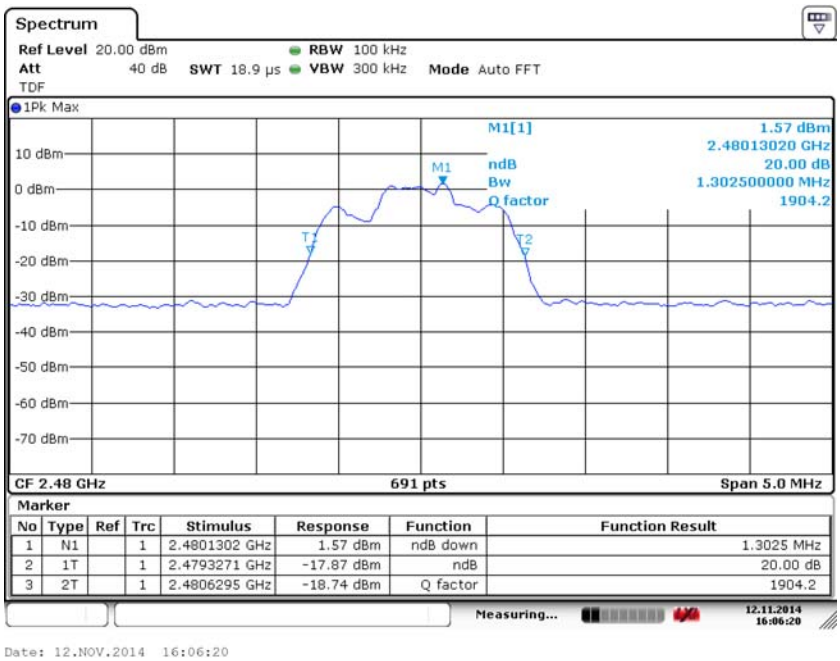


**Fig. 80 Occupied 20dB Bandwidth ( π /4 DQPSK, Ch 78)**

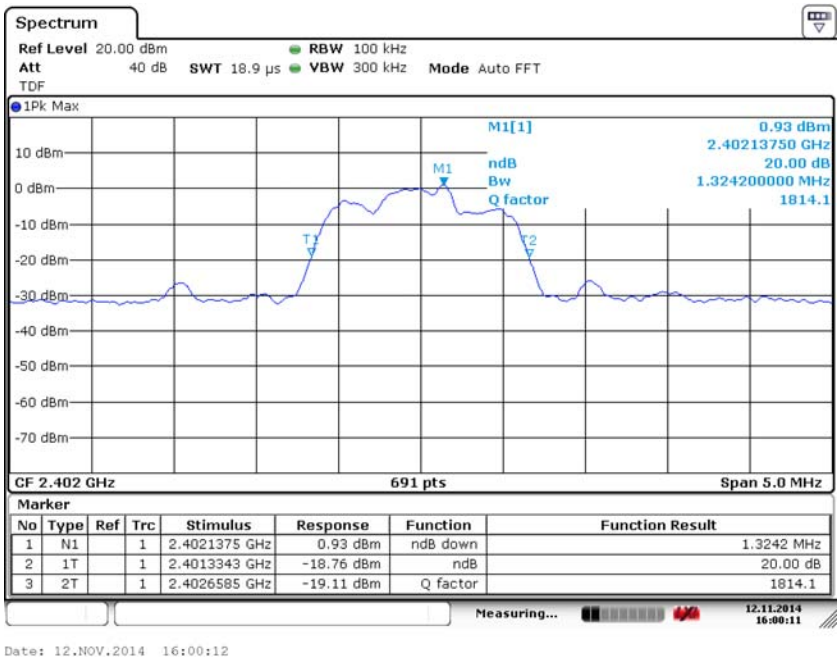


**Fig. 81 Occupied 20dB Bandwidth (8DPSK, Ch 0)**

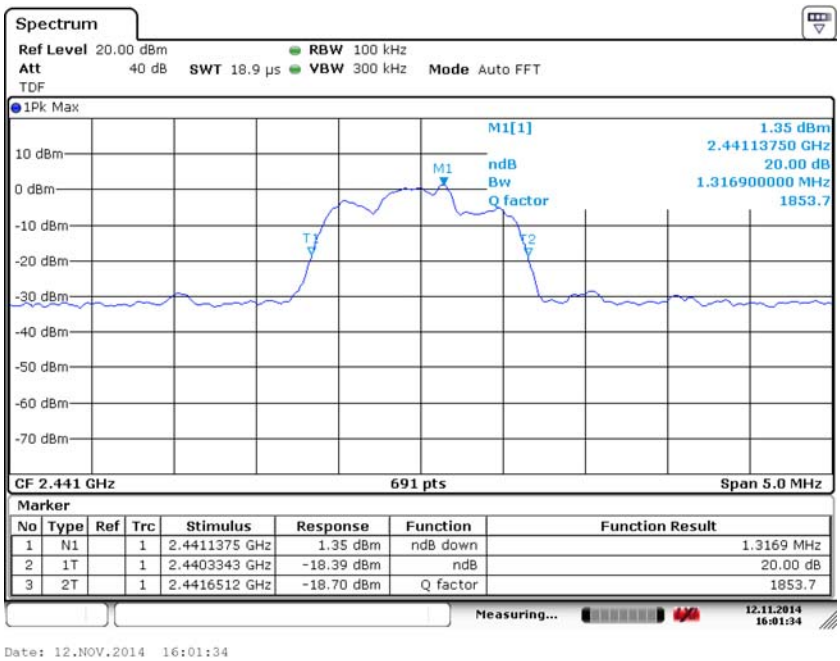


**Fig. 82 Occupied 20dB Bandwidth (8DPSK, Ch 39)**

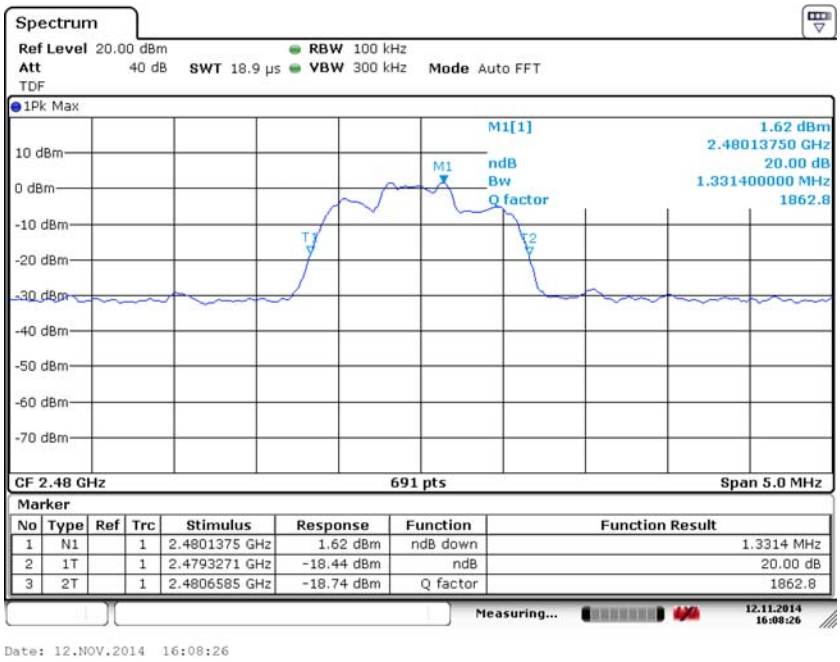


**Fig. 83 Occupied 20dB Bandwidth (8DPSK, Ch 78)**

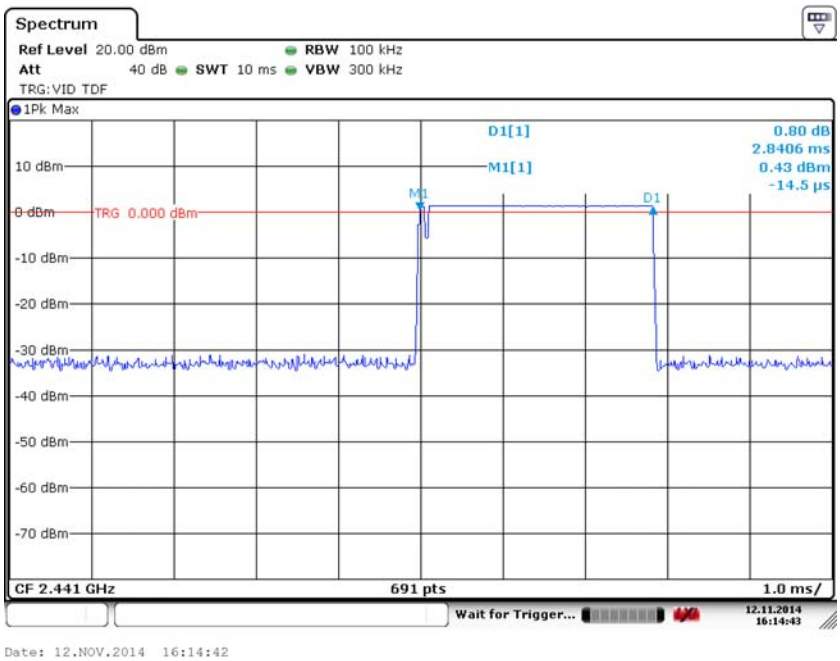


**Fig. 84 Time of Occupancy(Dwell Time) (GFSK, Ch39)**

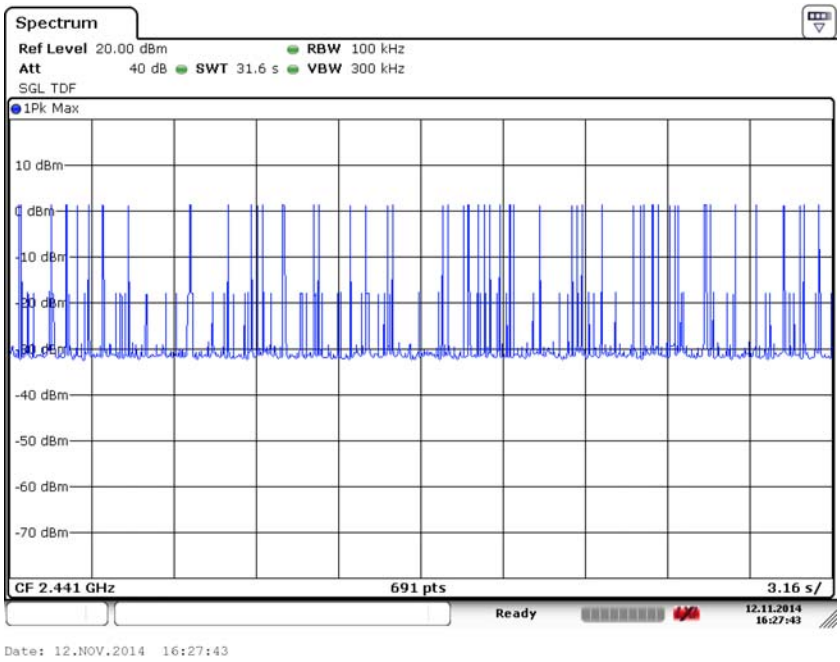


**Fig. 85 Number of Transmissions (GFSK, Ch39)**

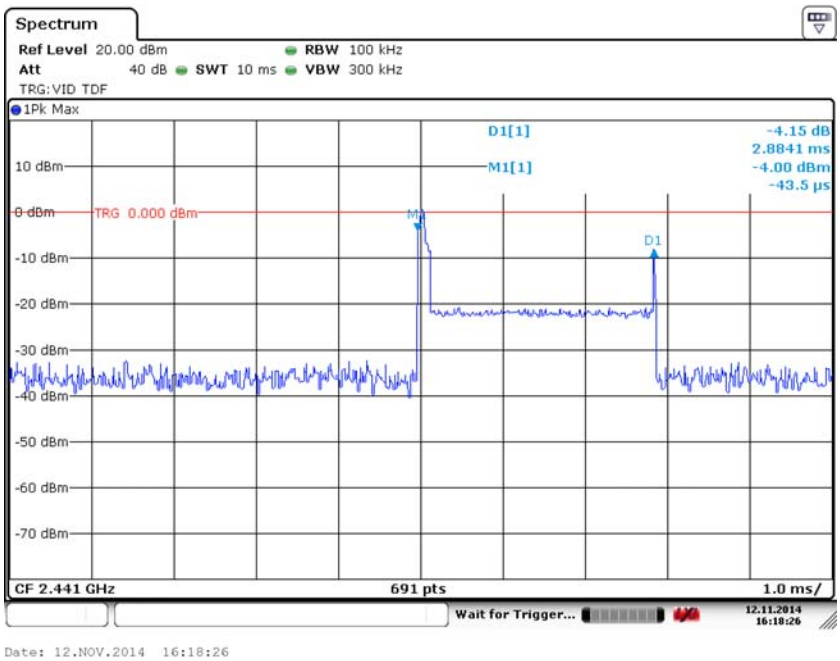


**Fig. 86 Time of Occupancy(Dwell Time) ( π /4 DQPSK, Ch39)**

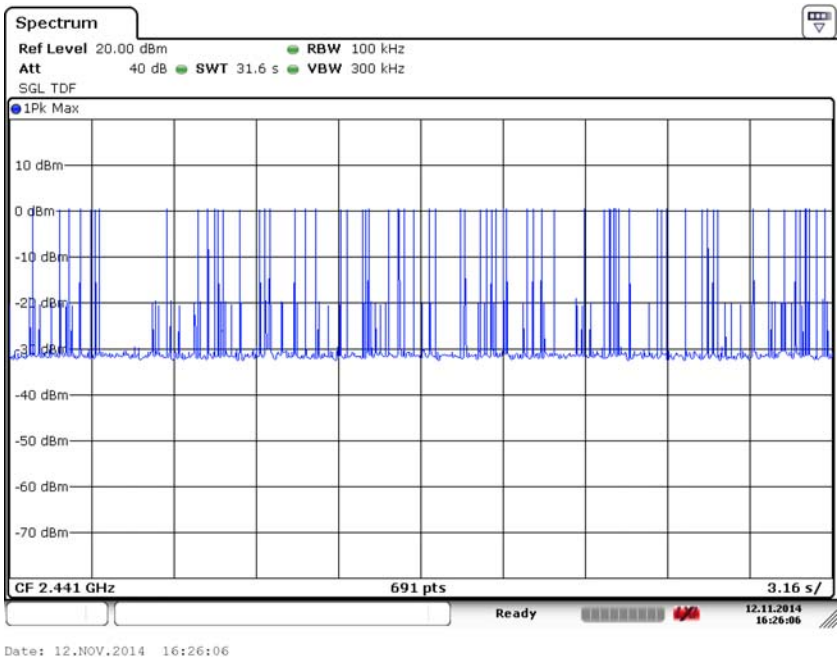


**Fig. 87 Number of Transmissions ( π /4 DQPSK, Ch39)**

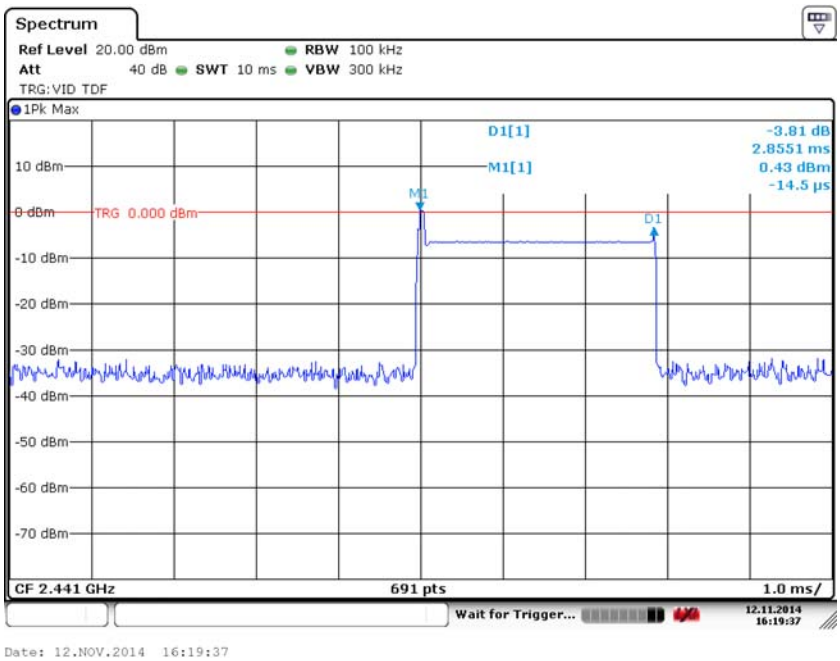


**Fig. 88 Time of Occupancy(Dwell Time) (8DPSK, Ch39)**

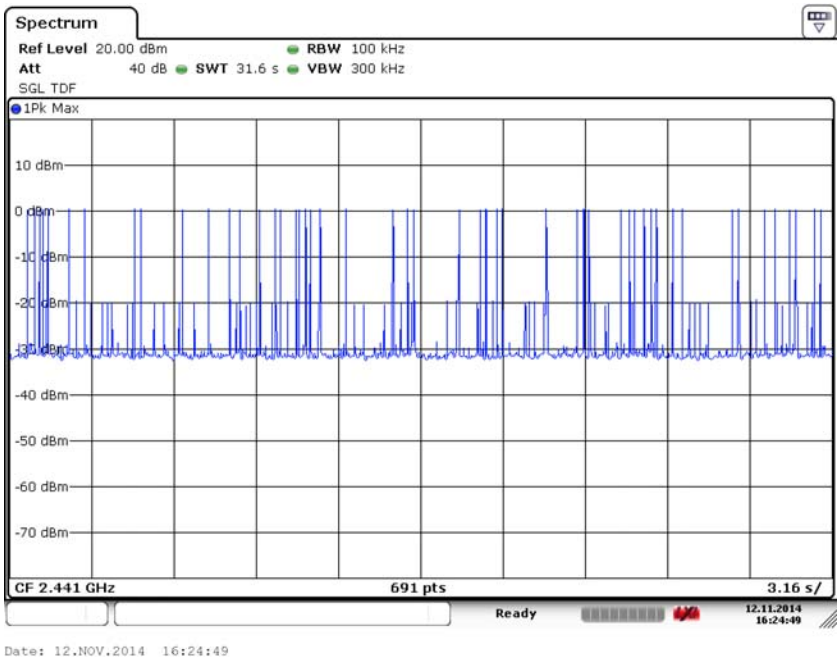


**Fig. 89 Number of Transmissions (8DPSK, Ch39)**

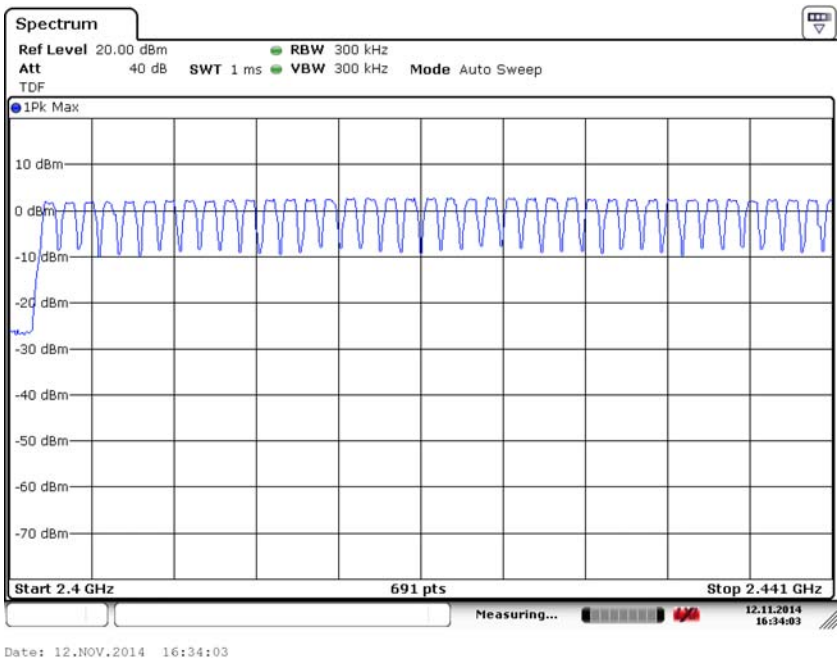


**Fig. 90 Hopping channel ch0~39 (GFSK, Ch39)**

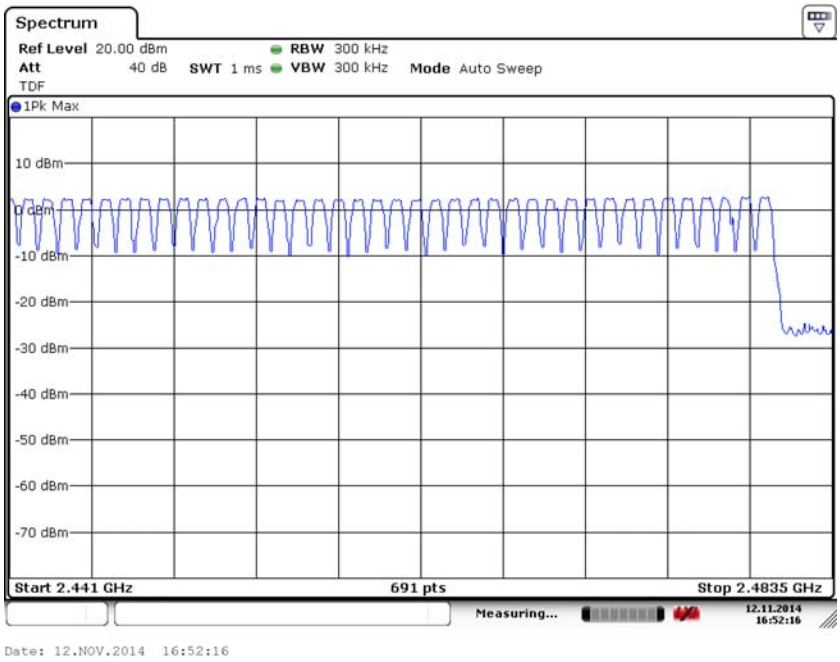


**Fig. 91 Hopping channel ch39~78 (GFSK, Ch39)**

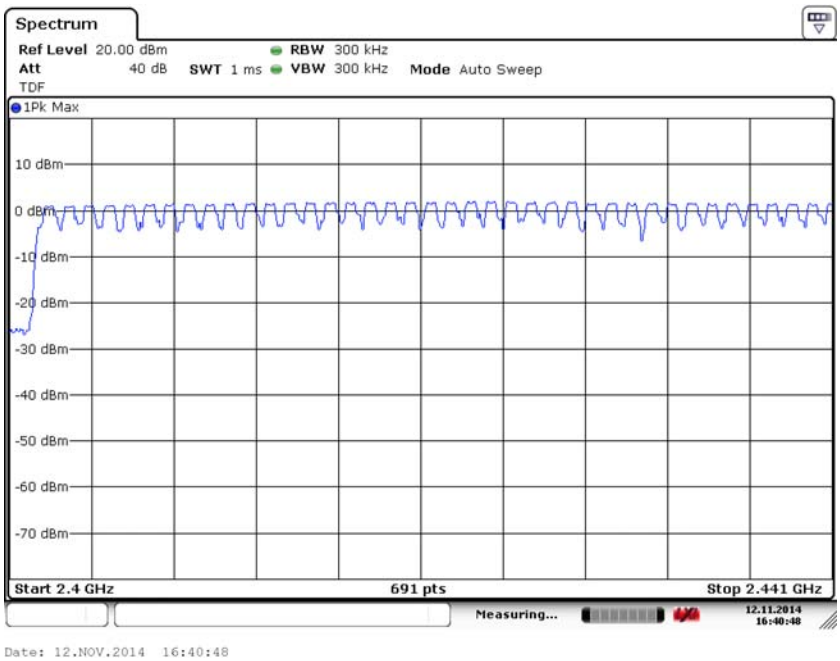


**Fig. 92 Hopping channel ch0~39 ( π /4 DQPSK, Ch39)**

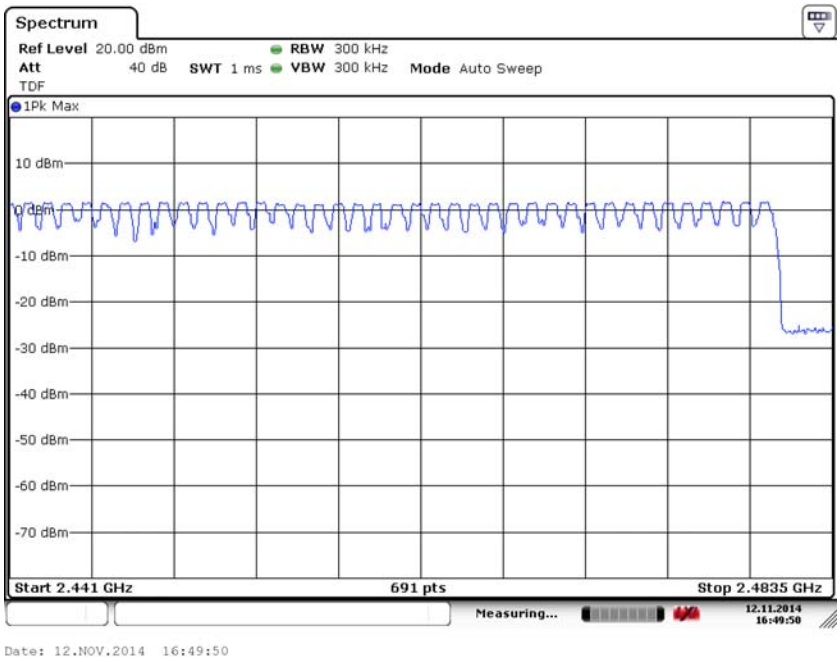


**Fig. 93 Hopping channel ch39~78 ( π /4 DQPSK, Ch39)**

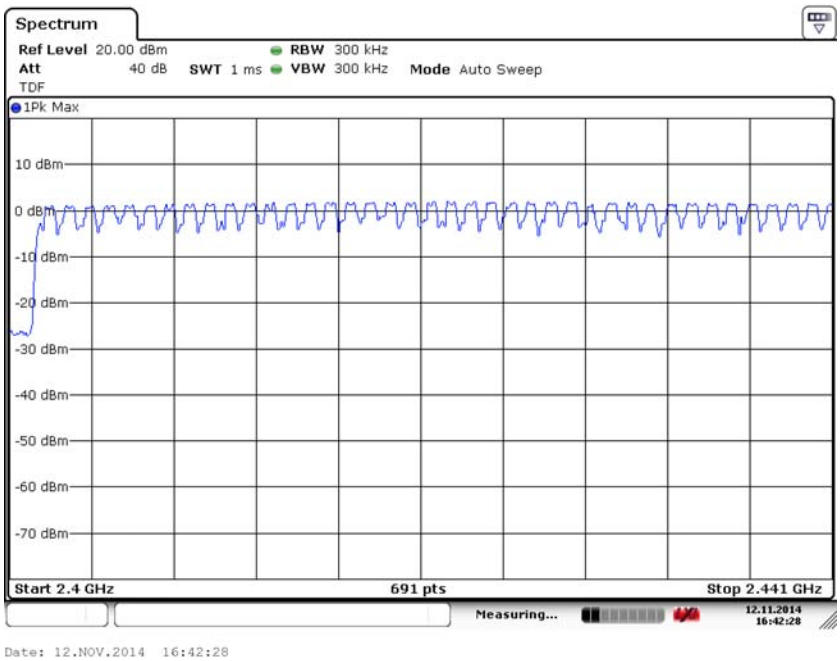


**Fig. 94 Hopping channel ch0~39 (8DPSK, Ch39)**

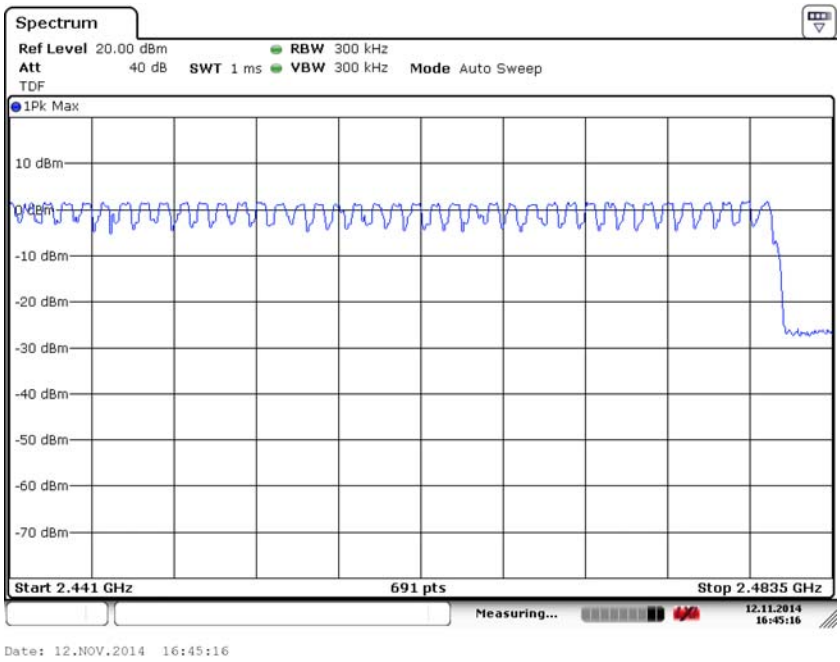


**Fig. 95 Hopping channel ch39~78 (8DPSK, Ch39)**

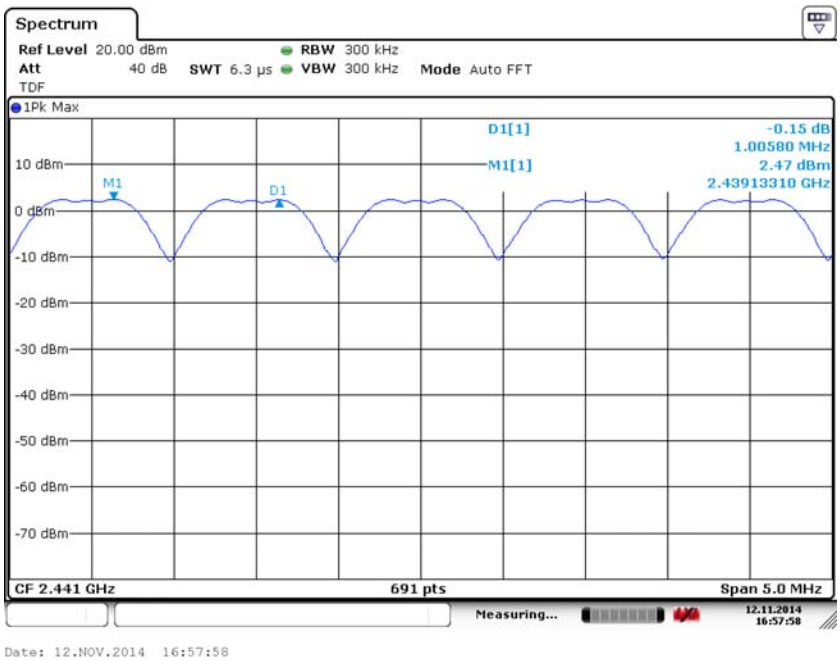


**Fig. 96 Carrier Frequency Separation (GFSK, Ch39)**

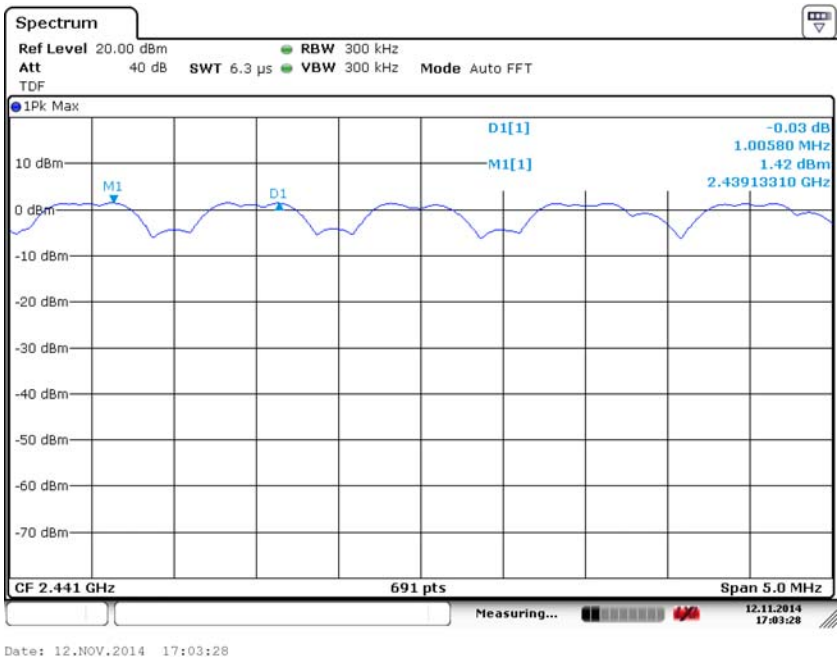


**Fig. 97 Carrier Frequency Separation ( π /4 DQPSK, Ch39)**

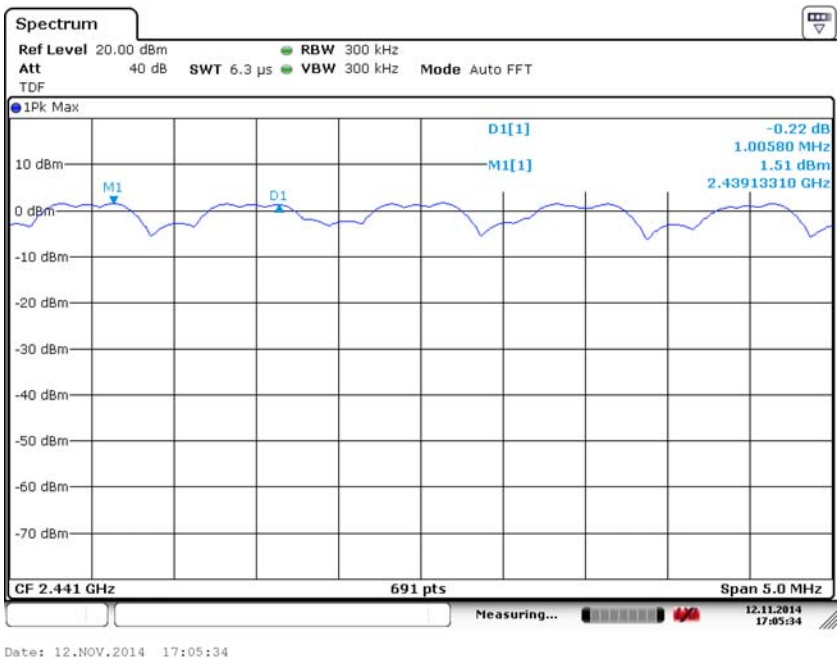


**Fig. 98 Carrier Frequency Separation (8DPSK, Ch39)**

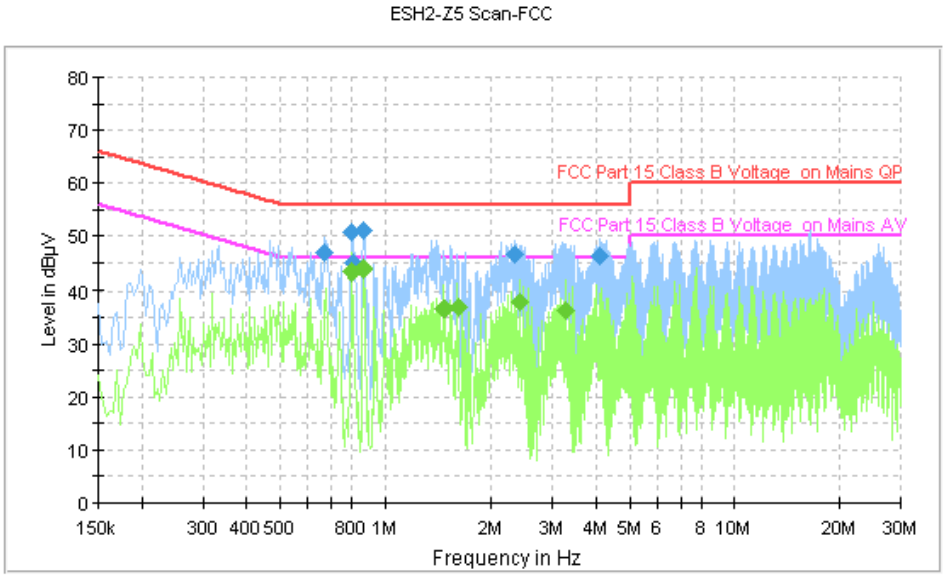


**Fig. 99 AC Power line Conducted Emission (Traffic, AE1)**

MEASUREMENT RESULT: " QuasiPeak "

| Frequency (MHz) | QuasiPeak (dBµV) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|
| 0.670000 | 46.9 | FLO | L1 | 10.0 | 9.1 | 56.0 |
| 0.806000 | 50.8 | FLO | L1 | 10.1 | 5.2 | 56.0 |
| 0.814000 | 44.9 | FLO | L1 | 10.1 | 11.1 | 56.0 |
| 0.870000 | 51.2 | FLO | L1 | 10.1 | 4.8 | 56.0 |
| 2.346000 | 46.7 | FLO | L1 | 10.1 | 9.3 | 56.0 |
| 4.086000 | 46.3 | FLO | L1 | 10.2 | 9.7 | 56.0 |

MEASUREMENT RESULT: " Average "

| Frequency (MHz) | CAverage (dBµV) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|
| 0.806000 | 43.2 | FLO | L1 | 10.1 | 2.8 | 46.0 |
| 0.870000 | 44.1 | FLO | L1 | 10.1 | 1.9 | 46.0 |
| 1.478000 | 36.5 | FLO | L1 | 10.1 | 9.5 | 46.0 |
| 1.610000 | 36.9 | FLO | L1 | 10.1 | 9.1 | 46.0 |
| 2.410000 | 37.8 | FLO | L1 | 10.1 | 8.2 | 46.0 |
| 3.282000 | 36.4 | FLO | L1 | 10.2 | 9.6 | 46.0 |

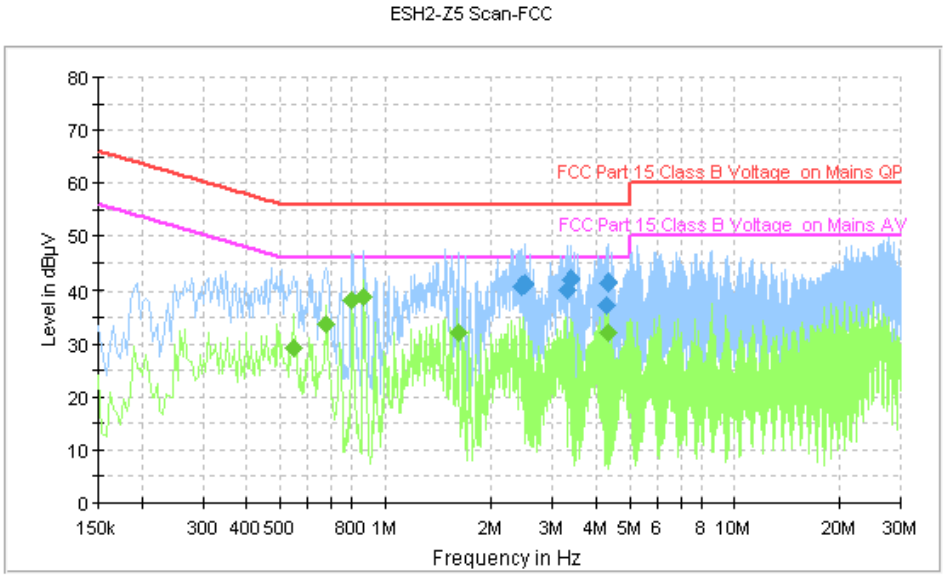


**Fig. 100 AC Power line Conducted Emission (Idle, AE1)**

MEASUREMENT RESULT: " QuasiPeak "

| Frequency (MHz) | QuasiPeak (dBµV) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|
| 2.442000 | 40.8 | FLO | N | 10.2 | 15.2 | 56.0 |
| 2.510000 | 41.1 | FLO | N | 10.2 | 14.9 | 56.0 |
| 3.326000 | 40.0 | FLO | N | 10.2 | 16.0 | 56.0 |
| 3.390000 | 42.2 | FLO | N | 10.2 | 13.8 | 56.0 |
| 4.278000 | 37.3 | FLO | N | 10.2 | 18.7 | 56.0 |
| 4.342000 | 41.5 | FLO | N | 10.2 | 14.5 | 56.0 |

MEASUREMENT RESULT: " Average "

| Frequency (MHz) | CAverage (dBµV) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|
| 0.546000 | 29.3 | FLO | L1 | 10.1 | 16.7 | 46.0 |
| 0.678000 | 33.7 | FLO | L1 | 10.0 | 12.3 | 46.0 |
| 0.806000 | 38.3 | FLO | L1 | 10.1 | 7.7 | 46.0 |
| 0.870000 | 38.7 | FLO | L1 | 10.1 | 7.3 | 46.0 |
| 1.610000 | 32.0 | FLO | L1 | 10.1 | 14.0 | 46.0 |
| 4.342000 | 32.0 | FLO | N | 10.2 | 14.0 | 46.0 |

## ANNEX D: Persons involved in this testing

| Test Name | Tester |
|---|---|
| Antenna Requirement | Wang Shuai, Tang Weisheng |
| Maximum Peak Output Power | Wang Shuai, Tang Weisheng |
| Peak Power Spectral Density | Wang Shuai, Tang Weisheng |
| Occupied 6dB Bandwidth | Wang Shuai, Tang Weisheng |
| Band Edges Compliance | Wang Shuai, Tang Weisheng |
| Transmitter Spurious Emission - Conducted | Wang Shuai, Tang Weisheng |
| Transmitter Spurious Emission - Radiated | Wang Shuai, Tang Weisheng |
| AC Powerline Conducted Emission | Wang Shuai, Tang Weisheng |

## ANNEX E: Accreditation Certificate

China National Accreditation Service for Conformity Assessment

**LABORATORY ACCREDITATION CERTIFICATE**

**(Registration No. CNAS L0570 )**

**China Academy of Telecommunication Research of MIIT**

No.52, Huayuan North Road, Haidian District, Beijing, China

***is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories)*** *for the competence of testing and calibration.*

*The scope of accreditation is detailed in the attached appendices bearing the same registration number as above. The appendices form an integral part of this certificate.*

**Date of Issue: 2014-06-20**

**Date of Expiry: 2017-06-19**

**Date of Initial Accreditation: 1998-07-03**

**Date of Update: 2014-06-20**

Signed on behalf of China National Accreditation Service for Conformity Assessment

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA) and Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA).

No.CNAS AL 2

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*****END OF REPORT*****