



**FCC PART 15C
TEST REPORT
No. I16N01166-BT**

for

Yulong Computer Telecommunication Scientific (Shenzhen) Co.,Ltd.

LTE phone

Model Name: Coolpad E503

With

Hardware Version: P0

Software Version: 6.0.003.P0.161010.3505I-A00

FCC ID: R38YLE503

Issued Date: Dec 1st, 2016

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:

CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT.

No.52, HuayuanNorth Road, Haidian District, Beijing, P. R. China 100191.

[Tel:+86\(0\)10-62304633-2512](tel:+86(0)10-62304633-2512),[Fax:+86\(0\)10-62304633-2504](tel:+86(0)10-62304633-2504)

Email:cttl_terminals@catr.cn, website:www.chinattl.com

REPORT HISTORY

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1. Test Laboratory

1.1. Testing Location

Location: CTTL(South Branch)

Address: TCL International E city No. 1001 Zhongshanyuan Road, Nanshan
District, Shenzhen, Guangdong, China 518000

1.2. Testing Environment

Normal Temperature: 15-35°C

Extreme Temperature: 0/+45°C

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2016-10-19

Testing End Date: 2016-11-30

1.4. Signature

An Ran

(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: Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd.
Address: Coolpad Information Harbor, High-tech Industrial Park (North),
Nanshan District, Shenzhen, P.R.C.
City: Shenzhen
Postal Code: /
Country: China
Telephone: 0755-83301199-83335
Fax: /

2.2. Manufacturer Information

Company Name: Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd.
Address: Coolpad Information Harbor, High-tech Industrial Park (North),
Nanshan District, Shenzhen, P.R.C.
City: Shenzhen
Postal Code: /
Country: China
Telephone: 0755-83301199-83335
Fax: /



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

3.1. About EUT

Description	LTE phone
Model Name	Coolpad E503
Market Name	/
Frequency Band	2402MHz~2480MHz
Type of Modulation	GFSK/ π /4 DQPSK/8DPSK
Number of Channels	79
FCC ID	R38YLE503

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version	Receive Date
EUT1	/	P0	6.0.003.P0.161010.3505I-A00	2016-11-19

*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	CA05-050100U	/

*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: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz	Nov,2015
ANSI C63.10	American National Standard for Testing Unlicensed Wireless Devices	Jun,2013

5. Test Results

5.1. Summary of Test Results

No	Test cases	Sub-clause of Part15C	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)	/
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

Semi-anechoic chamber did not exceed following limits along the EMC testing

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Normalised site attenuation (NSA)	< ±4dB, 3m/10m distance, from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

Shielded room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

Fully-anechoic chamber did not exceed following limits along the EMC testing

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Voltage Standing Wave Ratio (VSWR)	≤6dB, from 1 to 18 GHz, 3m distance

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	2017-03-21	1 year
2	Bluetooth Tester	CBT32	100584	Rohde & Schwarz	2017-01-09	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	2018-05-13	3 years
2	Test Receiver	ESCI	100701	Rohde & Schwarz	2017-08-09	1 year
3	BiLog Antenna	VULB9163	9163 329	Schwarzbeck	2017-01-20	3 years
4	Horn Antenna	3117	00066577	ETS-Lindgren	2019-03-05	3 years
5	Spectrum Analyser	FSP40	100378	Rohde & Schwarz	2016-12-18	1 year
6	Bluetooth Tester	CBT32	100584	Rohde & Schwarz	2017-01-09	1 year
7	Loop Antenna	HLA6120	35779	TESEQ	2019-05-10	3 years
8	Test Receiver	ESCI	100702	Rohde & Schwarz	2017-06-26	1 year
9	LISN	ESH2-Z5	100196	Rohde & Schwarz	2017-01-12	1 year

Anechoic chamber

Fully anechoic chamber by ETS-Lindgren.

ANNEX A: MEASUREMENT RESULTS FOR RECEIVER

A.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 0.55 dBi.
The RF transmitter uses an integrate antenna without connector.**

A.1 Maximum Peak Output Power

Measurement Limit:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)(1)	< 21

Measurement Results:

Mode	Test Result (dBm)					
	2402MHz (Ch0)		2441MHz (Ch39)		2480 MHz (Ch78)	
GFSK	Fig.1	5.24	Fig.2	5.55	Fig.3	5.53
$\pi/4$ DQPSK	Fig.4	4.49	Fig.5	5.05	Fig.6	4.82
8DPSK	Fig.7	4.53	Fig.8	5.08	Fig.9	4.93

Conclusion: Pass

A.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
$\pi/4$ 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
$\pi/4$ 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

A.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
$\pi/4$ 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

A.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(μ V/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	1 GHz ~3 GHz	Fig.50	P	
		3 GHz ~18 GHz	Fig.51	P	
	39	9 kHz ~30 MHz	Fig.52	P	
		30 MHz ~1 GHz	Fig.53	P	
		1 GHz ~3 GHz	Fig.54	P	
		3 GHz ~18 GHz	Fig.55	P	
	78	18 GHz ~26.5 GHz	Fig.56	P	
		1 GHz ~3 GHz	Fig.57	P	
	Power(CH0)	2.38 GHz ~ 2.45 GHz	3 GHz ~18 GHz	Fig.58	P
			2.45 GHz ~ 2.5 GHz	Fig.59	P
$\pi/4$ DQPSK	0	2.38 GHz ~ 2.45 GHz	Fig.60	P	
		2.45 GHz ~ 2.5 GHz	Fig.61	P	
	39	1 GHz ~3 GHz	Fig.62	P	
		3 GHz ~18 GHz	Fig.63	P	
		9 kHz ~30 MHz	Fig.64	P	
		30 MHz ~1 GHz	Fig.65	P	
	78	1 GHz ~3 GHz	Fig.66	P	
		3 GHz ~18 GHz	Fig.67	P	
	Power(CH0)	2.38 GHz ~ 2.45 GHz	18 GHz ~26.5 GHz	Fig.68	P
			1 GHz ~3 GHz	Fig.69	P
Power(CH78)	2.45 GHz ~ 2.5 GHz	3 GHz ~18 GHz	Fig.70	P	
		2.38 GHz ~ 2.45 GHz	Fig.71	P	

8DPSK	0	1 GHz ~3 GHz	Fig.72	P	
		3 GHz ~18 GHz	Fig.73	P	
	39	9 kHz ~30 MHz	Fig.74	P	
		30 MHz ~1 GHz	Fig.75	P	
		1 GHz ~3 GHz	Fig.76	P	
		3 GHz ~18 GHz	Fig.77	P	
	78	18 GHz ~26.5 GHz	Fig.78	P	
		1 GHz ~3 GHz	Fig.79	P	
	Power(CH0)	2.38 GHz ~ 2.45 GHz	3 GHz ~18 GHz	Fig.80	P
			2.45 GHz ~ 2.5 GHz	Fig.81	P
Power(CH78)	2.45 GHz ~ 2.5 GHz	1 GHz ~3 GHz	Fig.82	P	
		3 GHz ~18 GHz	Fig.82	P	

GFSK CH0 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2668.000000	48.35	74.00	25.65	20.6	V
2728.666667	49.17	74.00	24.83	20.9	H
2783.000000	49.11	74.00	24.89	21.2	H
2822.333333	50.50	74.00	23.50	21.6	H
2869.833333	50.27	74.00	23.73	21.8	V
2898.000000	50.36	74.00	23.64	22.0	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2664.833333	39.61	54.00	14.39	20.6	V
2733.500000	40.27	54.00	13.73	20.8	V
2787.500000	41.01	54.00	12.99	20.9	V
2824.000000	40.20	54.00	13.80	21.6	H
2871.833333	40.97	54.00	13.04	21.7	H
2903.833333	40.93	54.00	13.07	22.0	V

GFSK CH0 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16586.000000	49.65	74.00	24.35	15.9	H
16838.500000	50.25	74.00	23.75	16.3	H
17067.500000	49.92	74.00	24.08	16.4	V
17174.500000	49.26	74.00	24.74	16.0	H
17375.000000	49.75	74.00	24.25	16.3	H
17561.500000	49.65	74.00	24.35	16.9	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16577.500000	43.37	54.00	10.63	15.9	V
16838.500000	43.68	54.00	10.32	16.3	H
17065.500000	43.70	54.00	10.30	16.3	H
17284.500000	44.48	54.00	9.52	16.4	H
17380.500000	43.71	54.00	10.29	16.3	V
17571.000000	45.00	54.00	9.00	16.9	H

GFSK CH39 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2744.333333	49.55	74.00	24.45	21.3	H
2796.000000	49.67	74.00	24.33	21.4	H
2847.333333	49.63	74.00	24.37	21.5	H
2884.833333	51.07	74.00	22.93	21.9	V
2910.833333	50.52	74.00	23.48	21.9	H
2936.833333	50.75	74.00	23.25	22.3	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2749.833333	40.81	54.00	13.19	21.3	V
2803.166667	40.85	54.00	13.15	21.5	H
2844.833333	40.75	54.00	13.25	21.4	V
2895.333333	41.85	54.00	12.15	22.1	H
2916.000000	41.50	54.00	12.50	22.0	H
2946.833333	42.37	54.00	11.63	22.5	H

GFSK CH39 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
15980.500000	49.52	74.00	24.48	15.1	H
16387.500000	48.64	74.00	25.36	15.5	H
16786.000000	48.91	74.00	25.09	16.2	H
17142.000000	48.99	74.00	25.01	16.2	H
17310.500000	49.22	74.00	24.78	16.3	H
17660.000000	50.05	74.00	23.95	17.0	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16020.000000	42.61	54.00	11.39	15.3	H
16389.500000	44.05	54.00	9.95	15.6	H
16720.000000	43.36	54.00	10.64	16.2	H
17051.500000	43.68	54.00	10.32	16.1	H
17374.000000	43.85	54.00	10.15	16.4	H
17506.000000	44.34	54.00	9.66	16.6	H

GFSK CH78 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2777.166667	48.63	74.00	25.37	20.8	V
2818.333333	49.69	74.00	24.31	21.2	V
2859.333333	50.17	74.00	23.83	21.4	V
2896.166667	50.60	74.00	23.40	21.9	V
2921.333333	50.12	74.00	23.88	22.1	V
2955.666667	50.29	74.00	23.71	22.6	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2778.833333	40.06	54.00	13.94	20.9	V
2823.666667	40.16	54.00	13.84	21.2	V
2861.166667	40.77	54.00	13.23	21.5	V
2904.666667	41.26	54.00	12.74	22.0	V
2925.000000	41.57	54.00	12.43	22.1	V
2959.000000	42.69	54.00	11.31	22.7	V

GFSK CH78 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
15992.500000	49.51	74.00	24.49	14.9	V
16360.500000	48.56	74.00	25.44	15.3	V
16681.000000	50.17	74.00	23.83	16.0	V
17091.000000	49.64	74.00	24.36	16.1	V
17443.500000	49.62	74.00	24.38	16.7	V
17628.500000	50.84	74.00	23.16	16.6	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
15992.500000	42.98	54.00	11.02	14.9	V
16340.000000	42.54	54.00	11.46	15.5	V
16698.500000	43.96	54.00	10.04	16.3	V
17120.000000	44.78	54.00	9.22	16.3	V
17441.500000	44.32	54.00	9.68	16.7	V
17581.000000	44.09	54.00	9.91	16.9	V

$\pi/4$ DQPSK CH0 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2802.833333	47.19	74.00	26.81	21.3	V
2831.666667	50.96	74.00	23.04	21.6	H
2858.000000	50.05	74.00	23.95	21.3	H
2905.166667	50.21	74.00	23.79	22.0	V
2931.500000	50.03	74.00	23.97	22.4	H
2960.666667	49.69	74.00	24.31	22.7	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2804.000000	39.46	54.00	14.54	21.5	H
2834.000000	41.52	54.00	12.48	21.6	H
2861.000000	39.89	54.00	14.11	21.5	V
2912.666667	40.91	54.00	13.09	22.0	V
2940.500000	41.93	54.00	12.07	22.6	H
2953.500000	42.98	54.00	11.02	22.6	V

$\pi/4$ DQPSK CH0 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16159.500000	48.73	74.00	25.27	15.2	V
16314.500000	48.41	74.00	25.59	15.2	V
16553.500000	48.74	74.00	25.26	16.0	V
16838.500000	49.29	74.00	24.71	16.3	V
17033.500000	49.57	74.00	24.43	16.2	V
17269.000000	50.10	74.00	23.90	16.2	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
15957.500000	43.22	54.00	10.78	15.0	V
16254.000000	42.82	54.00	11.18	15.3	V
16628.000000	43.38	54.00	10.62	16.1	V
16860.000000	42.38	54.00	11.62	16.3	V
17048.000000	43.74	54.00	10.26	16.2	V
17234.000000	43.56	54.00	10.44	16.1	V

$\pi/4$ DQPSK CH39 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2719.500000	48.12	74.00	25.88	20.6	H
2792.666667	49.35	74.00	24.65	21.4	H
2835.500000	49.74	74.00	24.26	21.6	H
2875.833333	50.49	74.00	23.51	21.9	V
2921.500000	50.52	74.00	23.48	22.2	H
2958.666667	50.51	74.00	23.49	22.4	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2724.500000	40.29	54.00	13.71	20.7	H
2800.000000	39.30	54.00	14.70	21.3	V
2839.833333	41.07	54.00	12.93	21.6	H
2885.500000	41.26	54.00	12.74	22.1	H
2929.666667	42.05	54.00	11.95	22.3	H
2955.666667	42.43	54.00	11.57	22.6	V

$\pi/4$ DQPSK CH39 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16494.000000	49.27	74.00	24.73	15.7	V
16724.000000	49.30	74.00	24.70	16.2	V
17042.500000	49.50	74.00	24.50	16.2	V
17371.500000	50.27	74.00	23.73	16.4	V
17513.000000	49.49	74.00	24.51	16.6	V
17802.500000	48.79	74.00	25.21	17.4	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16475.000000	42.96	54.00	11.04	15.9	V
16708.000000	43.39	54.00	10.61	16.3	V
16934.000000	43.04	54.00	10.96	16.2	V
17175.000000	44.06	54.00	9.94	16.1	V
17344.000000	44.67	54.00	9.33	16.4	V
17449.500000	43.64	54.00	10.36	16.5	V

$\pi/4$ DQPSK CH78 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2809.500000	49.44	74.00	24.56	21.6	H
2851.333333	50.94	74.00	23.06	21.4	V
2882.166667	50.78	74.00	23.22	21.9	H
2905.500000	50.36	74.00	23.64	21.9	H
2948.000000	50.43	74.00	23.57	22.5	V
2971.833333	51.20	74.00	22.80	22.5	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2808.000000	40.65	54.00	13.35	21.3	V
2853.000000	40.86	54.00	13.14	21.4	H
2886.000000	41.80	54.00	12.20	22.1	H
2923.166667	42.15	54.00	11.85	22.2	H
2955.333333	42.43	54.00	11.57	22.6	V
2978.333333	41.96	54.00	12.04	22.5	V

$\pi/4$ DQPSK CH78 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
15948.000000	48.75	74.00	25.25	14.9	H
16246.000000	48.29	74.00	25.71	15.2	H
16615.000000	49.13	74.00	24.87	16.1	V
17004.500000	48.49	74.00	25.51	16.5	V
17266.000000	49.26	74.00	24.74	16.2	V
17535.000000	49.35	74.00	24.65	16.4	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
15925.500000	42.85	54.00	11.15	15.0	V
16246.000000	42.53	54.00	11.47	15.2	H
16647.000000	43.89	54.00	10.11	16.2	V
17010.500000	43.11	54.00	10.89	16.5	V
17236.000000	43.96	54.00	10.04	16.2	H
17535.000000	44.04	54.00	9.96	16.4	H

8DPSK CH0 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2739.833333	49.05	74.00	24.95	21.0	V
2781.666667	49.88	74.00	24.12	21.1	H
2844.333333	50.94	74.00	23.06	21.5	H
2872.000000	50.67	74.00	23.33	21.7	H
2898.666667	51.23	74.00	22.77	22.0	H
2935.833333	50.53	74.00	23.47	22.5	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2742.500000	40.82	54.00	13.18	21.1	V
2790.166667	41.27	54.00	12.73	21.4	H
2845.666667	40.97	54.00	13.03	21.5	H
2872.000000	41.24	54.00	12.76	21.7	H
2908.833333	41.53	54.00	12.47	22.0	V
2945.833333	42.58	54.00	11.42	22.5	H

8DPSK CH0 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16881.000000	48.95	74.00	25.05	16.2	V
17002.000000	49.98	74.00	24.02	16.5	V
17166.000000	49.57	74.00	24.43	16.2	V
17433.000000	50.98	74.00	23.02	16.7	V
17592.000000	50.18	74.00	23.82	16.7	V
17795.500000	50.59	74.00	23.41	17.4	V

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16892.500000	42.42	54.00	11.58	16.3	V
17087.500000	43.12	54.00	10.88	16.1	V
17302.500000	43.33	54.00	10.67	16.2	V
17460.500000	43.63	54.00	10.37	16.5	V
17595.000000	43.58	54.00	10.42	16.7	V
17795.500000	43.59	54.00	10.41	17.4	V

8DPSK CH39 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2853.166667	50.02	74.00	23.98	21.4	H
2888.166667	50.41	74.00	23.59	21.9	V
2904.500000	51.35	74.00	22.65	22.0	V
2942.000000	50.53	74.00	23.47	22.3	V
2962.666667	51.39	74.00	22.61	22.4	H
2988.000000	49.19	74.00	24.81	22.2	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2855.000000	39.35	54.00	14.65	21.4	V
2888.666667	41.88	54.00	12.12	21.9	V
2908.000000	41.70	54.00	12.30	22.0	V
2938.166667	42.65	54.00	11.35	22.5	H
2956.333333	41.94	54.00	12.06	22.7	V
2984.666667	41.97	54.00	12.03	22.5	V

8DPSK CH39 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
15981.000000	49.75	74.00	24.25	15.1	H
16263.500000	49.98	74.00	24.02	15.3	H
16707.000000	48.66	74.00	25.34	16.4	H
17070.500000	49.76	74.00	24.24	16.3	H
17449.000000	49.96	74.00	24.04	16.5	H
17642.500000	50.23	74.00	23.77	16.8	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
15981.000000	43.51	54.00	10.49	15.1	H
16264.000000	42.85	54.00	11.15	15.3	H
16529.000000	43.22	54.00	10.78	15.9	H
16973.000000	43.20	54.00	10.80	16.3	H
17296.500000	43.64	54.00	10.36	16.3	H
17546.000000	43.73	54.00	10.27	16.5	H

8DPSK CH78 (1-3GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2616.500000	49.46	74.00	24.54	20.9	H
2685.000000	49.67	74.00	24.33	20.7	H
2769.666667	49.67	74.00	24.33	20.8	V
2822.500000	50.68	74.00	23.32	21.2	V
2868.500000	49.95	74.00	24.05	21.6	H
2918.666667	50.18	74.00	23.82	22.1	H

Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
2625.166667	40.62	54.00	13.38	20.5	H
2687.833333	40.67	54.00	13.33	20.4	V
2782.833333	41.71	54.00	12.29	21.2	H
2831.666667	41.75	54.00	12.25	21.6	H
2873.333333	41.81	54.00	12.19	21.7	H
2914.500000	40.43	54.00	13.57	22.0	V

8DPSK CH78 (3-18GHz)

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16735.500000	49.57	74.00	24.43	16.1	H
16901.000000	48.96	74.00	25.04	16.2	V
17123.000000	49.59	74.00	24.41	16.3	V
17254.500000	50.04	74.00	23.96	16.1	H
17465.500000	50.22	74.00	23.78	16.4	H
17652.000000	50.40	74.00	23.60	17.0	V



Frequency (MHz)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Corr. (dB)	Pol
16867.000000	43.40	54.00	10.60	16.2	H
17056.000000	43.91	54.00	10.09	16.3	V
17259.500000	43.26	54.00	10.74	16.1	H
17427.000000	44.49	54.00	9.51	16.5	H
17591.500000	43.55	54.00	10.45	16.8	V
17799.000000	45.02	54.00	8.98	17.4	V

See ANNEX C for test graphs.

Conclusion: Pass

A.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
		Fig.	Value	
GFSK	0	Fig.83	1.122	/
	39	Fig.84	1.114	
	78	Fig.85	1.122	
$\pi/4$ DQPSK	0	Fig.86	1.295	/
	39	Fig.87	1.303	
	78	Fig.88	1.295	
8DPSK	0	Fig.89	1.317	/
	39	Fig.90	1.317	
	78	Fig.91	1.324	

See ANNEX C for test graphs.

Conclusion: PASS

A.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.92	219.8	P
			Fig.93		
$\pi/4$ DQPSK	39	2-DH5	Fig.94	187.5	P
			Fig.95		
8DPSK	39	3-DH5	Fig.96	208.7	P
			Fig.97		

See ANNEX C for test graphs.

Conclusion: Pass

A.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.98	Fig.99	79	P
$\pi/4$ DQPSK	39	2-DH5	Fig.100	Fig.101	79	P
8DPSK	39	3-DH5	Fig.102	Fig.103	79	P

See ANNEX C for test graphs.

Conclusion: Pass

A.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.104	1.006	P
$\pi/4$ DQPSK	39	2-DH5	Fig.105	1.006	P
8DPSK	39	3-DH5	Fig.106	1.006	P

See ANNEX C for test graphs.

Conclusion: Pass

A.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 (dB μ V)	Result (dB μ V)	Conclusion
		Traffic	
0.15 to 0.5	66 to 56	Fig.107	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 (dB μ V)	Result (dB μ V)	Conclusion
		Traffic	
0.15 to 0.5	56 to 46	Fig.107	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.

BT (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)	Conclusion
		Idle	
0.15 to 0.5	66 to 56	Fig.108	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 (dB μ V)	Result (dB μ V)	Conclusion
		Idle	
0.15 to 0.5	56 to 46	Fig.108	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.

Test Condition:

Voltage (V)	Frequency (Hz)
240	60

Measurement Result and limit:

BT (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)	Conclusion
		Traffic	
0.15 to 0.5	66 to 56	Fig.109	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 (dB μ V)	Result (dB μ V)	Conclusion
		Traffic	
0.15 to 0.5	56 to 46	Fig.109	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.

BT (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)	Conclusion
		Idle	
0.15 to 0.5	66 to 56	Fig.110	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 (dB μ V)	Result (dB μ V)	Conclusion
		Idle	
0.15 to 0.5	56 to 46	Fig.110	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 B: TEST FIGURE LIST

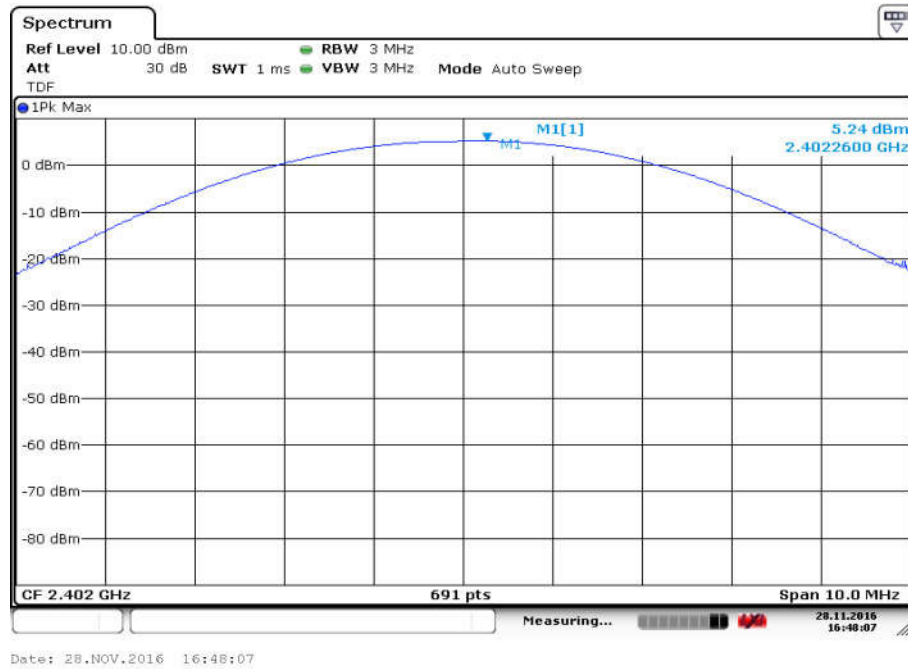


Fig. 1 Maximum Peak Output Power(GFSK, Ch 0)



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

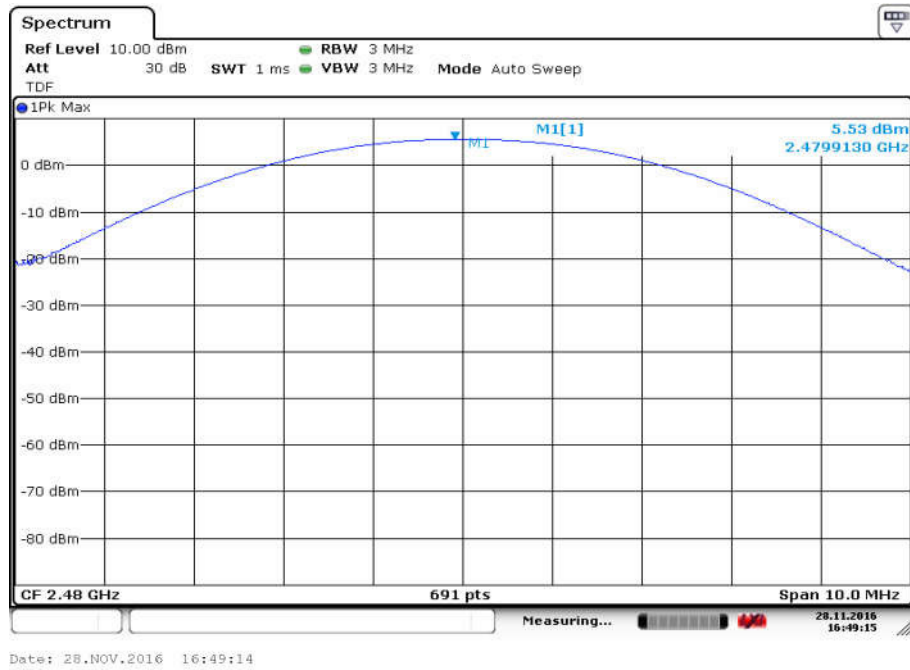


Fig. 3 Maximum Peak Output Power(GFSK, Ch 78)

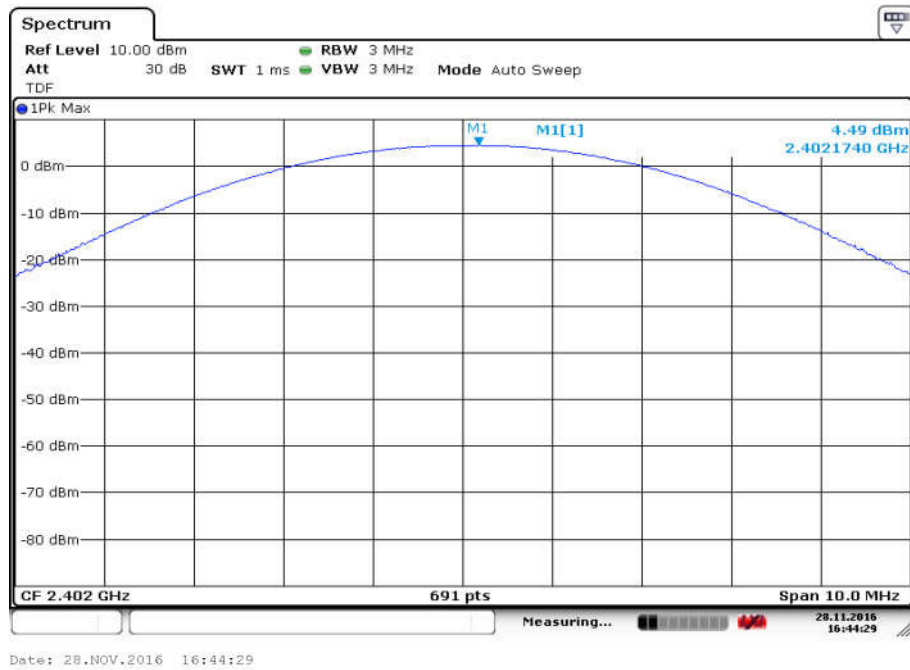
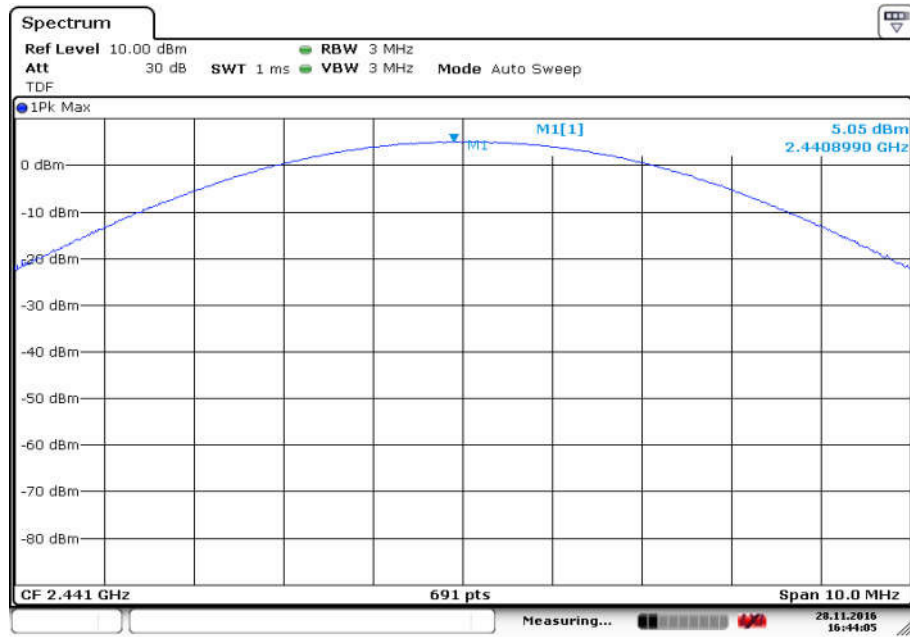
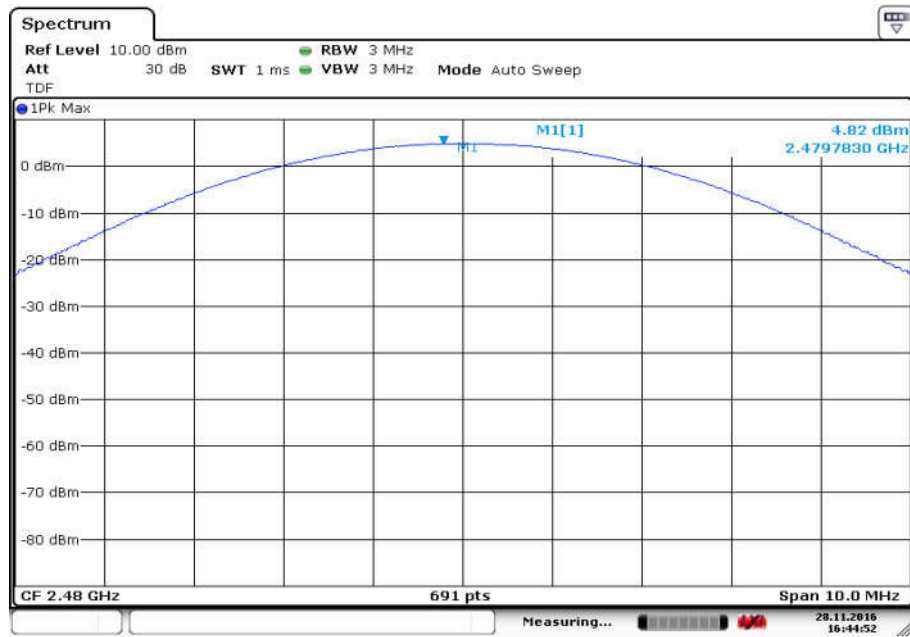


Fig. 4 Maximum Peak Output Power($\pi/4$ DQPSK, Ch 0)



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Fig. 5 Maximum Peak Output Power($\pi/4$ DQPSK, Ch 39)



Date: 28.NOV.2016 16:44:52

Fig. 6 Maximum Peak Output Power($\pi/4$ DQPSK, Ch 78)

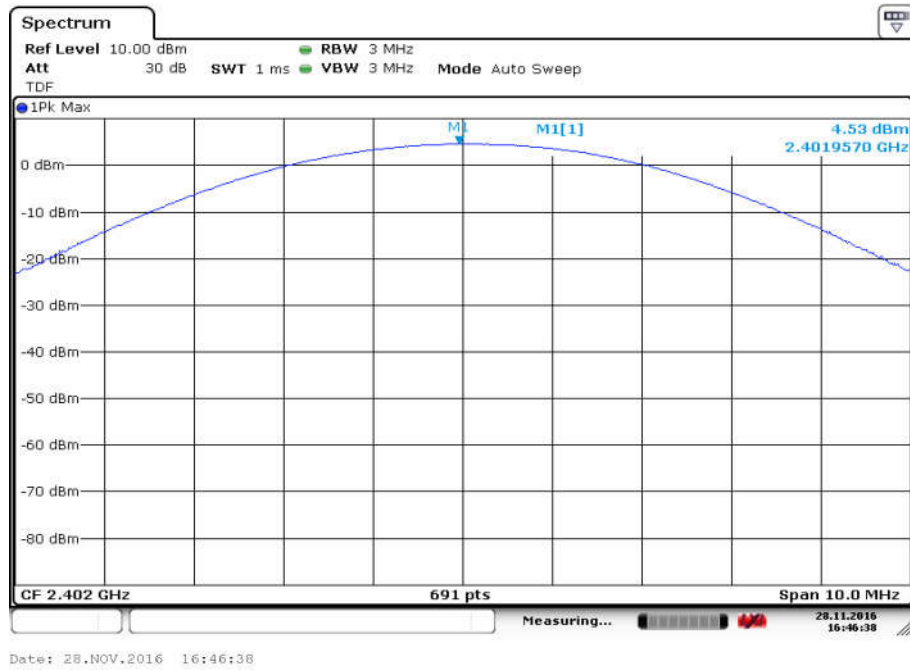


Fig. 7 Maximum Peak Output Power(8DPSK, Ch 0)

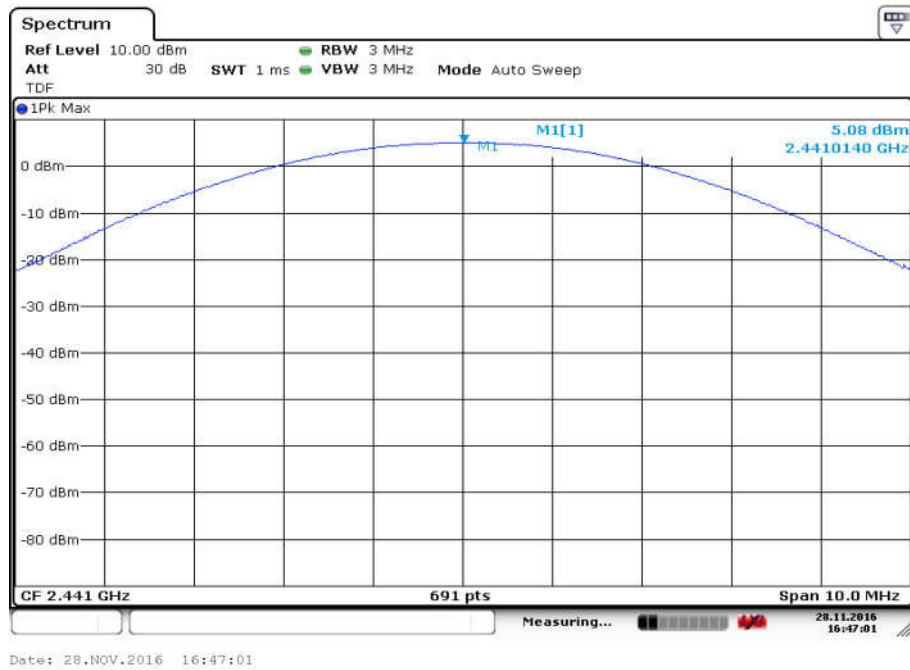


Fig. 8 Maximum Peak Output Power(8DPSK, Ch 39)

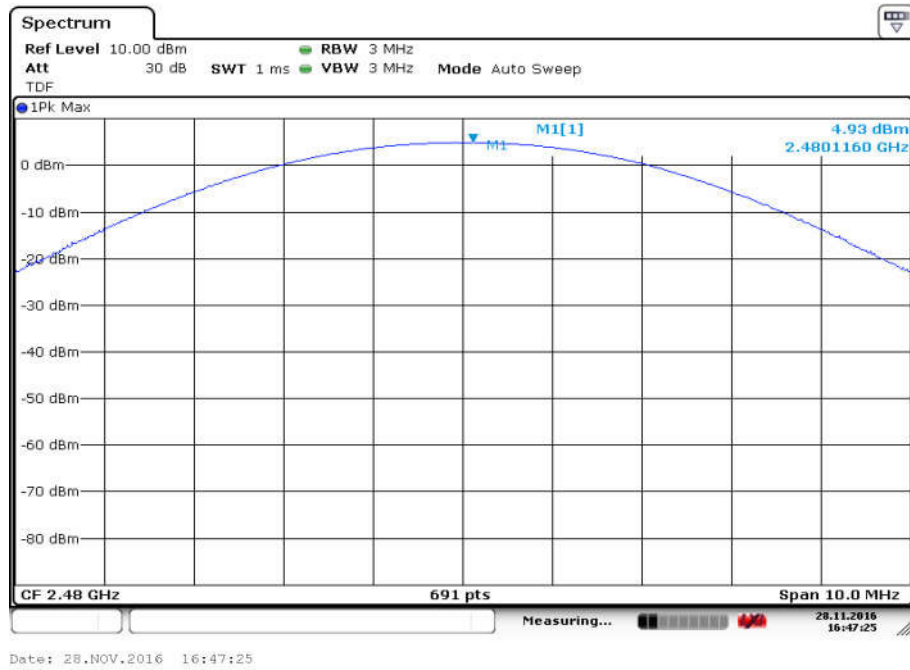


Fig. 9 Maximum Peak Output Power(8DPSK, Ch 78)

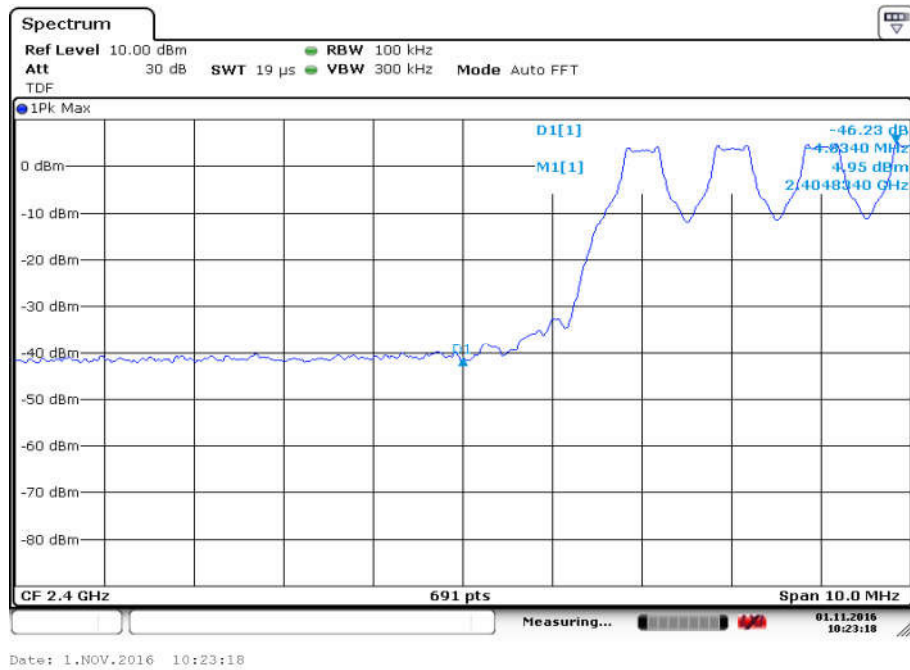


Fig. 10 Band Edges (GFSK, Ch 0, Hopping ON)

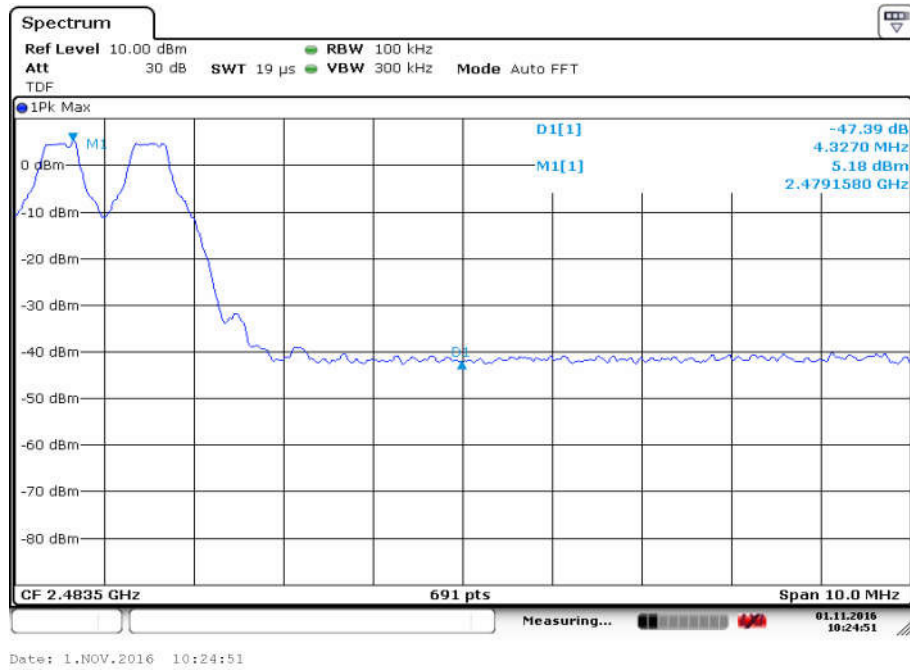


Fig. 11 Band Edges (GFSK, Ch 78, Hopping ON)

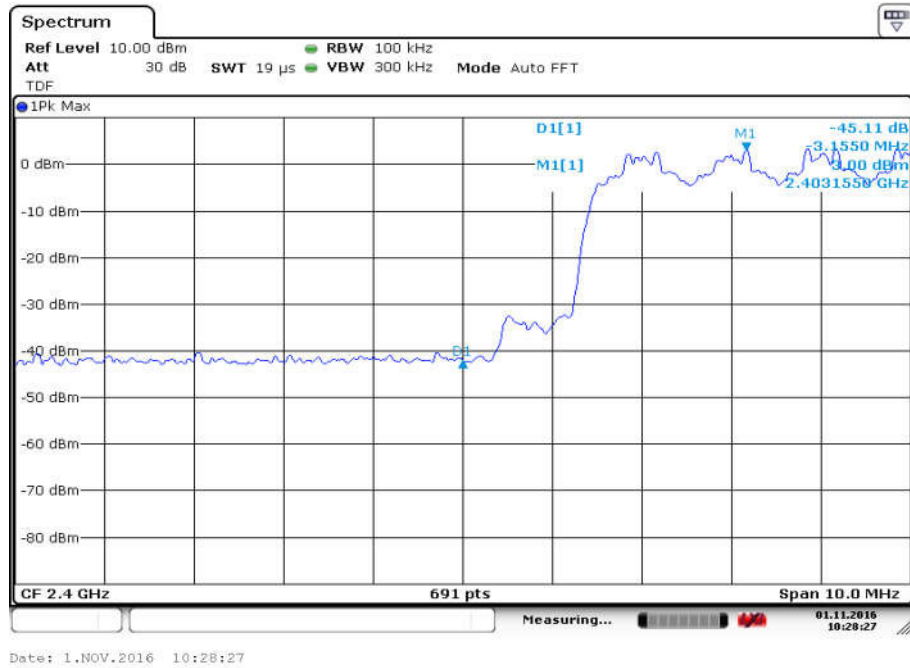
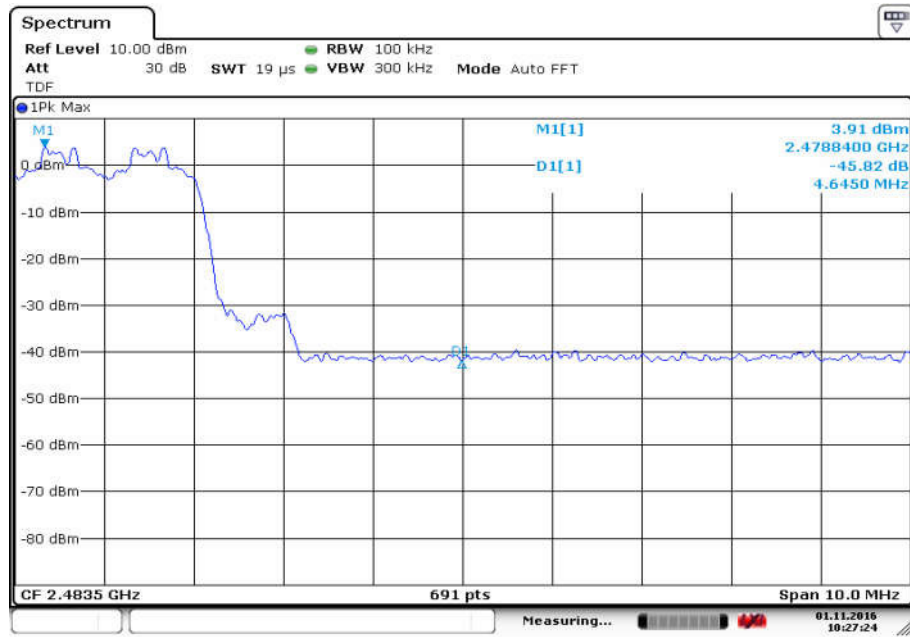
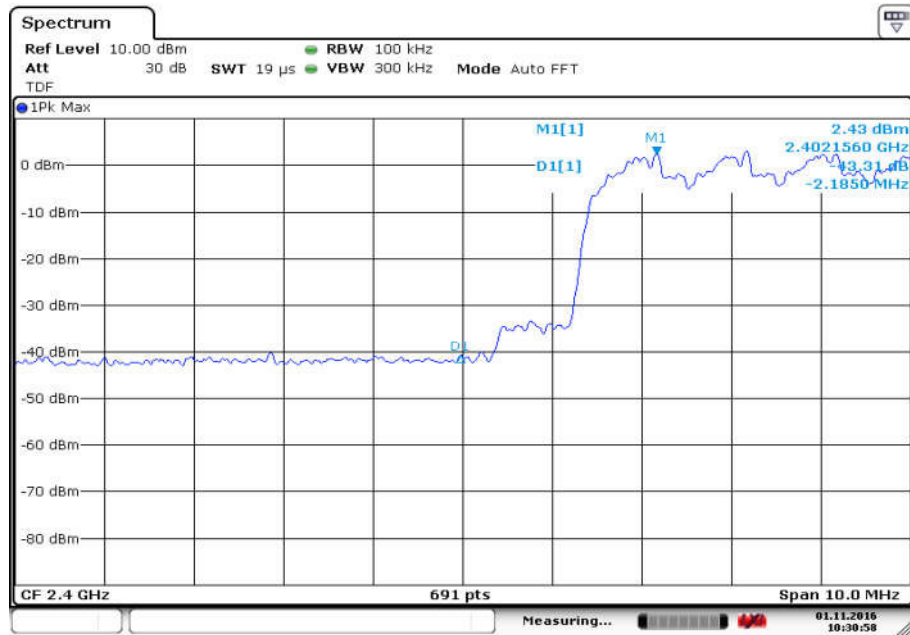


Fig. 12 Band Edges ($\pi/4$ DQPSK, Ch 0, Hopping ON)



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Fig. 13 Band Edges ($\pi/4$ DQPSK, Ch 78, Hopping ON)



Date: 1.NOV.2016 10:30:58

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

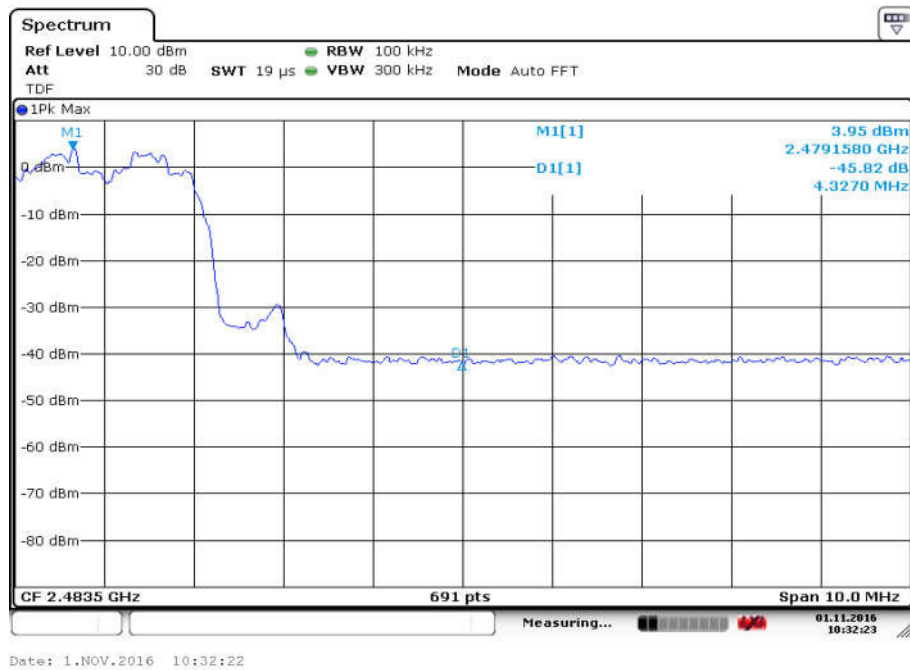


Fig. 15 Band Edges (8DPSK, Ch 78, Hopping ON)

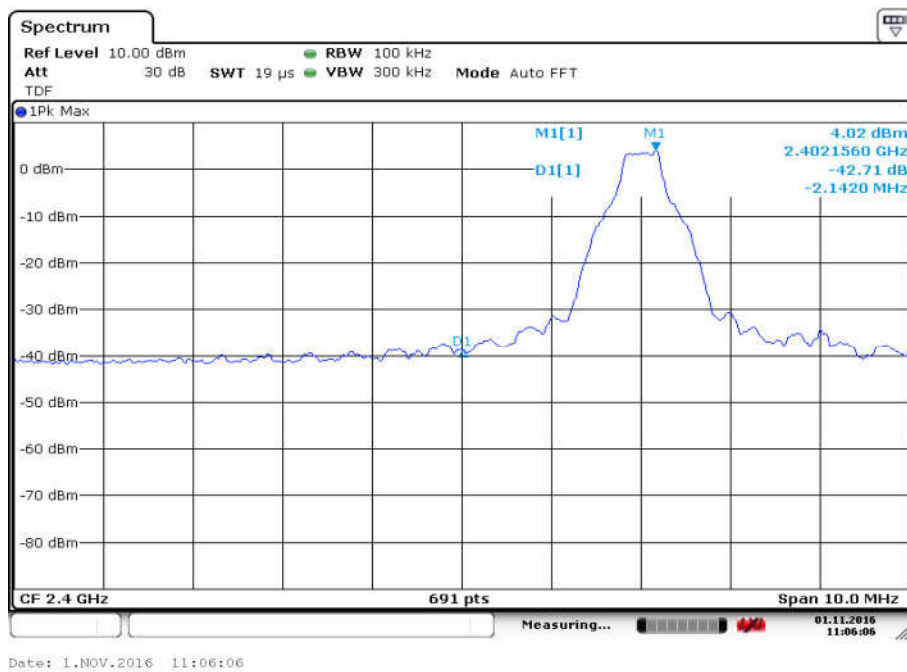
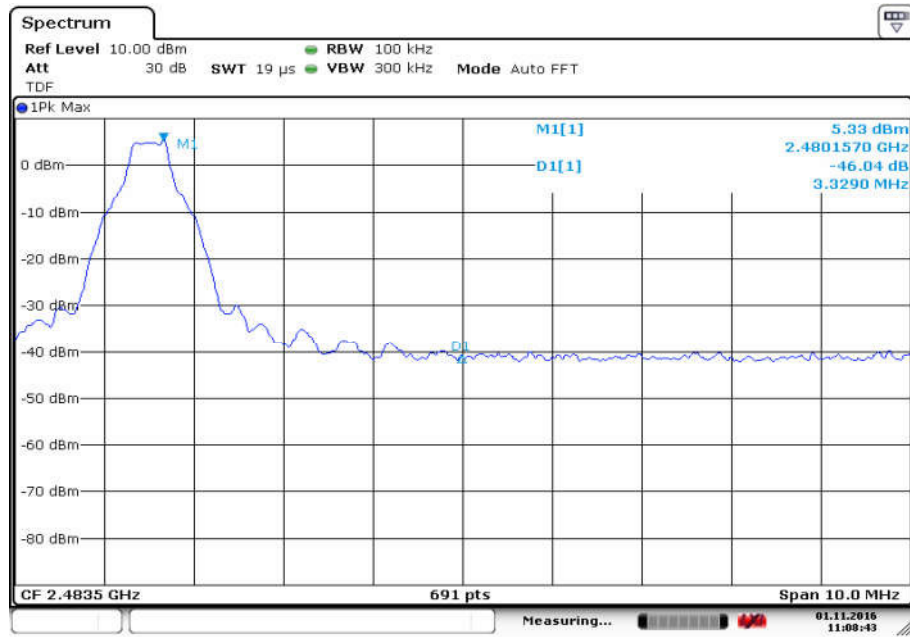
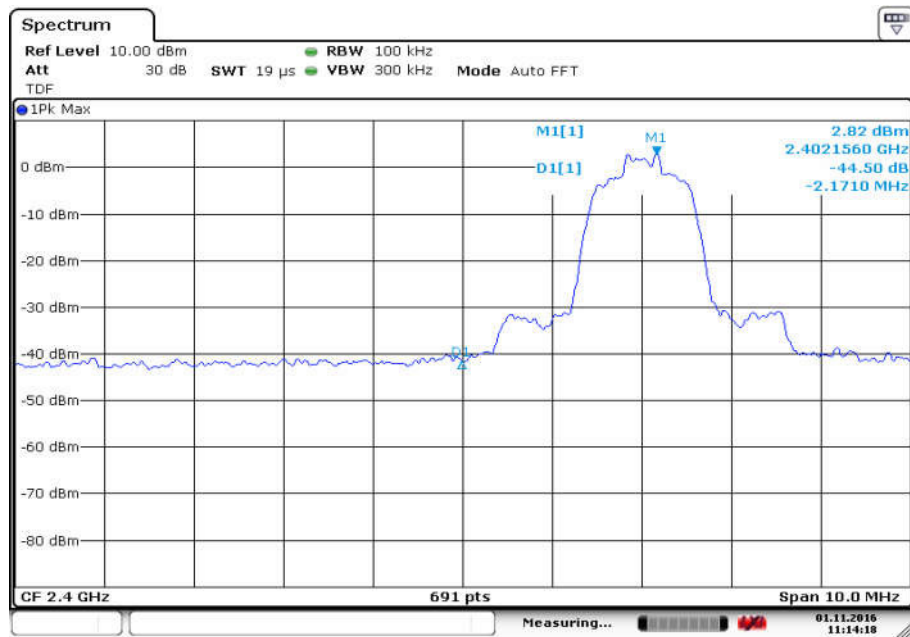


Fig. 16 Band Edges (GFSK, Ch 0, Hopping OFF)



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



Date: 1.NOV.2016 11:14:18

Fig. 18 Band Edges ($\pi/4$ DQPSK, Ch 0, Hopping OFF)

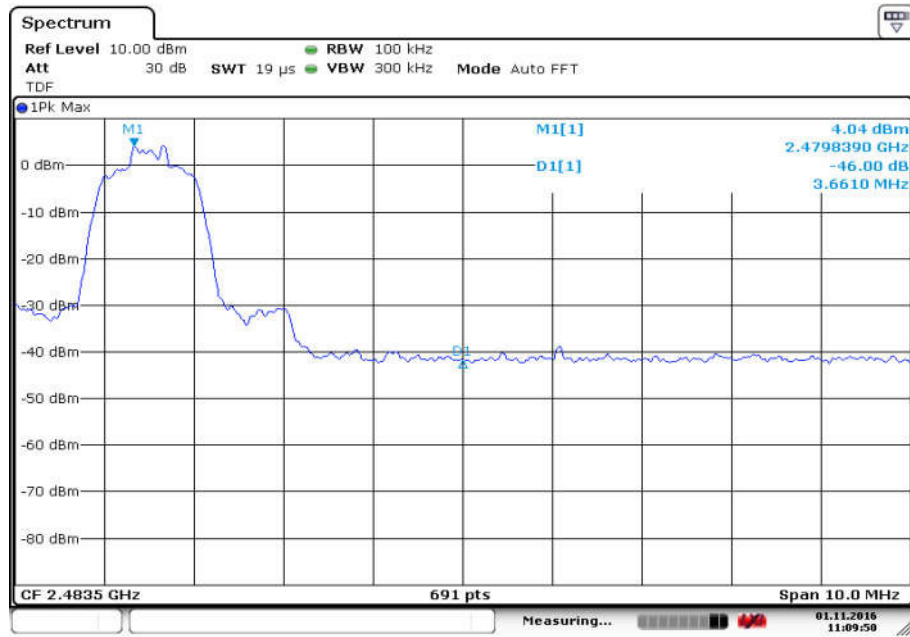


Fig. 19 Band Edges ($\pi/4$ DQPSK, Ch 78, Hopping OFF)

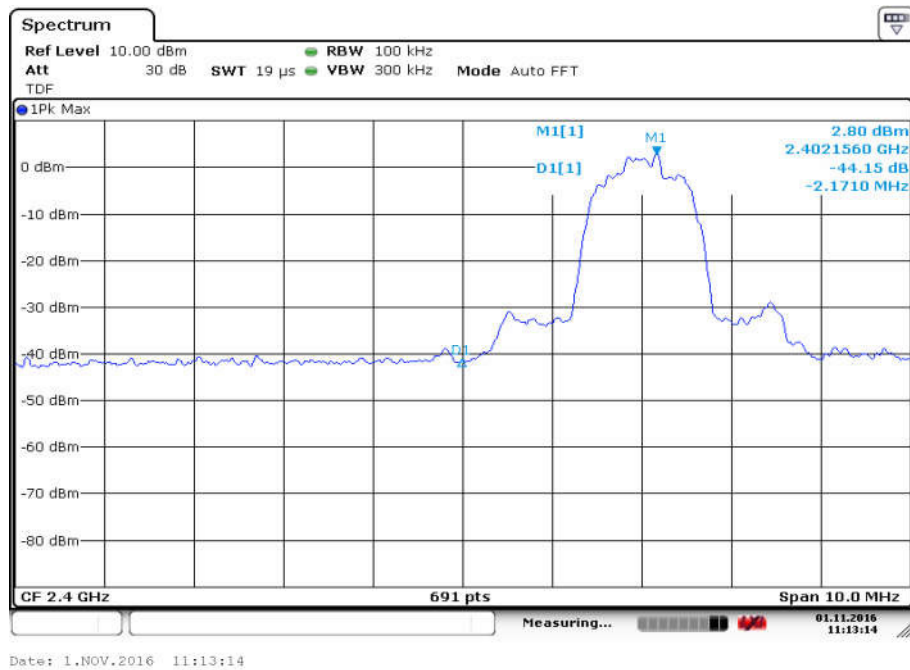
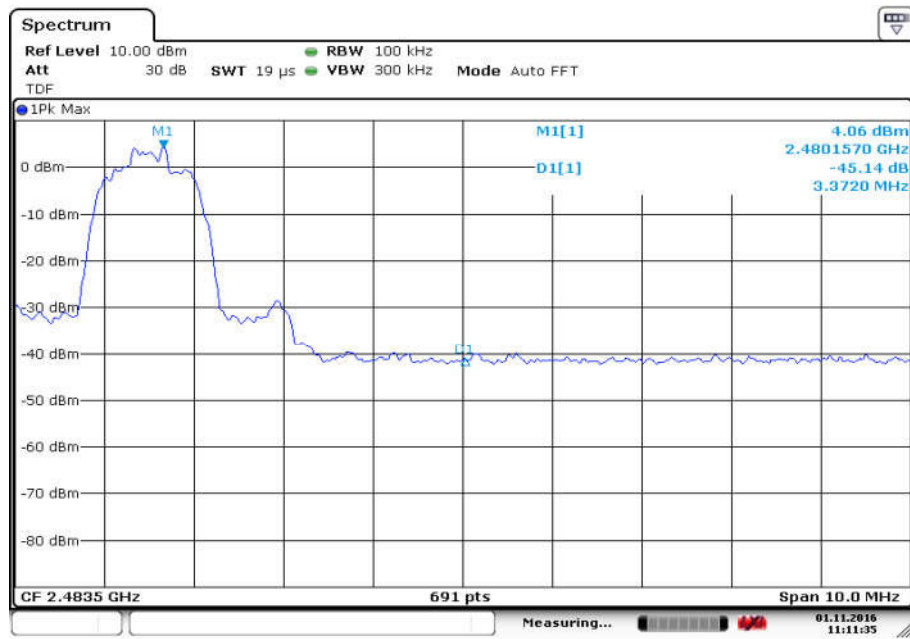


Fig. 20 Band Edges (8DPSK, Ch 0, Hopping OFF)



Date: 1.NOV.2016 11:11:34

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



Date: 30.NOV.2016 10:10:10

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

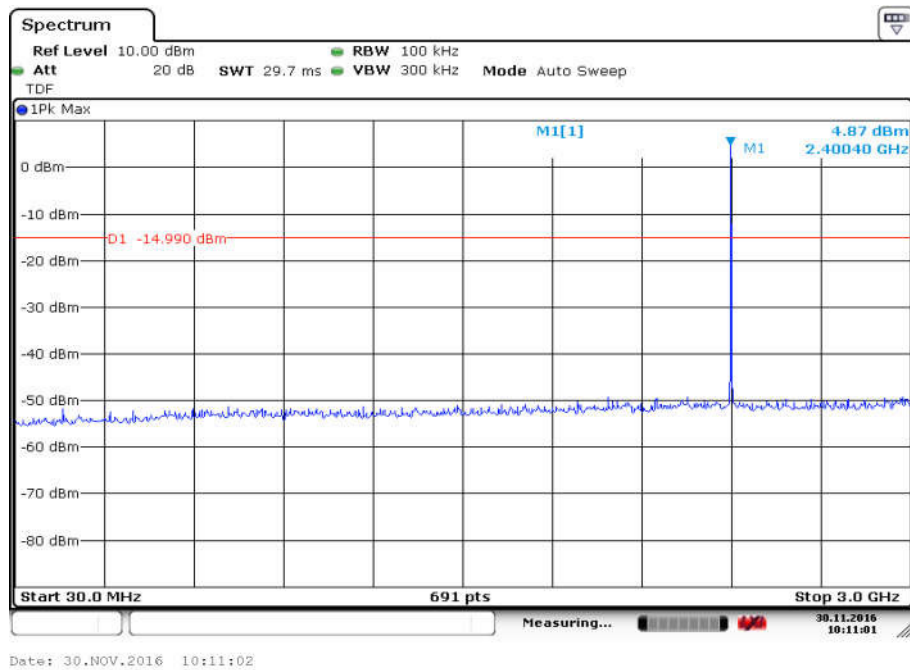


Fig. 23 Conducted Spurious Emission (GFSK, Ch0, 30 MHz-3 GHz)

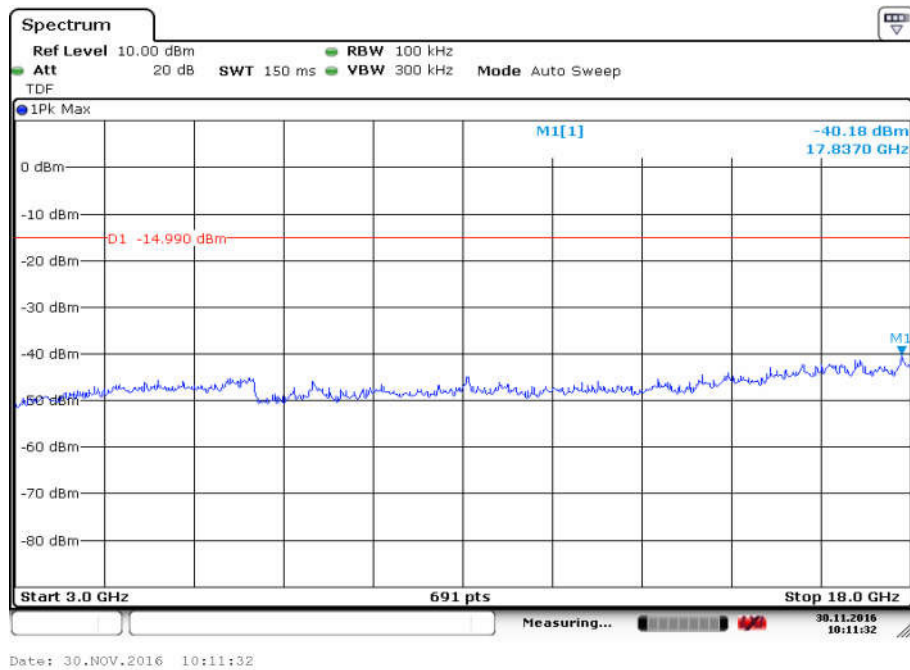


Fig. 24 Conducted Spurious Emission (GFSK, Ch0, 3GHz-18 GHz)

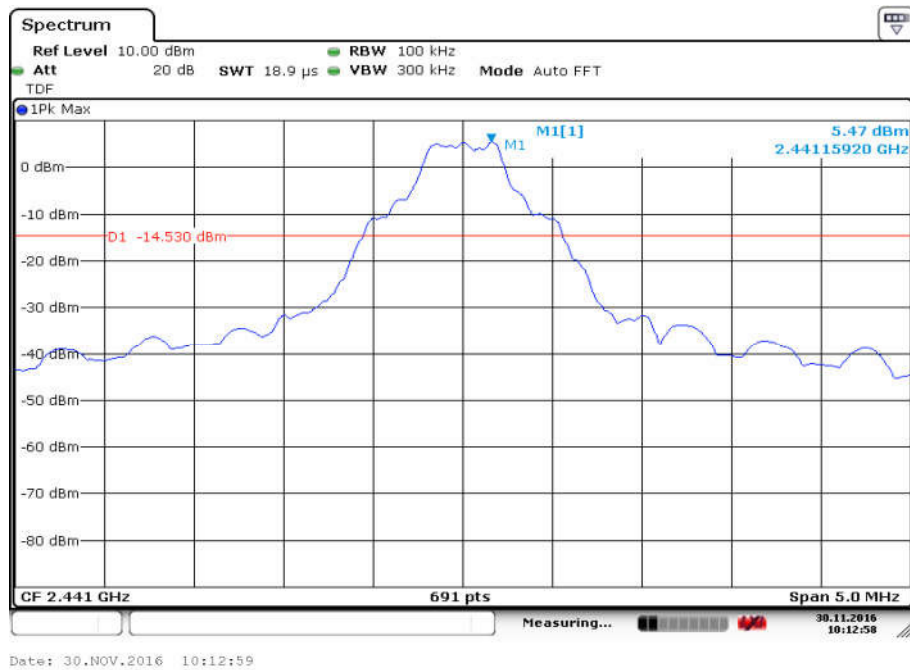


Fig. 25 Conducted Spurious Emission (GFSK, Ch39, 2.441GHz)

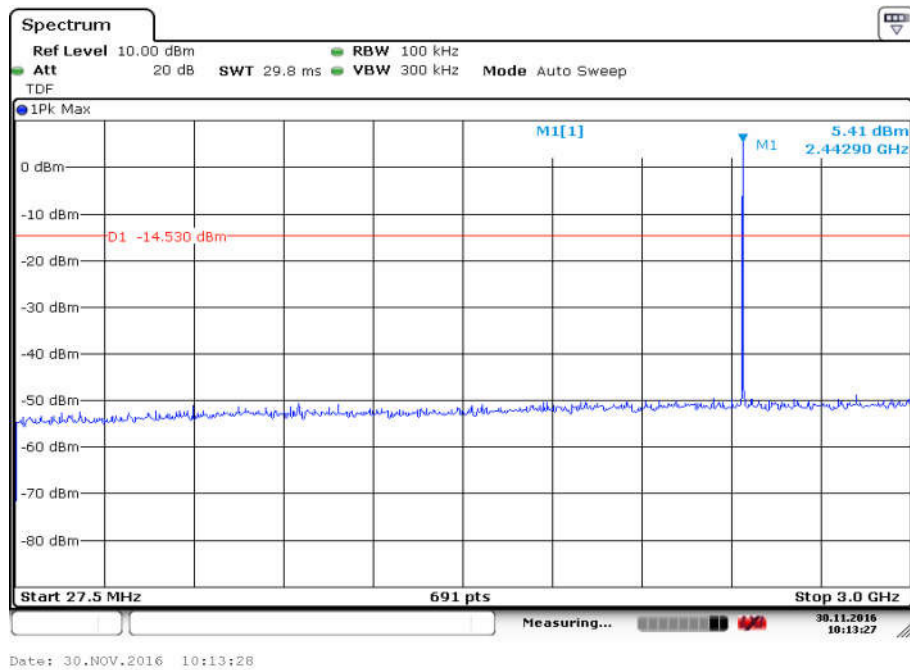


Fig. 26 Conducted Spurious Emission (GFSK, Ch39, 30 MHz-3 GHz)

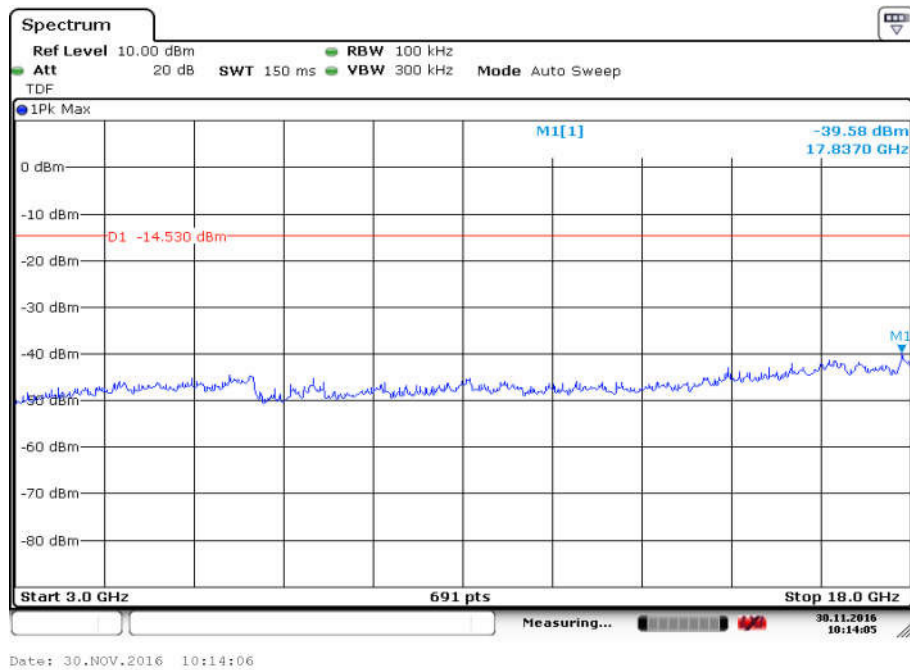


Fig. 27 Conducted Spurious Emission (GFSK, Ch39, 3GHz-18 GHz)

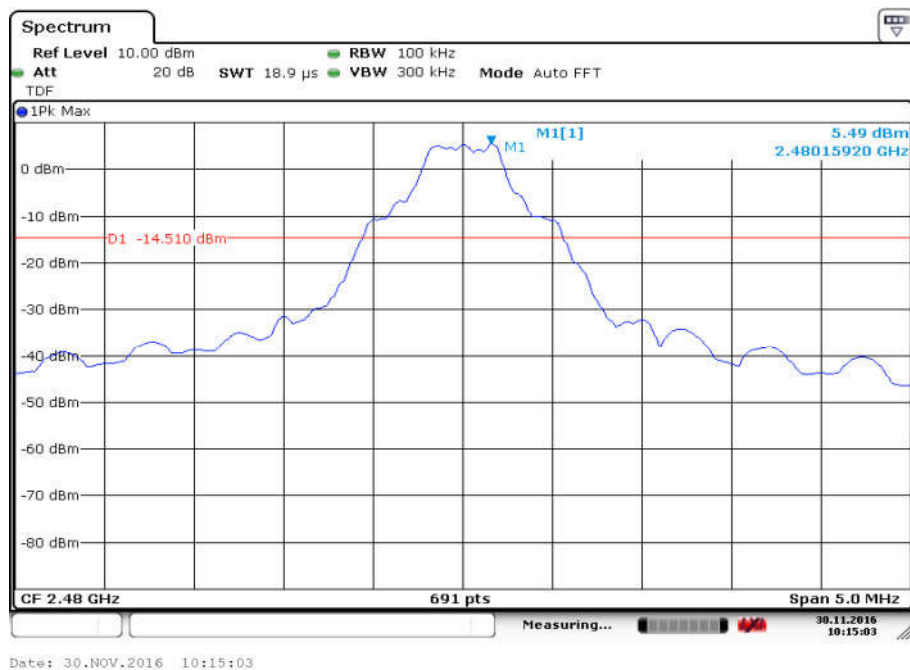


Fig. 28 Conducted Spurious Emission (GFSK, Ch78, 2.480GHz)

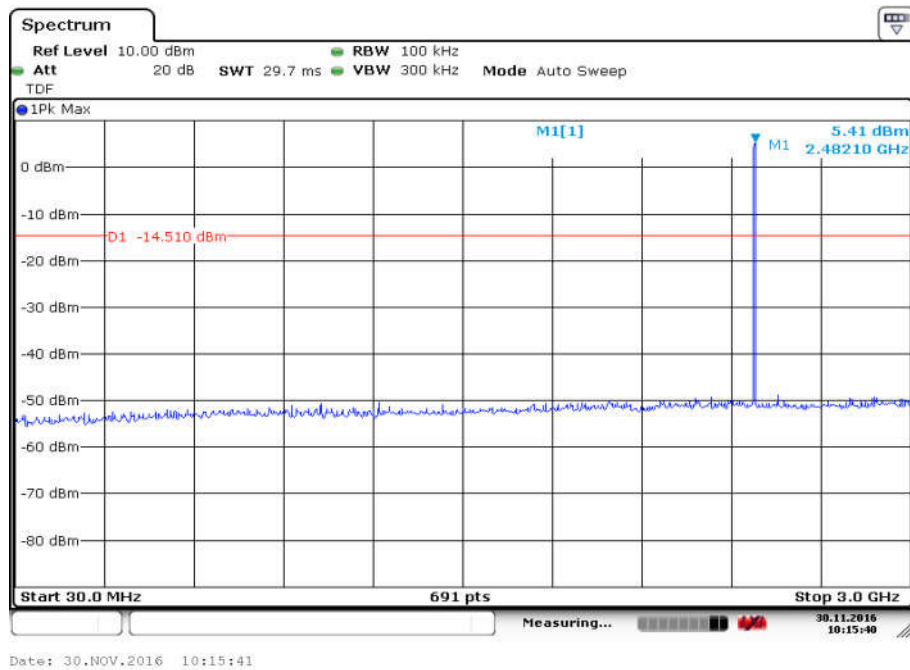


Fig. 29 Conducted Spurious Emission (GFSK, Ch78, 30 MHz-3 GHz)

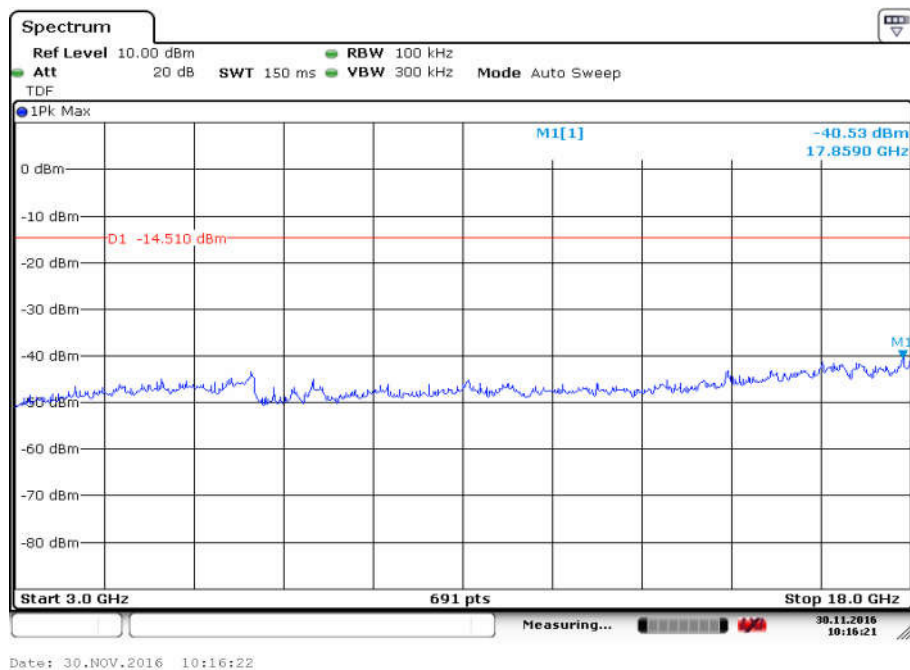


Fig. 30 Conducted Spurious Emission (GFSK, Ch78, 3GHz-18 GHz)

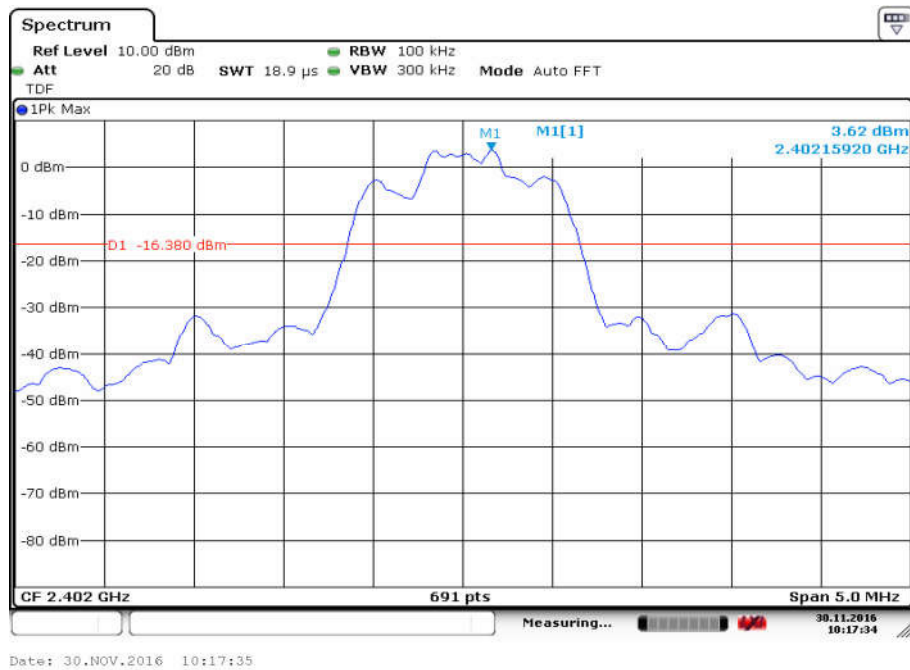


Fig. 31 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch0, 2.402GHz)

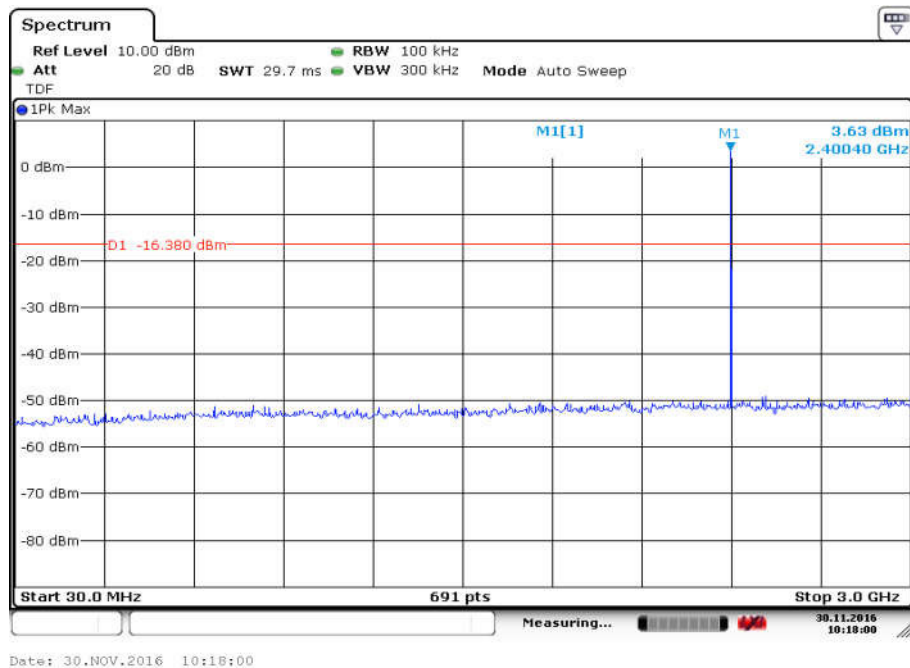


Fig. 32 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch0, 30 MHz-3 GHz)

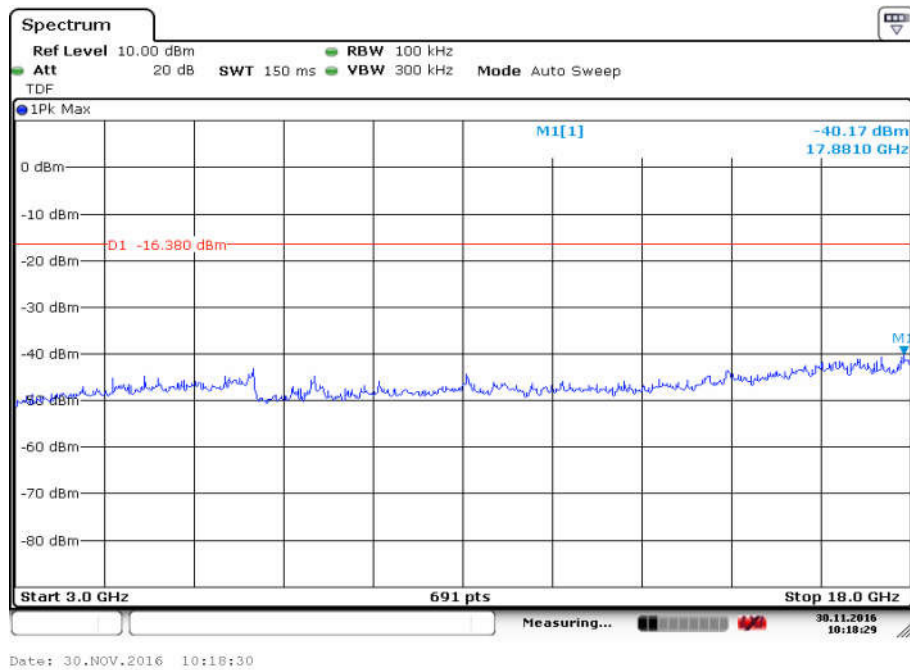


Fig. 33 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch0, 3GHz-18 GHz)

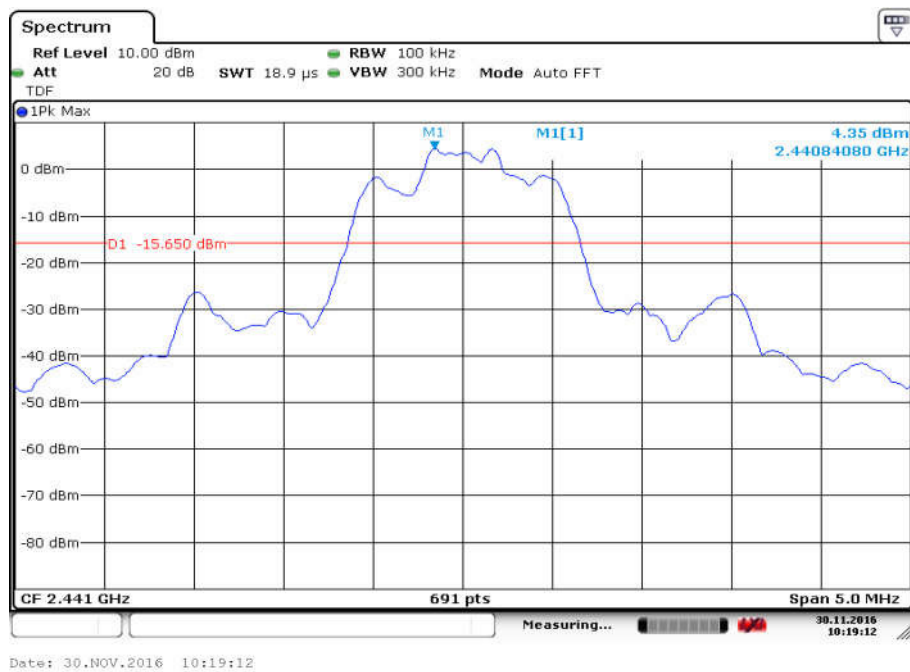


Fig. 34 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch39, 2.441GHz)

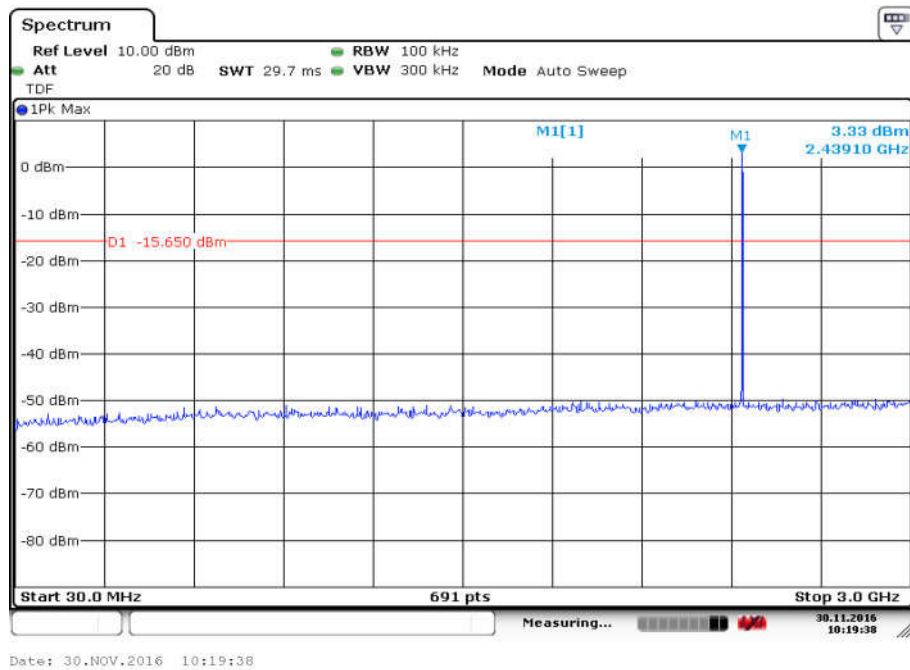


Fig. 35 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch39, 30 MHz-3 GHz)

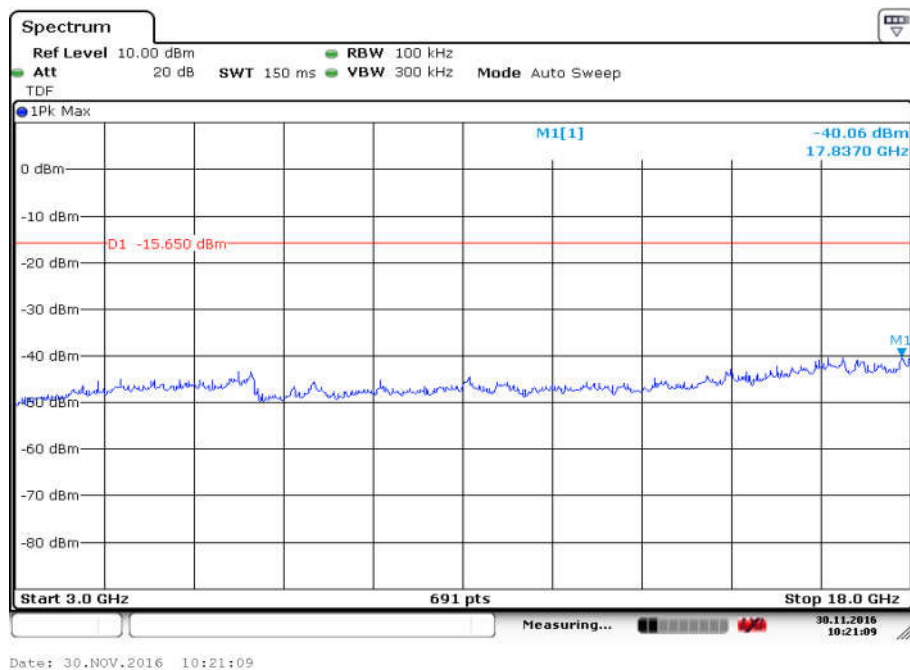


Fig. 36 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch39, 3GHz-18 GHz)

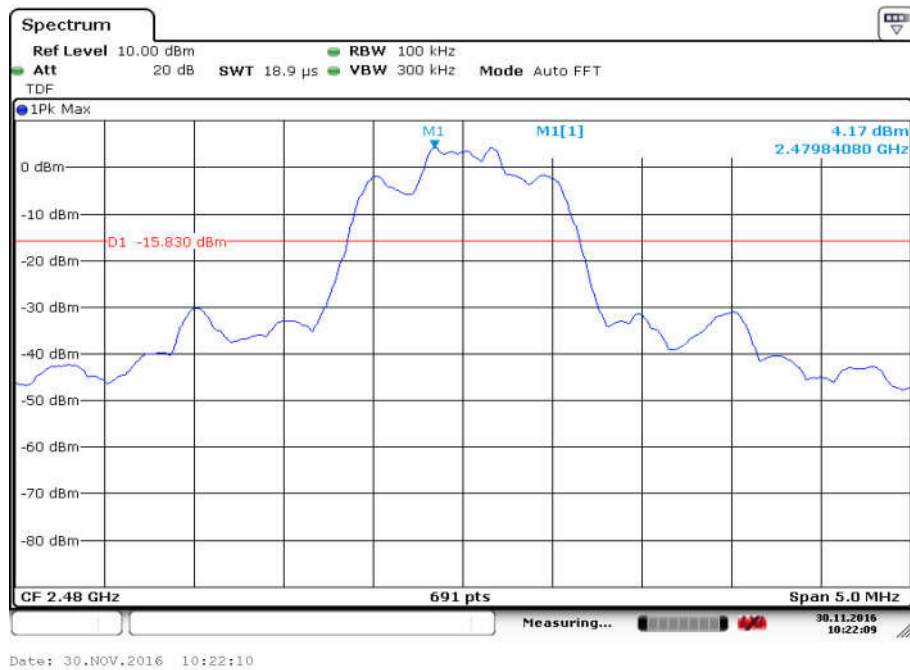


Fig. 37 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch78, 2.480GHz)

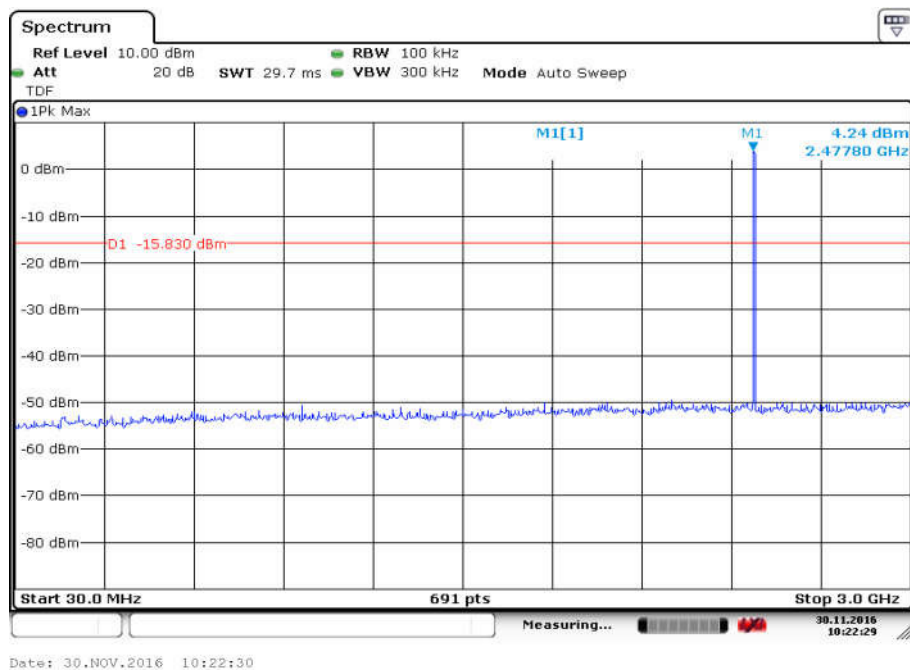


Fig. 38 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch78, 30 MHz-3 GHz)

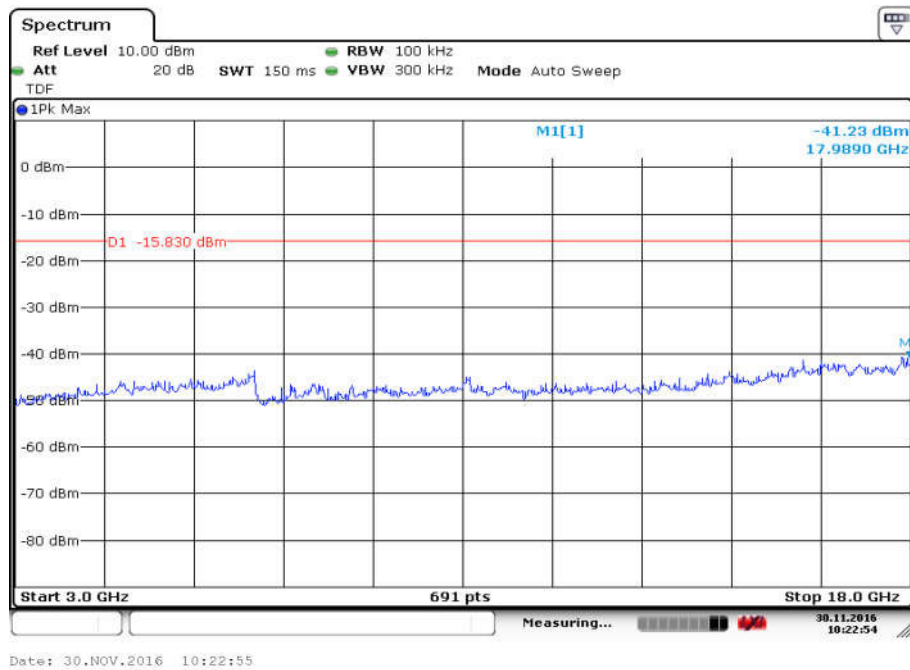


Fig. 39 Conducted Spurious Emission ($\pi/4$ DQPSK, Ch78, 3GHz-18 GHz)

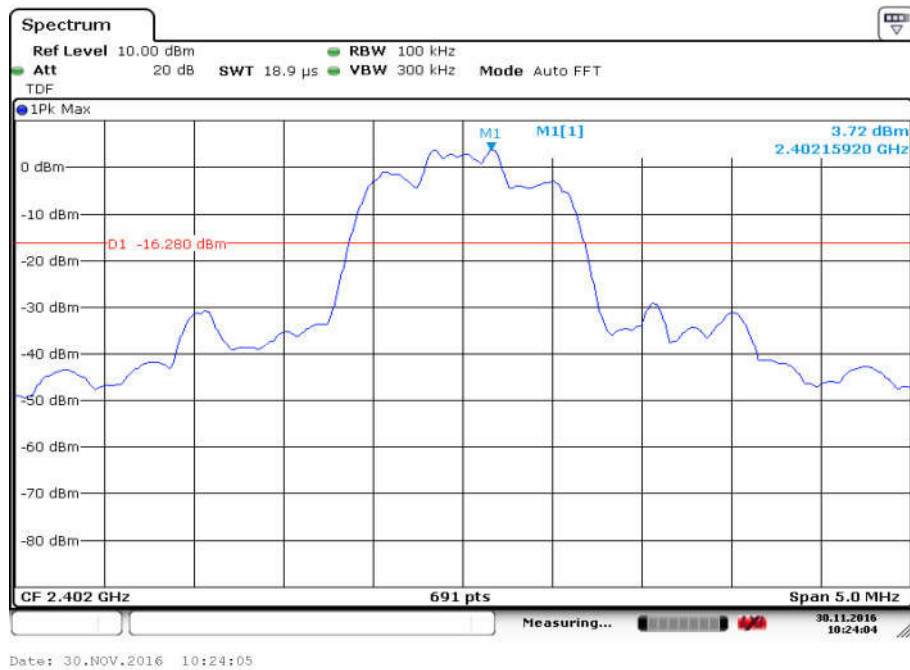


Fig. 40 Conducted Spurious Emission (8DPSK, Ch0, 2.402GHz)

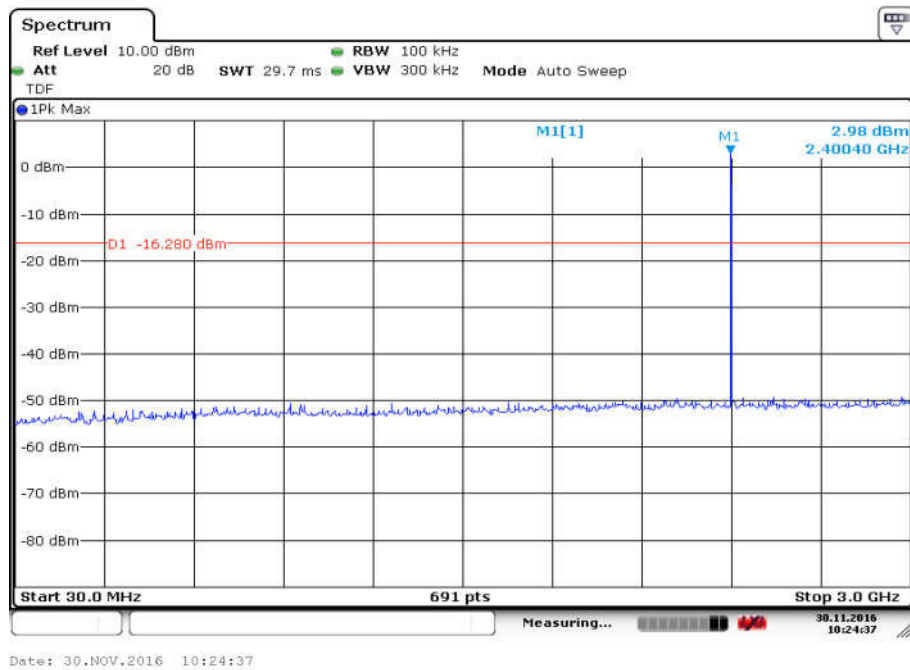


Fig. 41 Conducted Spurious Emission (8DPSK, Ch0, 30 MHz-3 GHz)

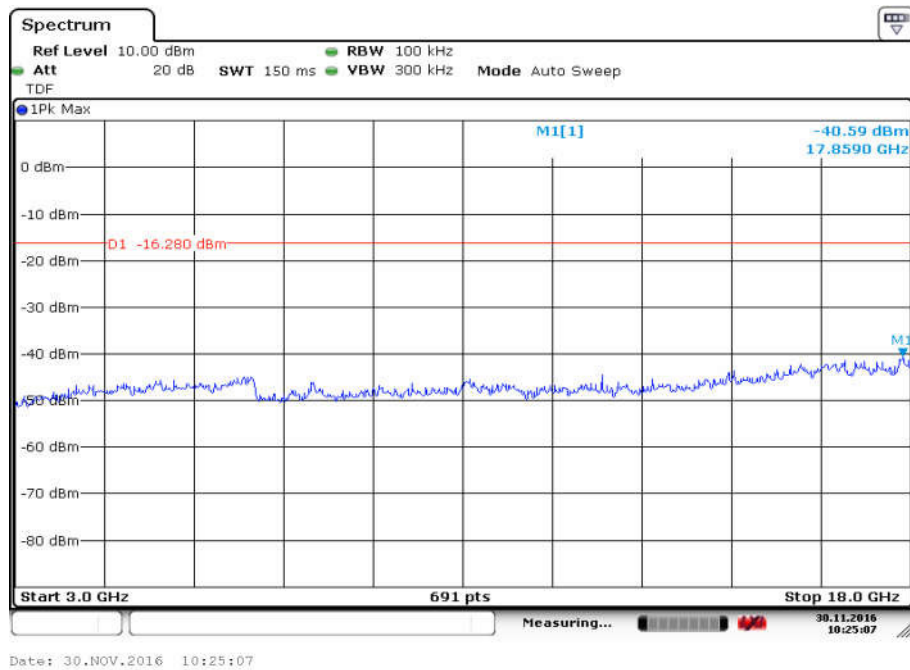


Fig. 42 Conducted Spurious Emission (8DPSK, Ch0, 3GHz-18 GHz)

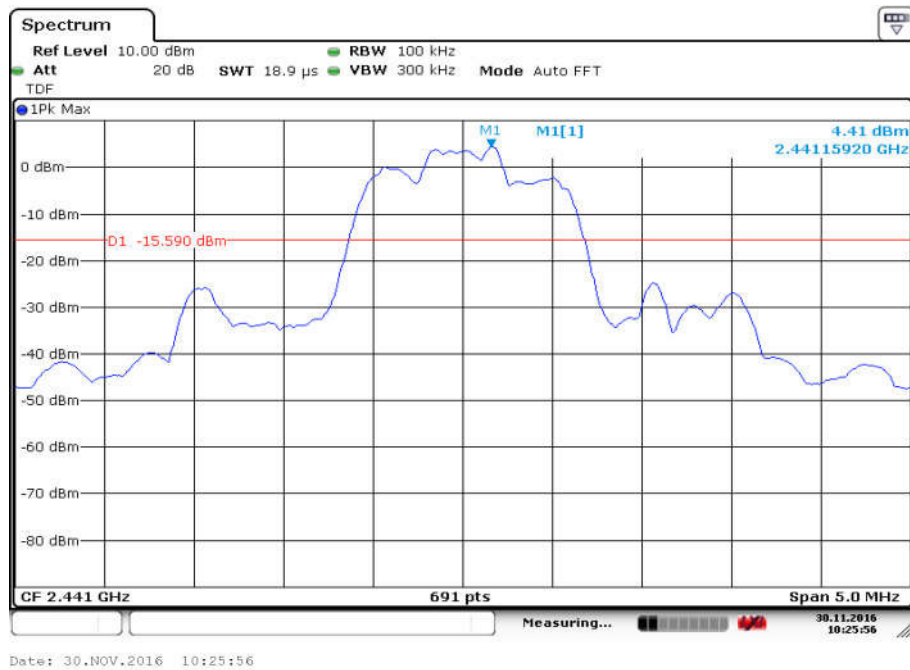


Fig. 43 Conducted Spurious Emission (8DPSK, Ch39, 2.441GHz)

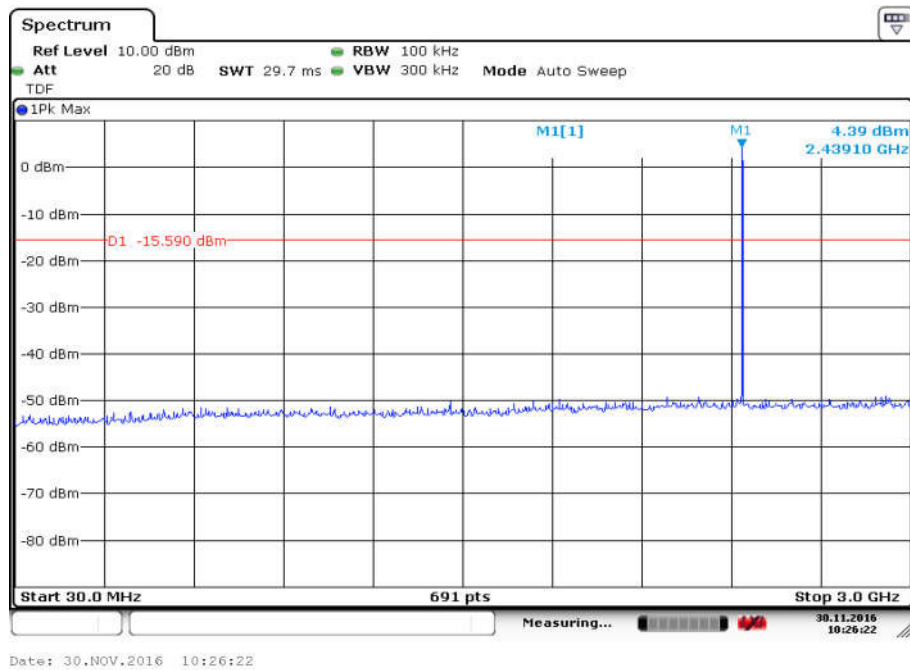


Fig. 44 Conducted Spurious Emission (8DPSK, Ch39, 30 MHz-3 GHz)

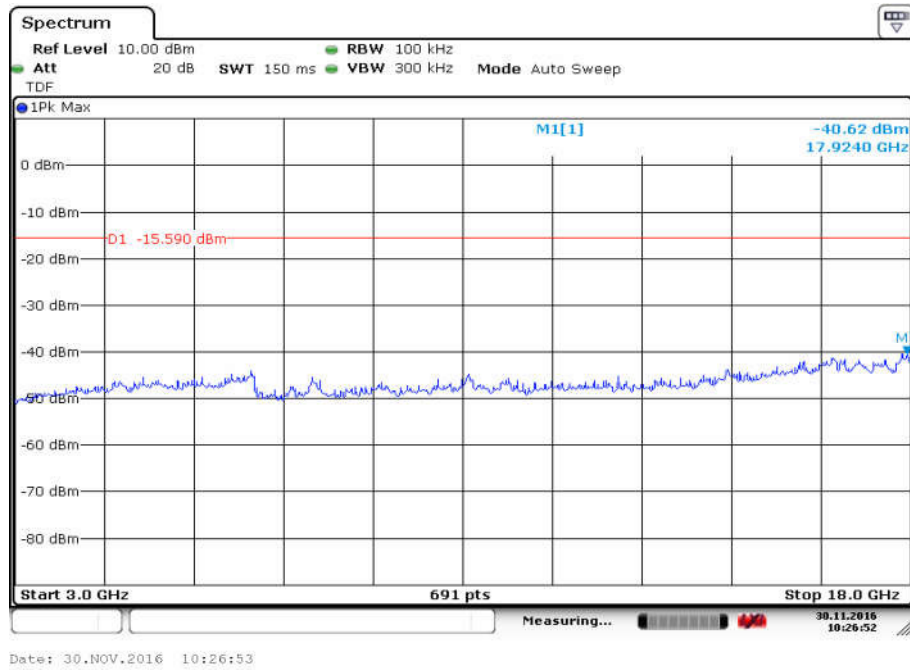


Fig. 45 Conducted Spurious Emission (8DPSK, Ch39, 3GHz-18 GHz)

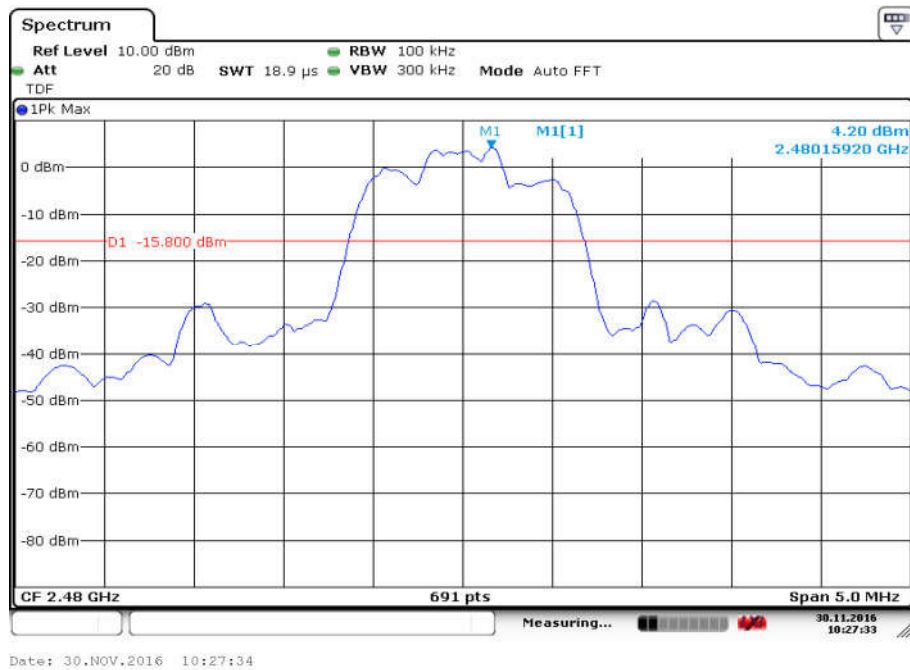


Fig. 46 Conducted Spurious Emission (8DPSK, Ch78, 2.480GHz)

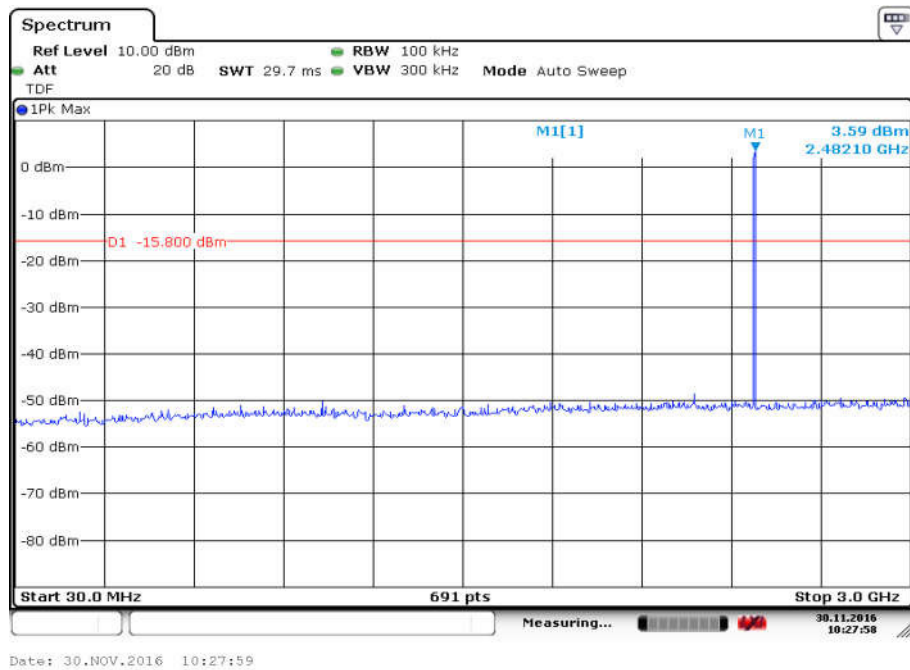


Fig. 47 Conducted Spurious Emission (8DPSK, Ch78, 30 MHz-3 GHz)

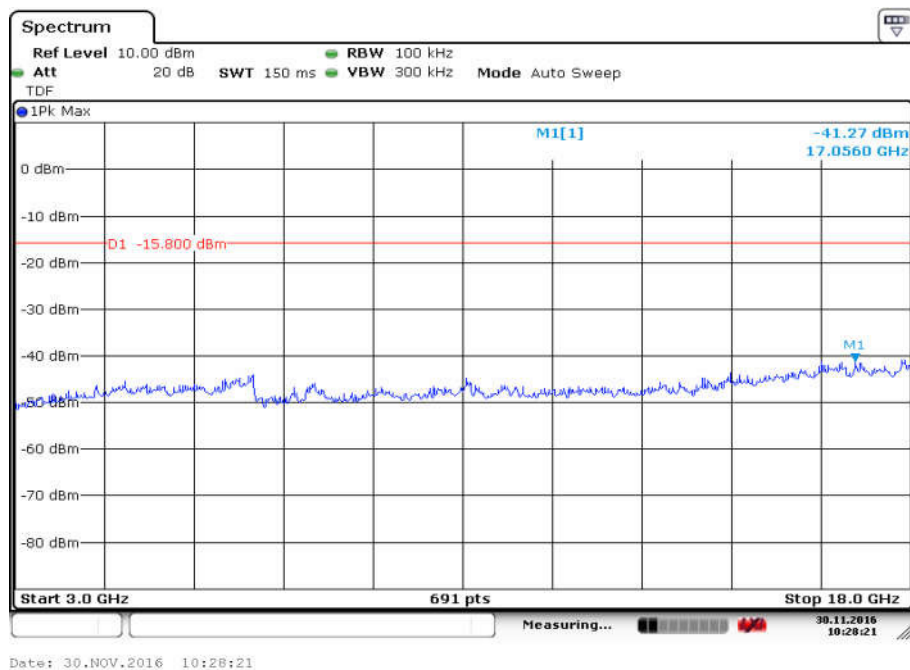


Fig. 48 Conducted Spurious Emission (8DPSK, Ch78, 3GHz-18 GHz)

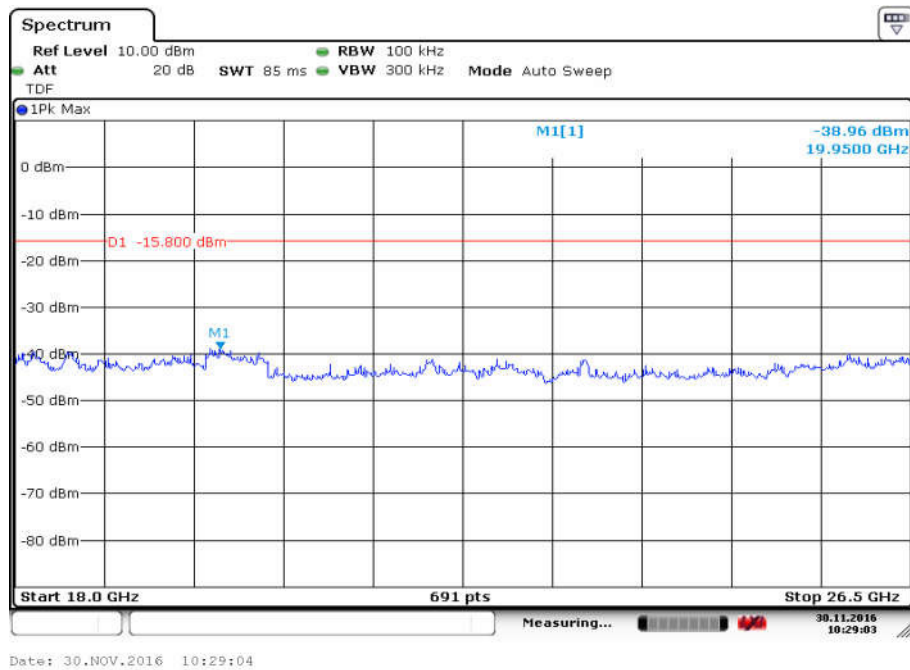


Fig. 49 Conducted Spurious Emission (All channel, 18 GHz-26 GHz)

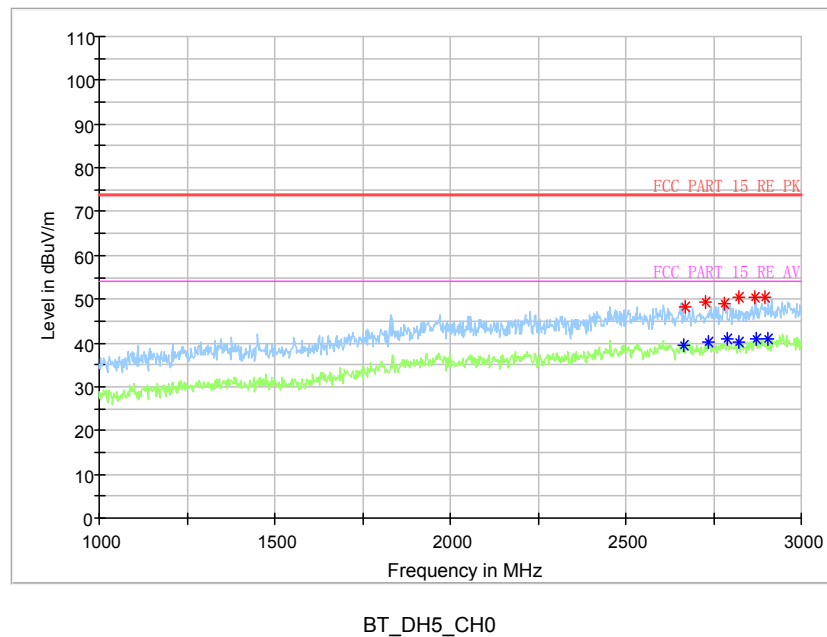
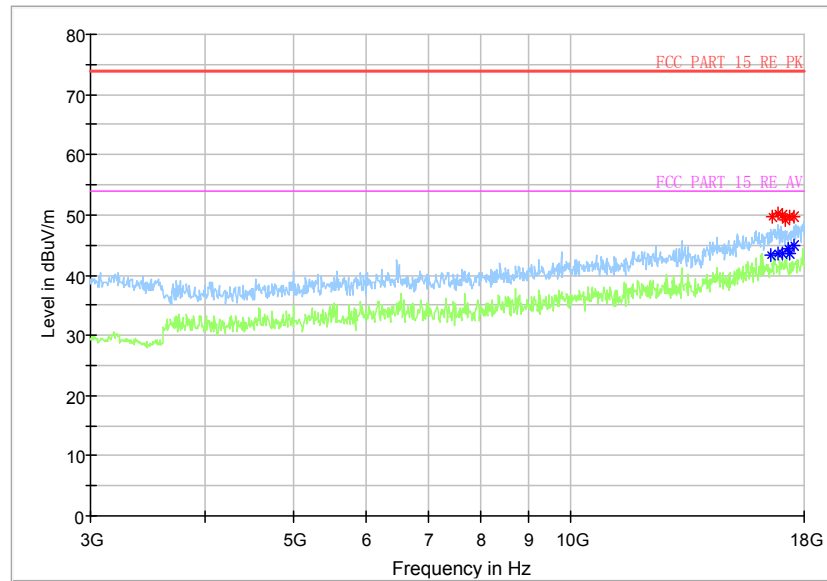
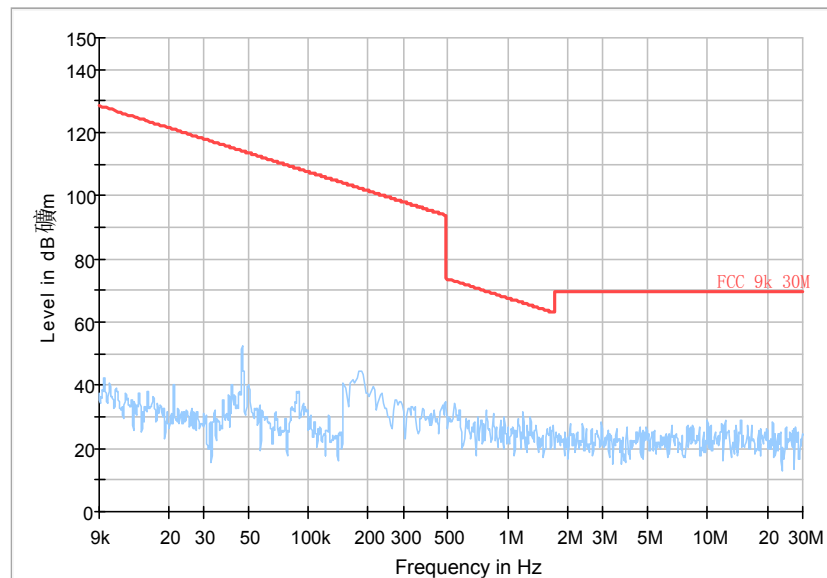


Fig. 50 Radiated Spurious Emission (GFSK, Ch0, 1 GHz ~3 GHz)



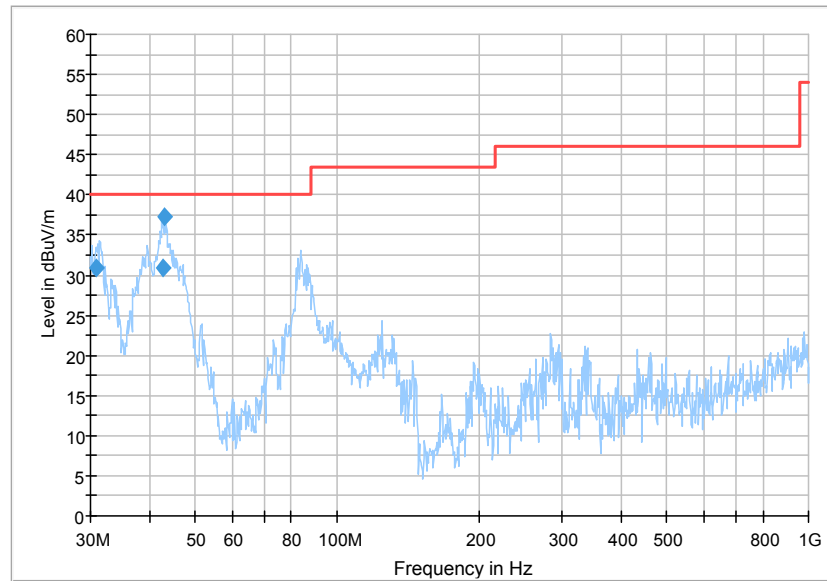
BT_DH5_CH0

Fig. 51 Radiated Spurious Emission (GFSK, Ch0, 3 GHz ~18 GHz)



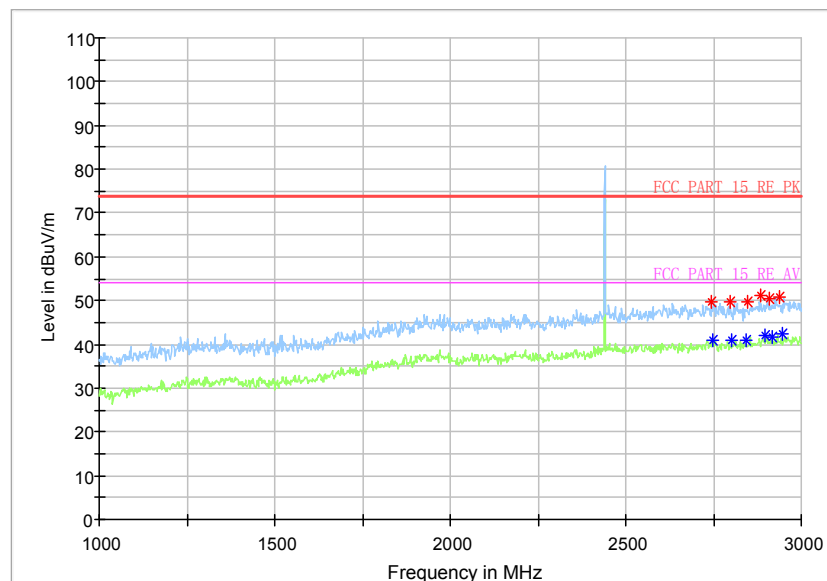
BT_DH5_CH39

Fig. 52 Radiated Spurious Emission (GFSK, Ch39, 9 kHz ~30 MHz)



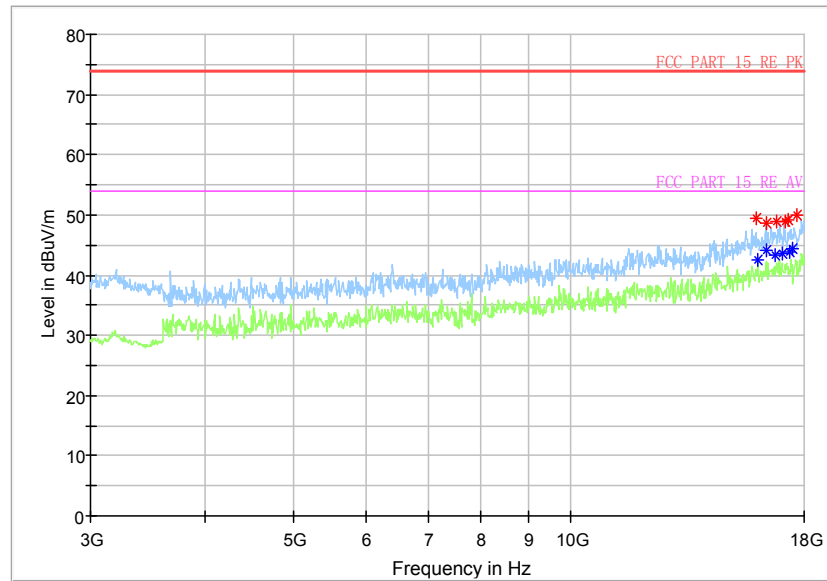
BT_DH5_CH39

Fig. 53 Radiated Spurious Emission (GFSK, Ch39, 30 MHz ~1 GHz)



BT_DH5_CH39

Fig. 54 Radiated Spurious Emission (GFSK, Ch39, 1 GHz ~3 GHz)



BT_DH5_CH39

Fig. 55 Radiated Spurious Emission (GFSK, Ch39, 3 GHz ~18 GHz)

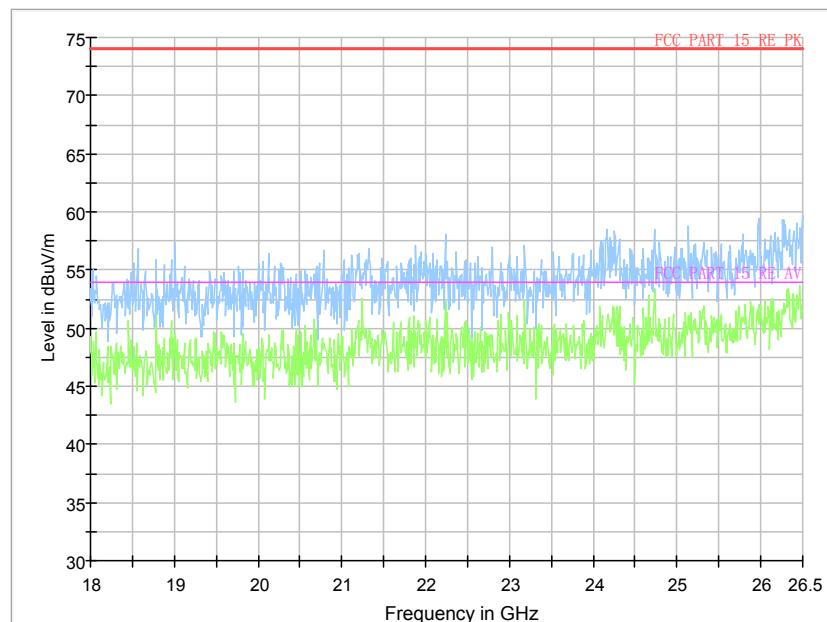
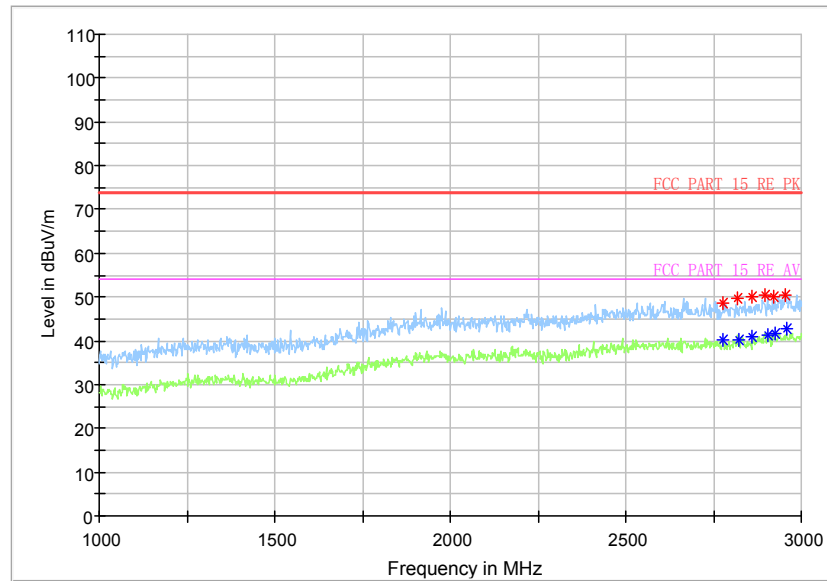
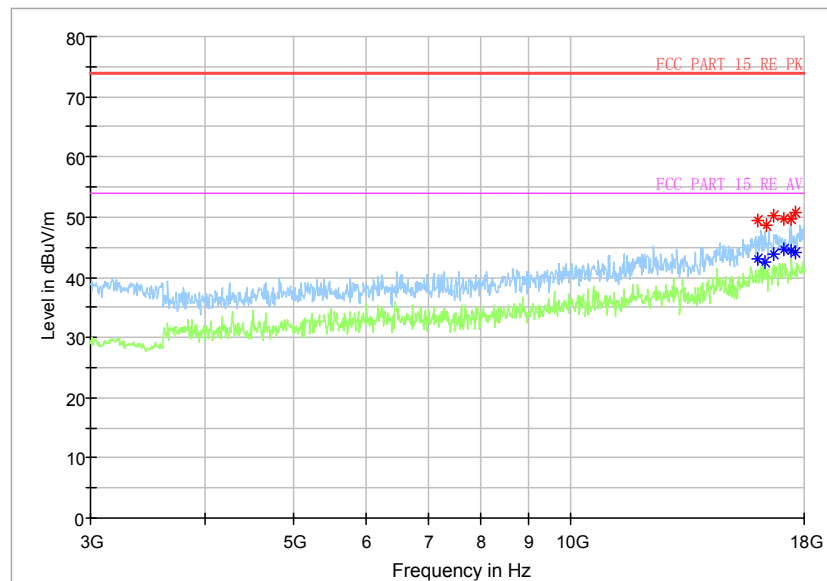


Fig. 56 Radiated Spurious Emission (GFSK, Ch39, 18 GHz ~26.5 GHz)



BT_DH5_CH78

Fig. 57 Radiated Spurious Emission (GFSK, Ch78, 1 GHz ~3 GHz)



BT_DH5_CH78

Fig. 58 Radiated Spurious Emission (GFSK, Ch78, 3 GHz ~18 GHz)

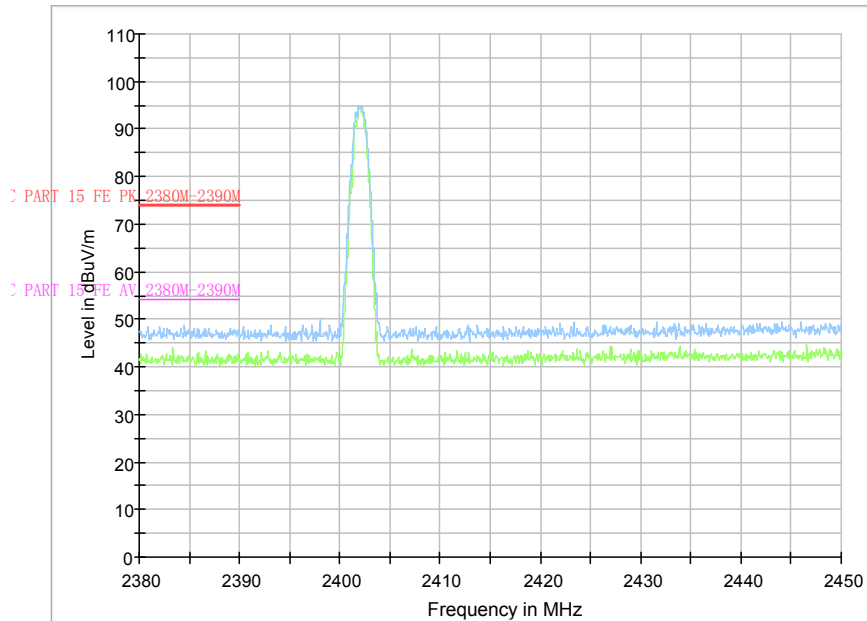


Fig. 59 Radiated Emission Power (GFSK, Ch0, 2380GHz~2450GHz)

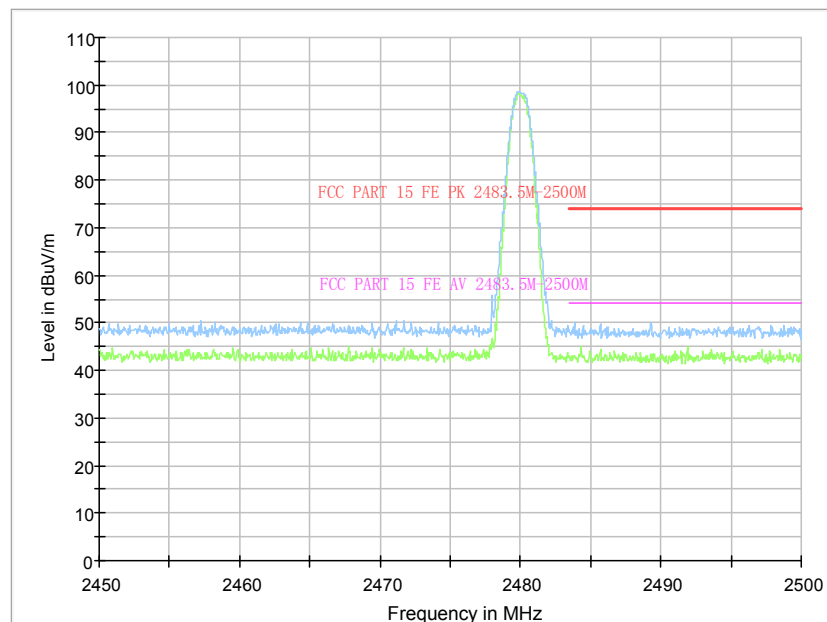
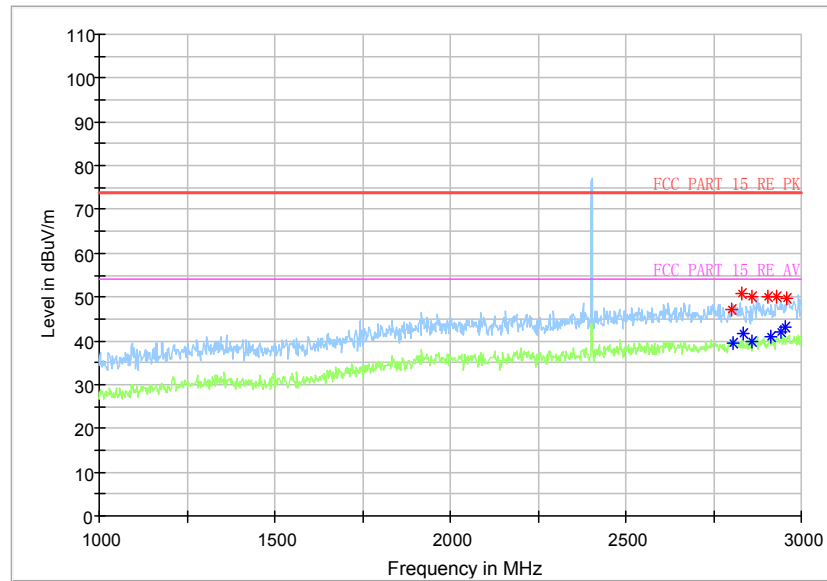
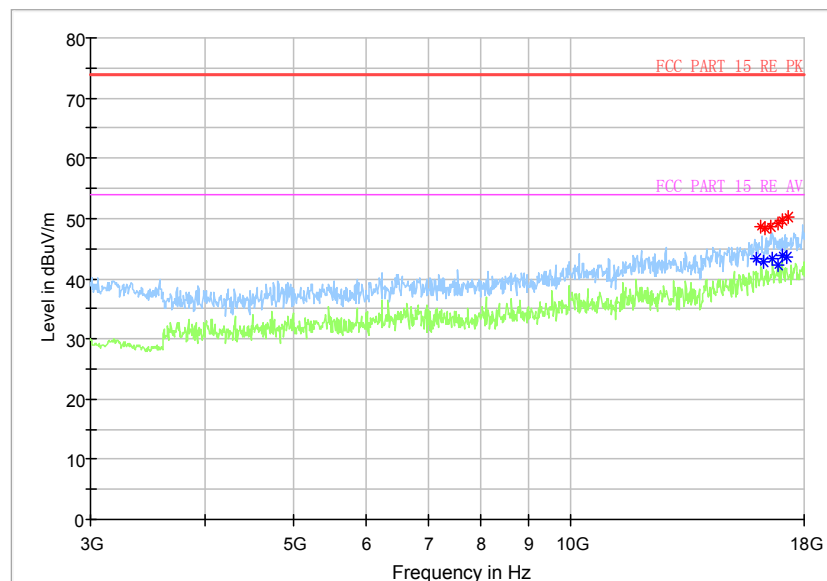


Fig. 60 Radiated Emission Power (GFSK, Ch78, 2450GHz~2500GHz)



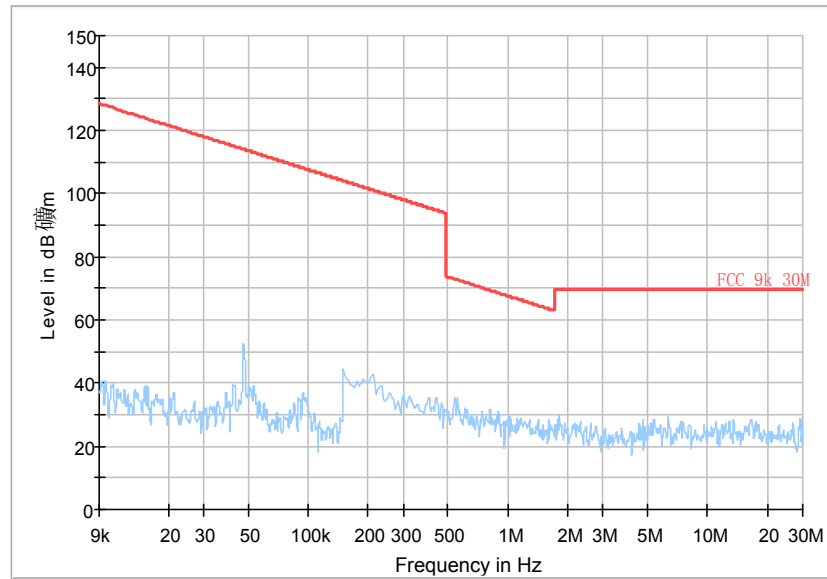
BT_2DH5_CH0

Fig. 61 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch0, 1 GHz ~3 GHz)



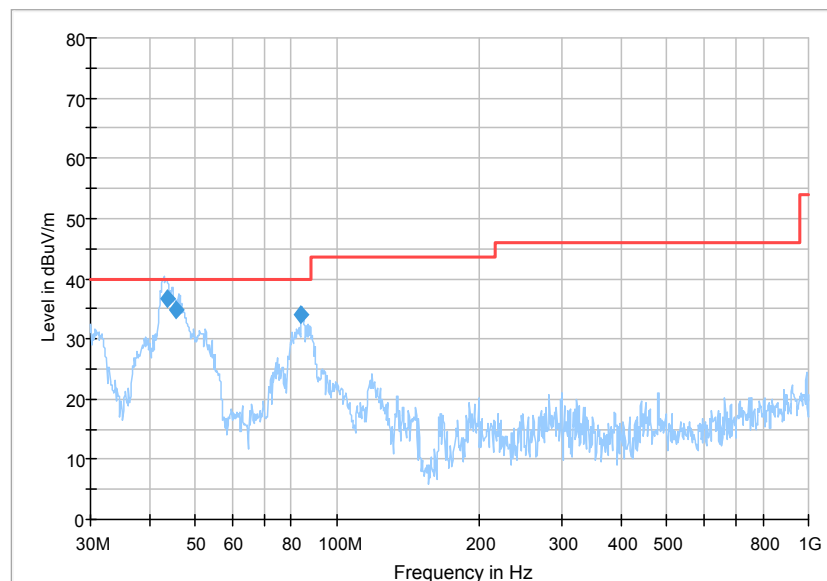
BT_2DH5_CH0

Fig. 62 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch0, 3 GHz ~18 GHz)



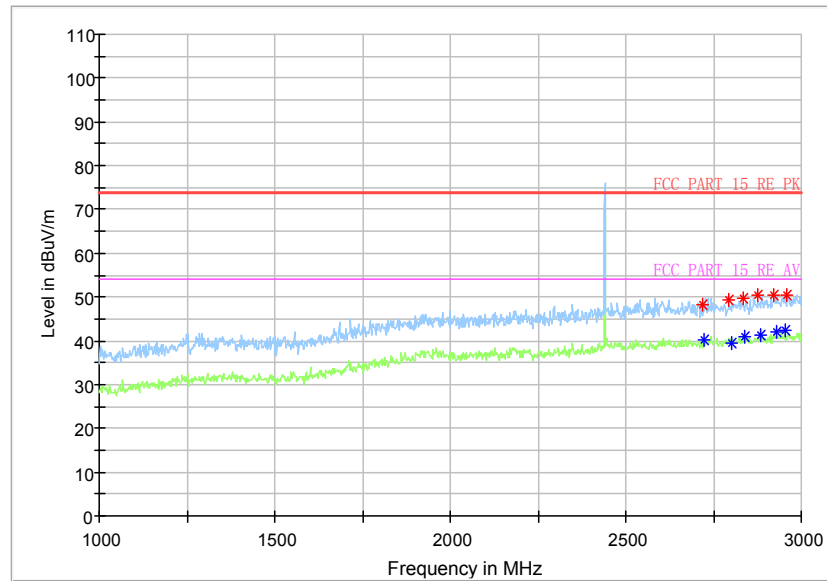
BT_2DH5_CH39

Fig. 63 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch39, 9 kHz ~30 MHz)



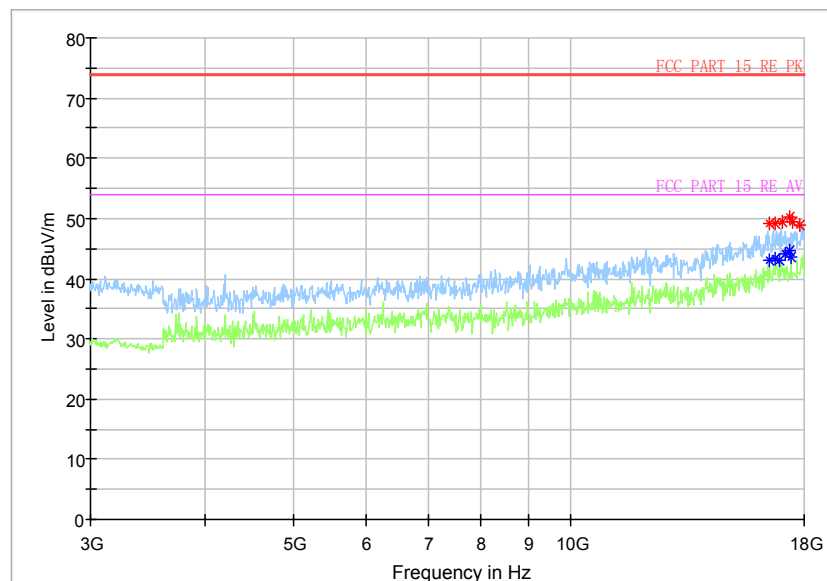
BT_2DH5_CH39

Fig. 64 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch39, 30 MHz ~1 GHz)



BT_2DH5_CH39

Fig. 65 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch39, 1 GHz ~3 GHz)



BT_2DH5_CH39

Fig. 66 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch39, 3 GHz ~18 GHz)

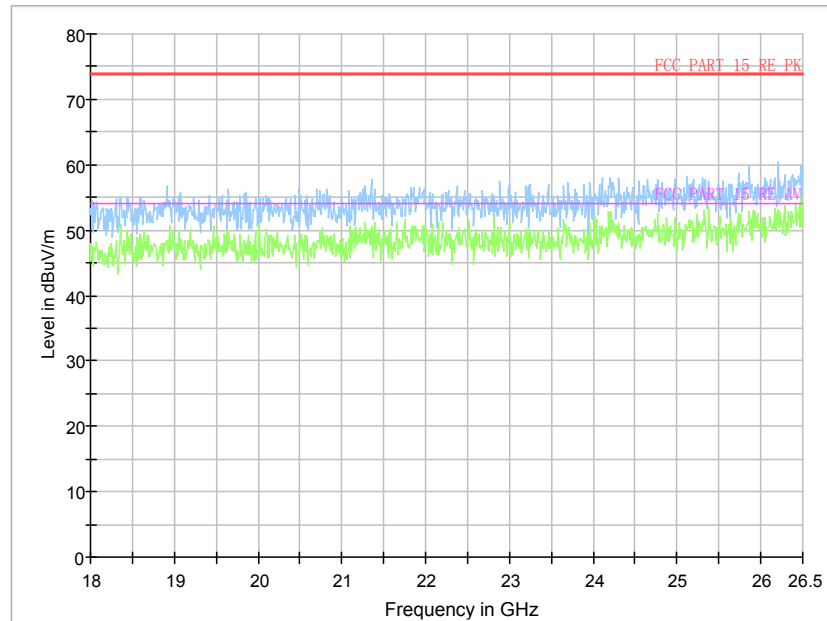


Fig. 67 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch39, 18 GHz ~26.5 GHz)

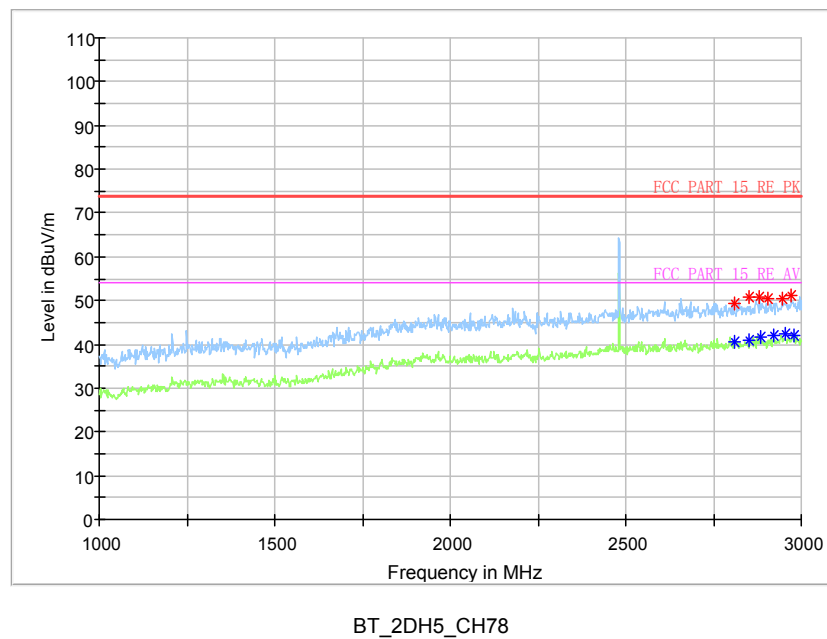
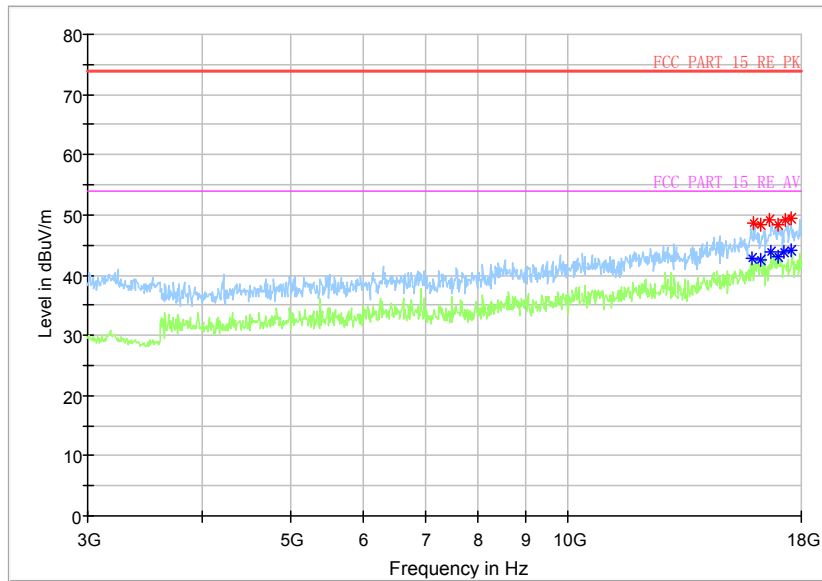


Fig. 68 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch78, 1 GHz ~3 GHz)



BT_2DH5_CH78

Fig. 69 Radiated Spurious Emission ($\pi/4$ DQPSK, Ch78, 3 GHz ~18 GHz)

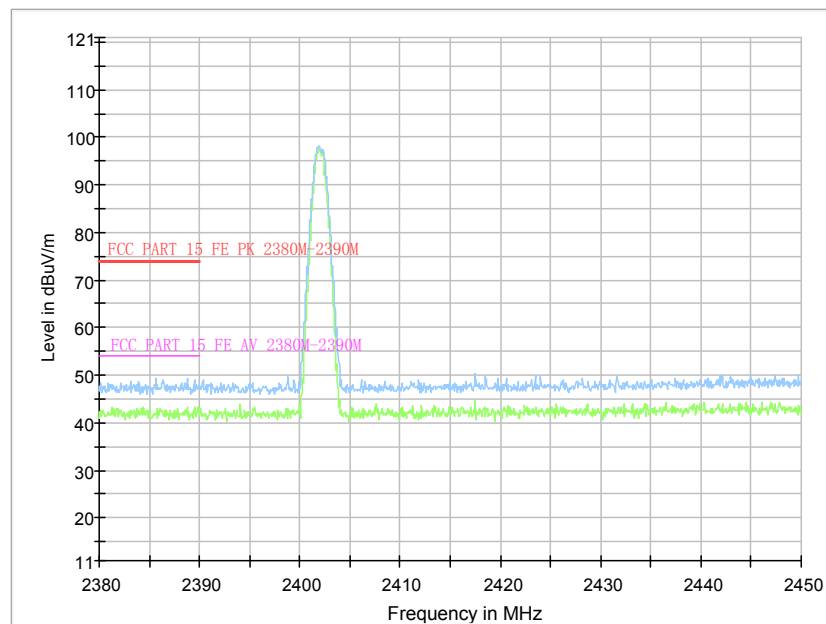


Fig. 70 Radiated Emission Power ($\pi/4$ DQPSK, Ch0, 2380GHz~2450GHz)

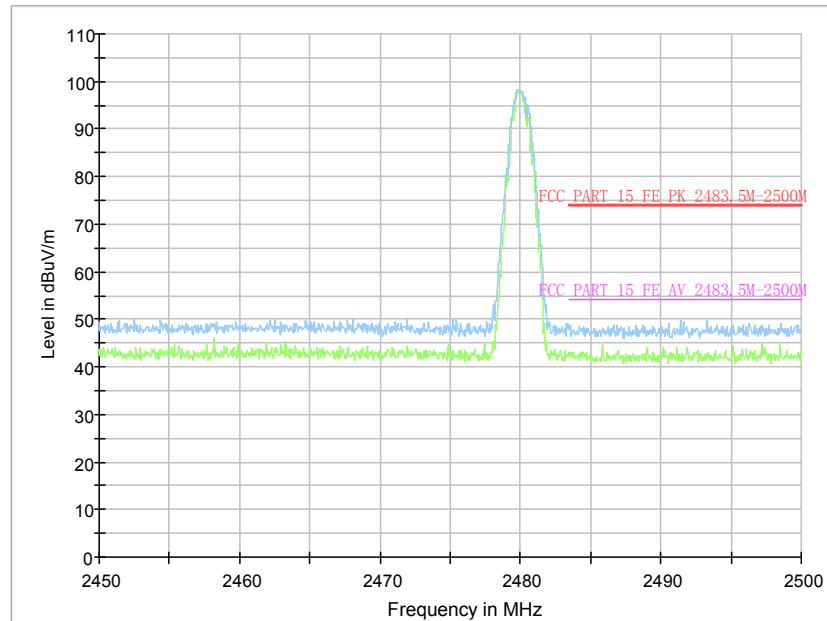
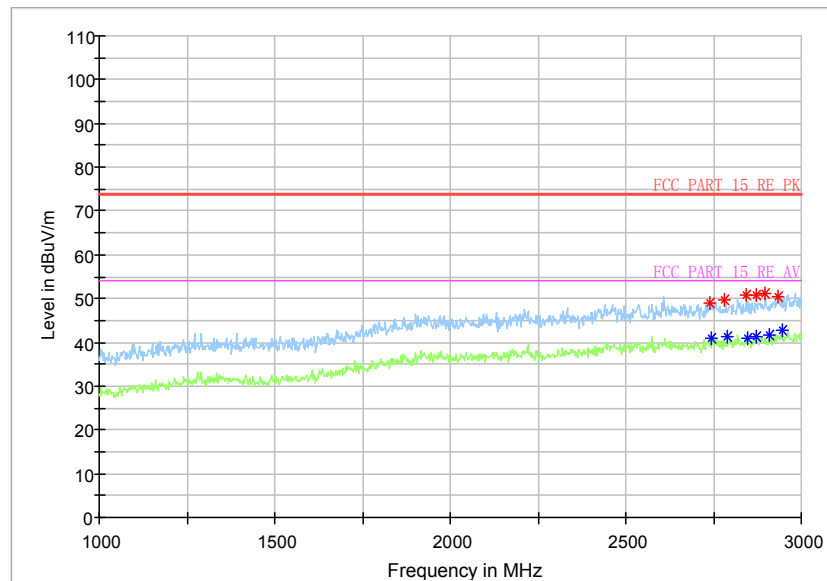
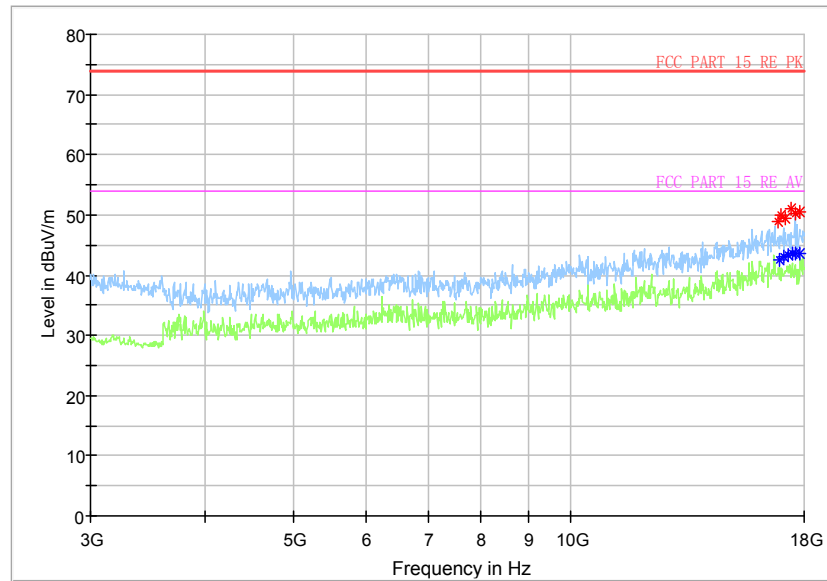


Fig. 71 Radiated Emission Power ($\pi/4$ DQPSK, Ch78, 2450GHz~2500GHz)



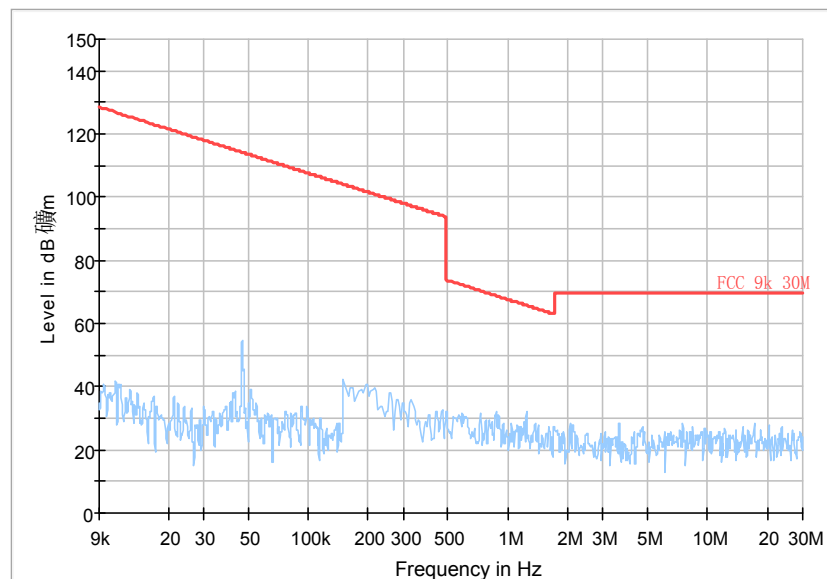
BT_3DH5_CH0

Fig. 72 Radiated Spurious Emission (8DPSK, Ch0, 1 GHz ~3 GHz)



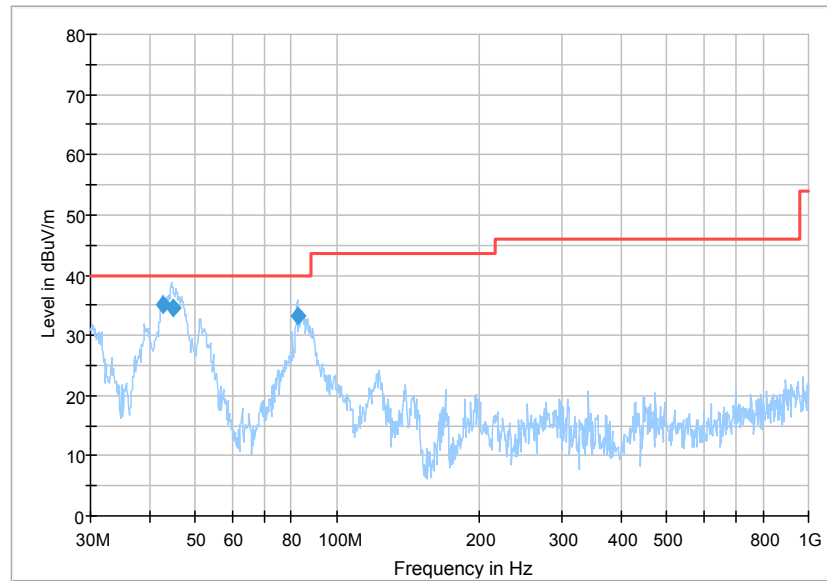
BT_3DH5_CH0

Fig. 73 Radiated Spurious Emission (8DPSK, Ch0, 3 GHz ~18 GHz)



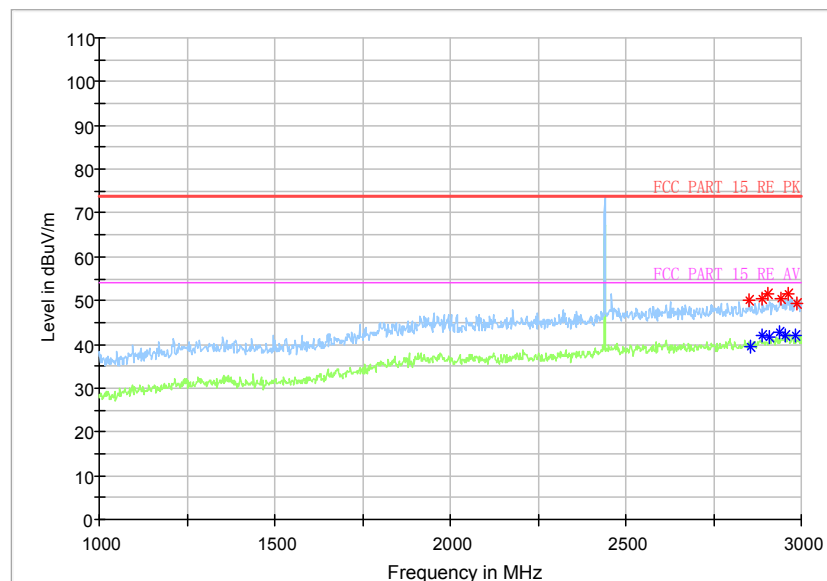
BT_3DH5_CH39

Fig. 74 Radiated Spurious Emission (8DPSK, Ch39, 9 kHz ~30 MHz)



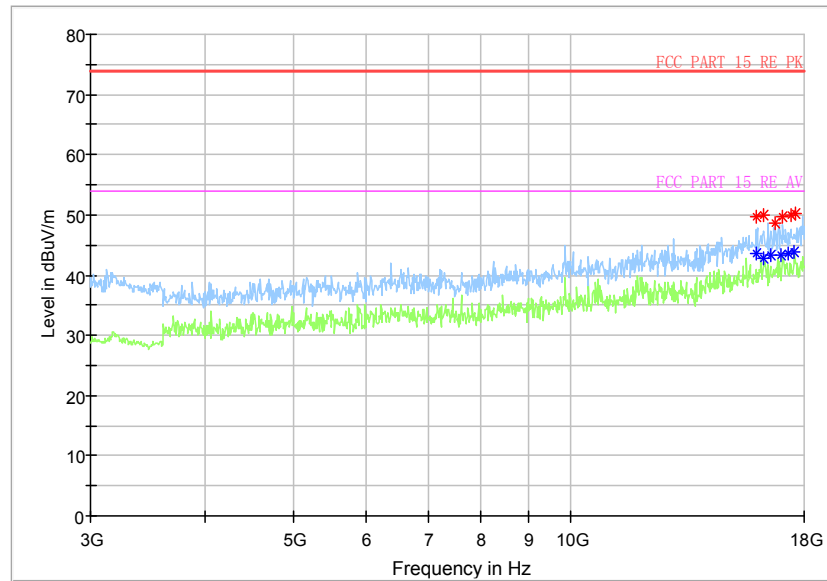
BT_3DH5_CH39

Fig. 75 Radiated Spurious Emission (8DPSK, Ch39, 30 MHz ~1 GHz)



BT_3DH5_CH39

Fig. 76 Radiated Spurious Emission (8DPSK, Ch39, 1 GHz ~3 GHz)



BT_3DH5_CH39

Fig. 77 Radiated Spurious Emission (8DPSK, Ch39, 3 GHz ~18 GHz)

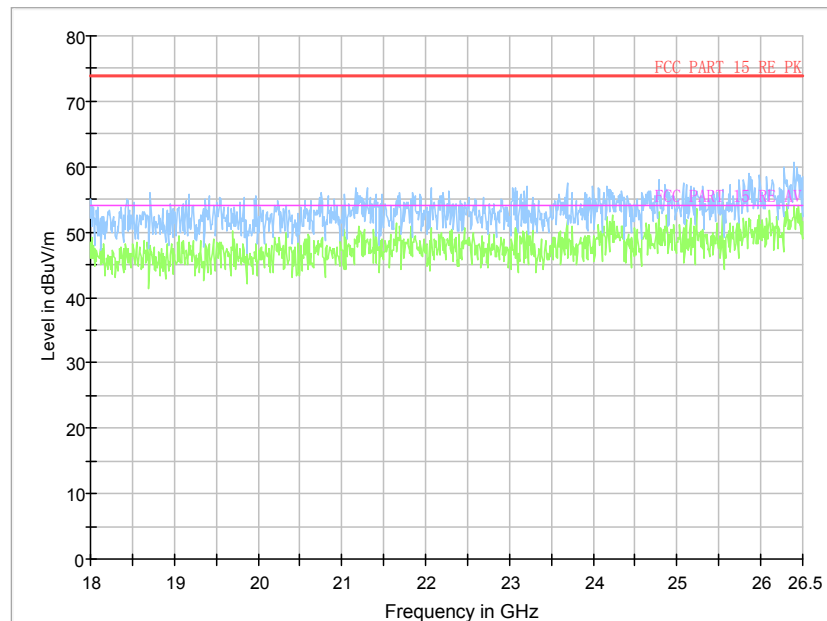
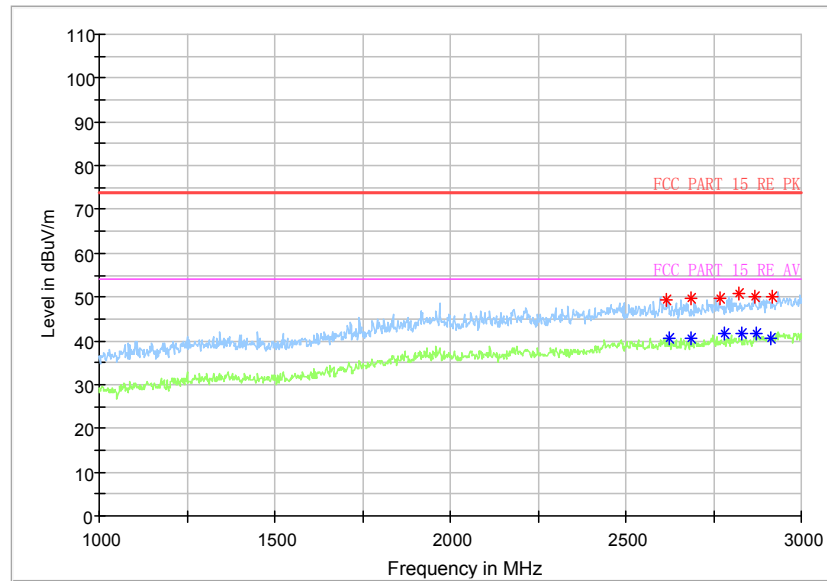
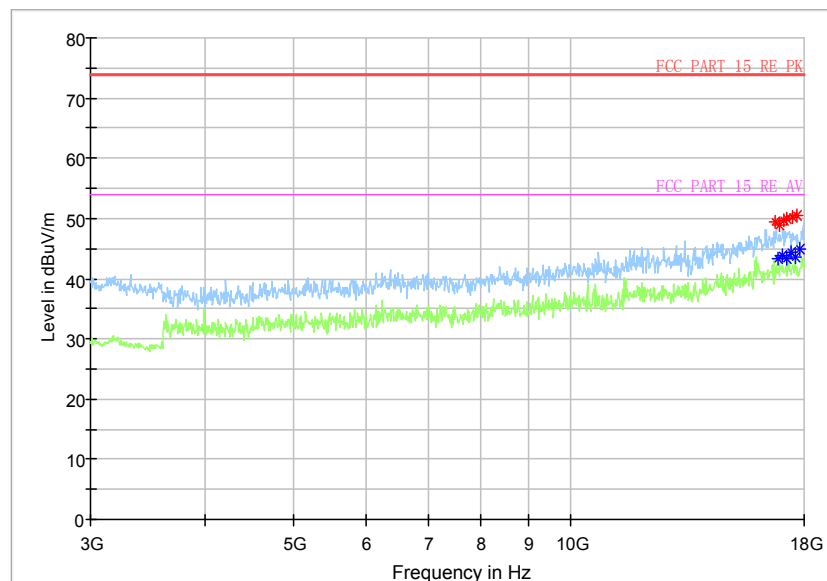


Fig. 78 Radiated Spurious Emission (8DPSK, Ch39, 18 GHz ~26.5 GHz)



BT_3DH5_CH78

Fig. 79 Radiated Spurious Emission (8DPSK, Ch78, 1 GHz ~3 GHz)



BT_3DH5_CH78

Fig. 80 Radiated Spurious Emission (8DPSK, Ch78, 3 GHz ~18 GHz)

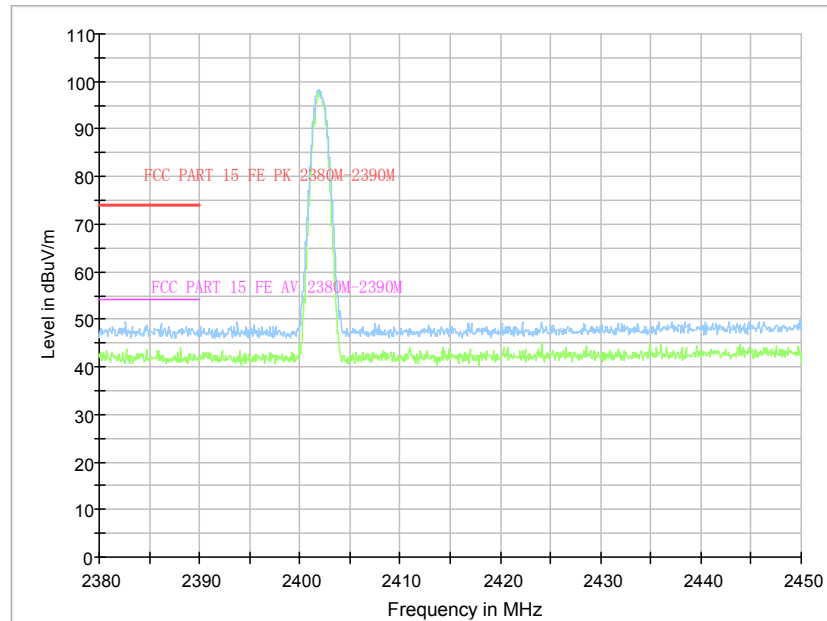


Fig. 81 Radiated Emission Power (8DPSK, Ch0, 2380GHz~2450GHz)

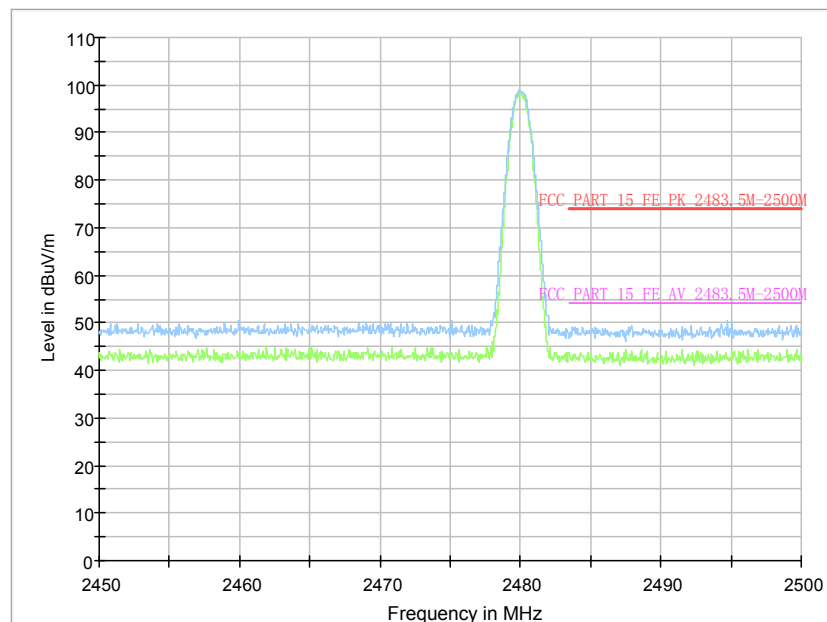


Fig. 82 Radiated Emission Power (8DPSK, Ch78, 2450GHz~2500GHz)

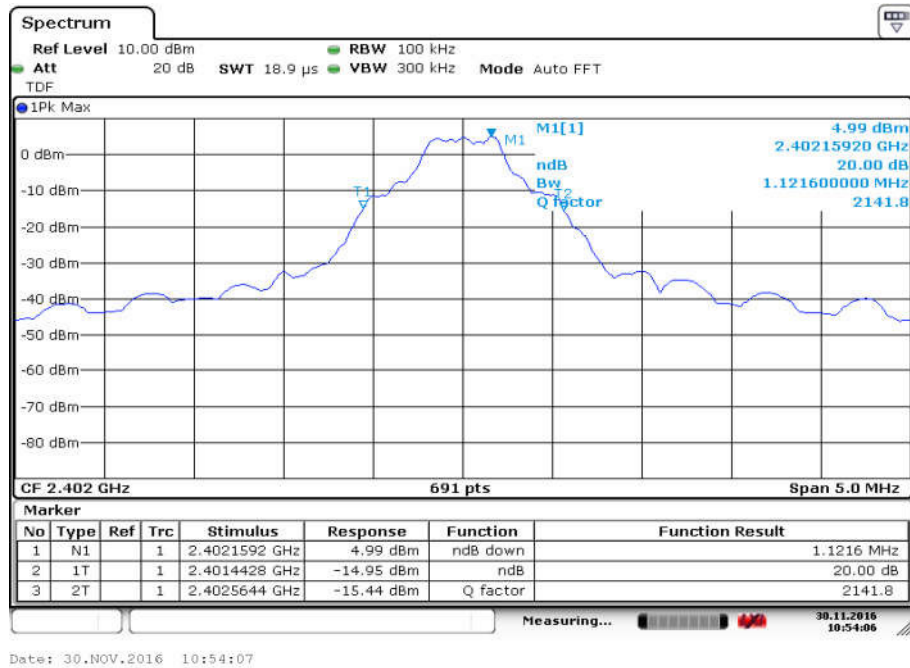


Fig. 83 Occupied 20dB Bandwidth (GFSK, Ch 0)

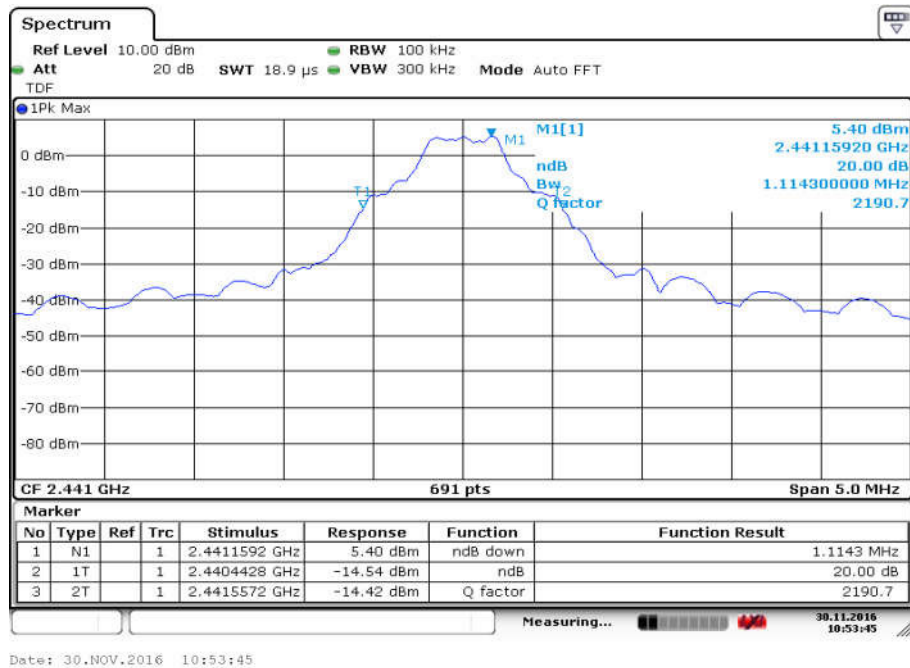


Fig. 84 Occupied 20dB Bandwidth (GFSK, Ch 39)

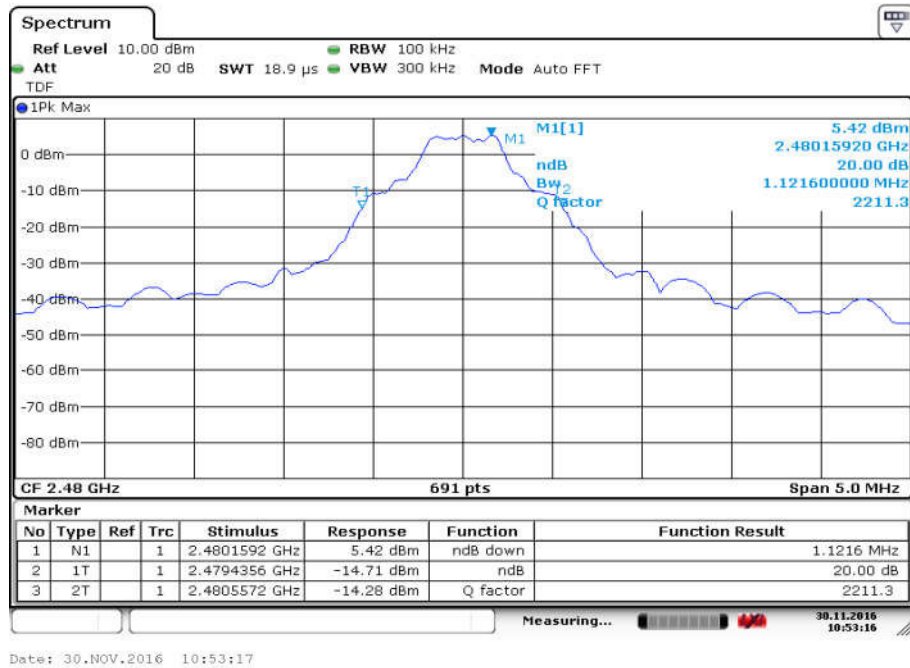


Fig. 85 Occupied 20dB Bandwidth (GFSK, Ch 78)

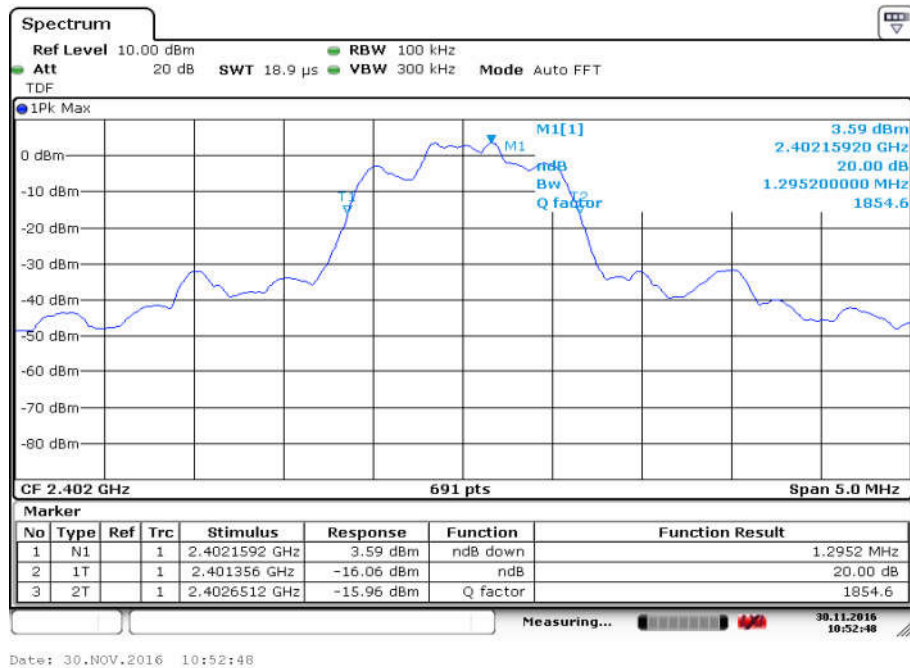


Fig. 86 Occupied 20dB Bandwidth ($\pi/4$ DQPSK, Ch 0)

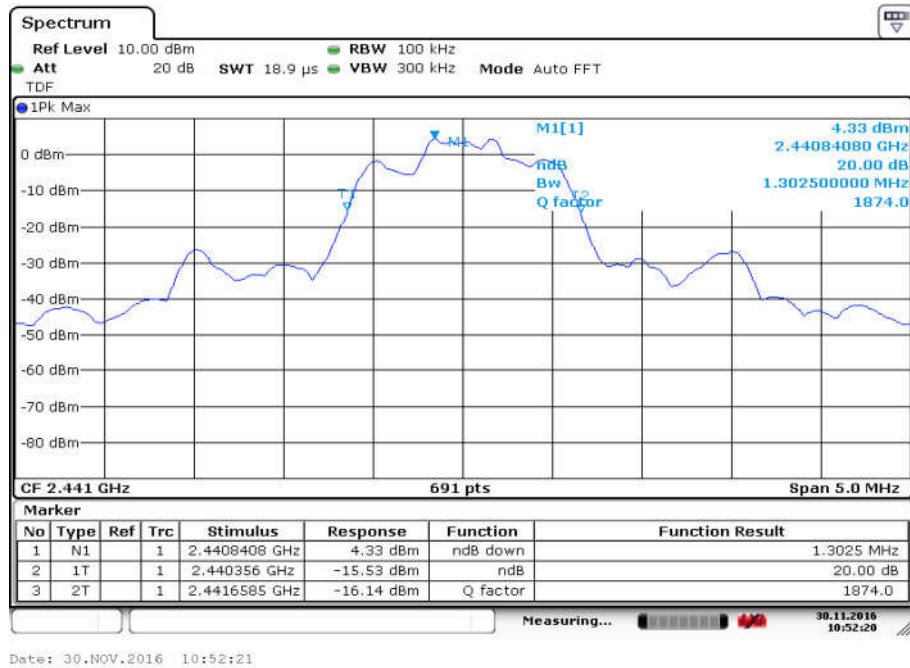


Fig. 87 Occupied 20dB Bandwidth ($\pi/4$ DQPSK, Ch 39)

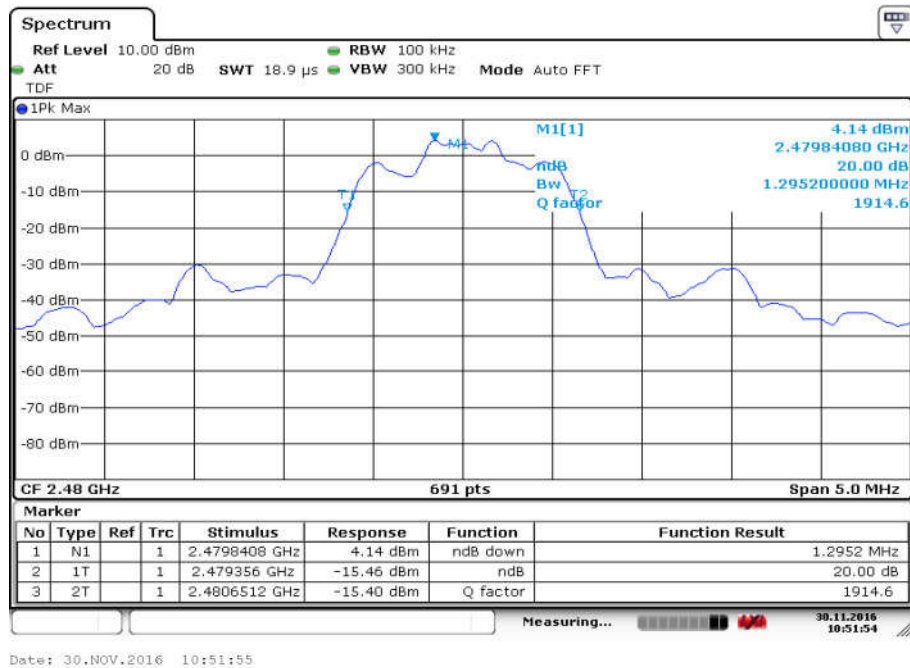


Fig. 88 Occupied 20dB Bandwidth ($\pi/4$ DQPSK, Ch 78)

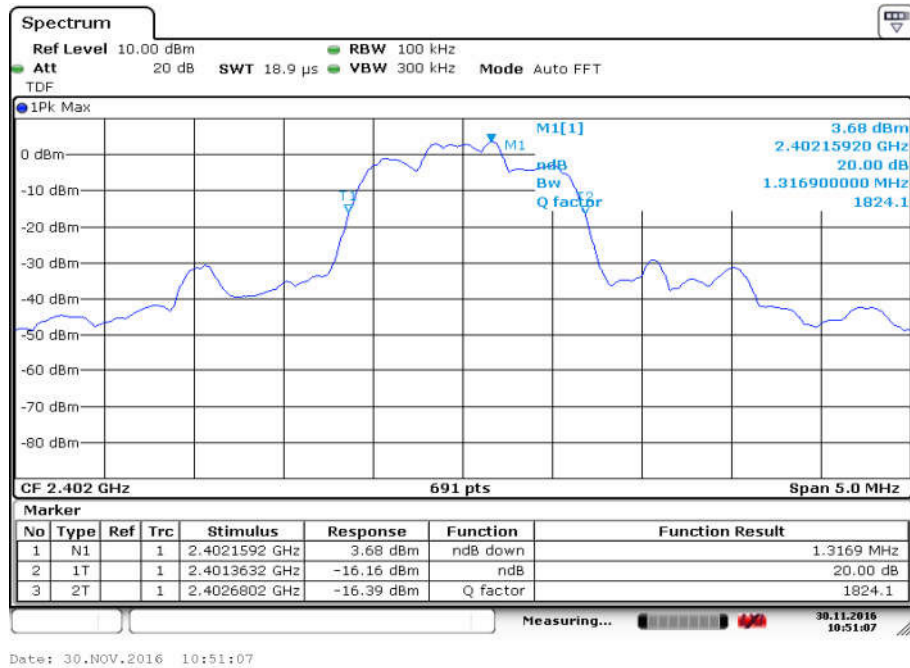


Fig. 89 Occupied 20dB Bandwidth (8DPSK, Ch 0)

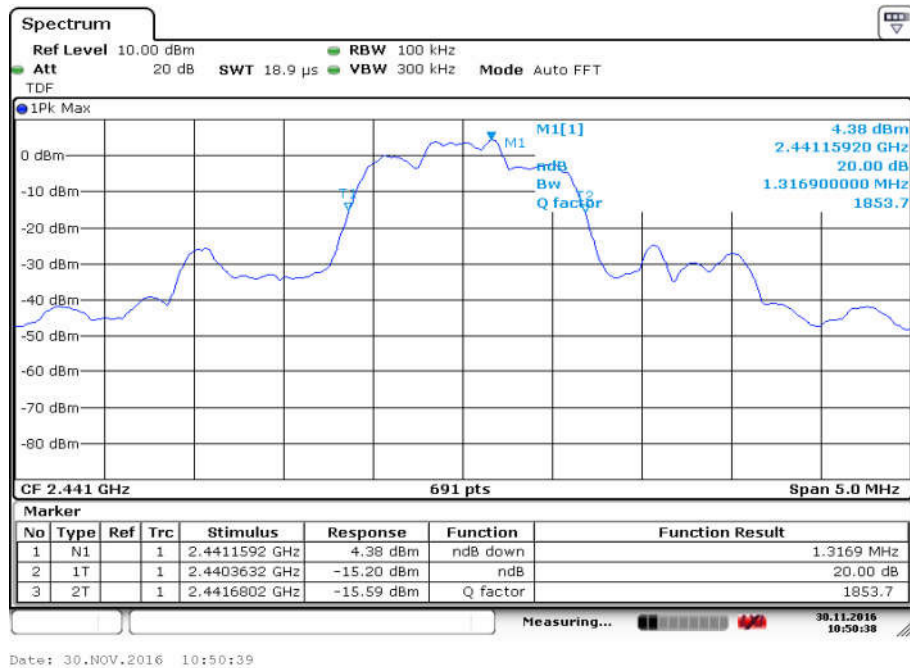


Fig. 90 Occupied 20dB Bandwidth (8DPSK, Ch 39)

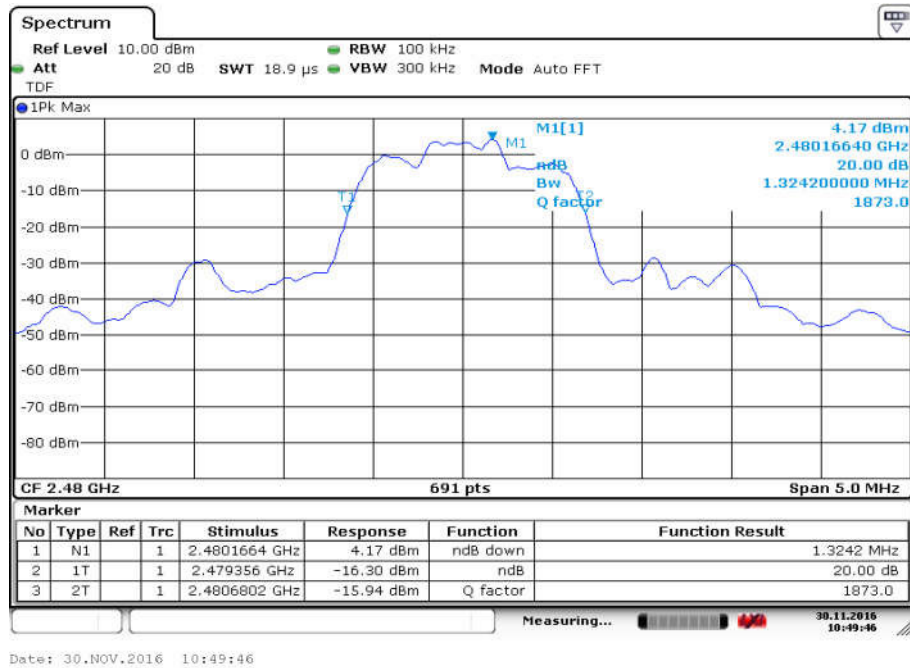


Fig. 91 Occupied 20dB Bandwidth (8DPSK, Ch 78)

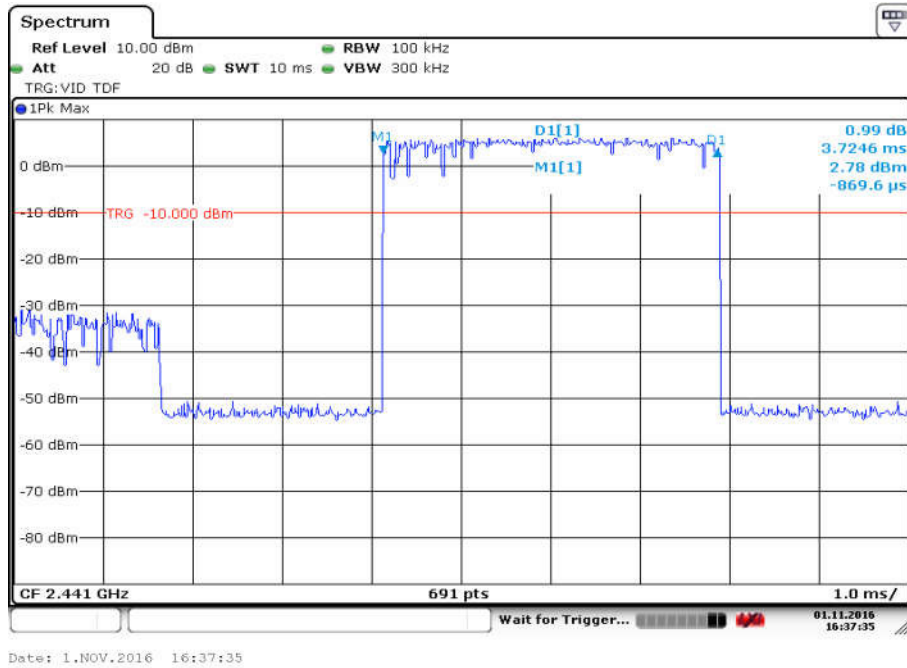


Fig. 92 Time of Occupancy(Dwell Time) (GFSK, Ch39)

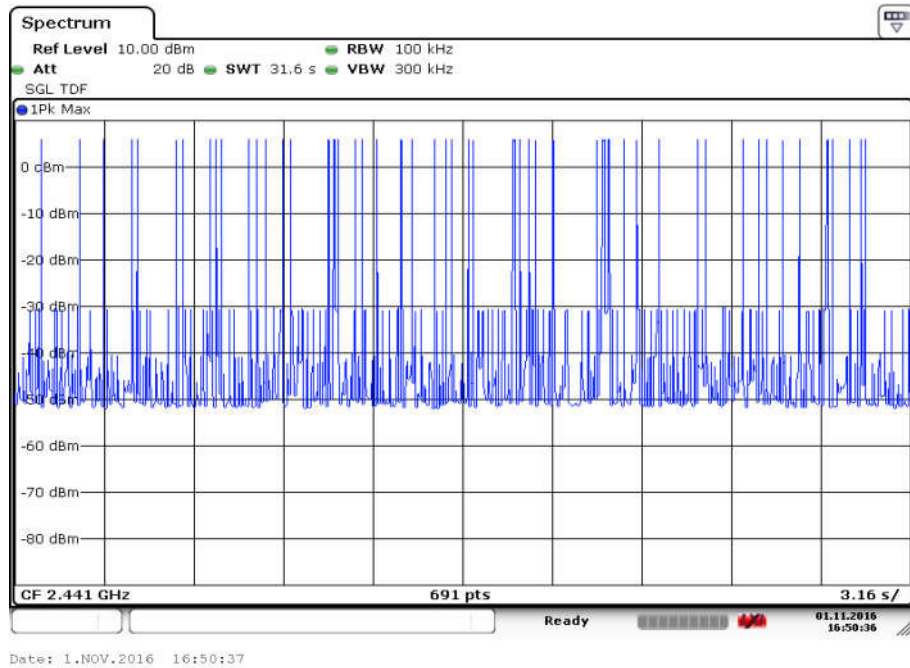


Fig. 93 Number of Transmissions (GFSK, Ch39)

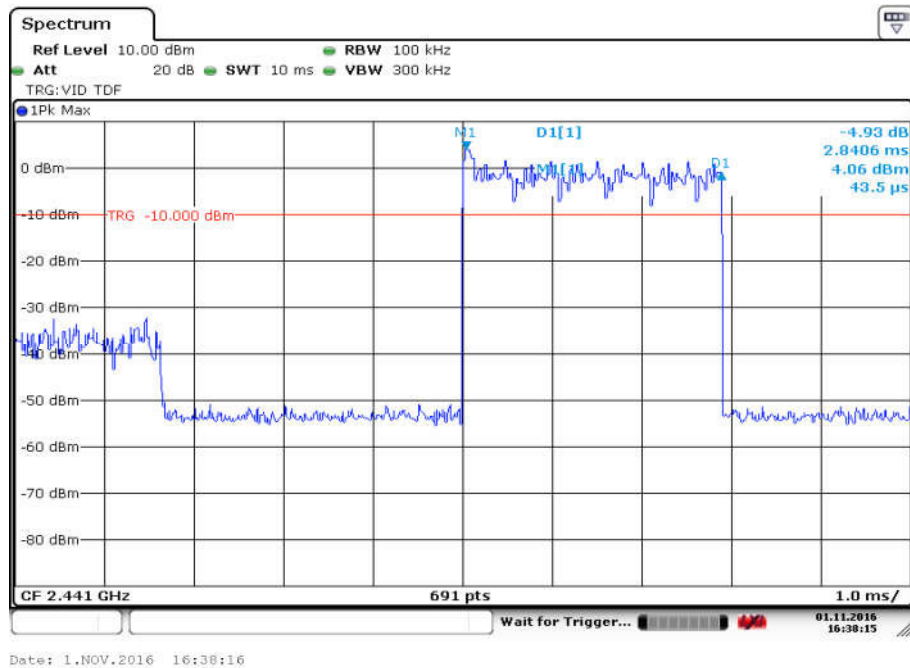


Fig. 94 Time of Occupancy(Dwell Time) ($\pi/4$ DQPSK, Ch39)

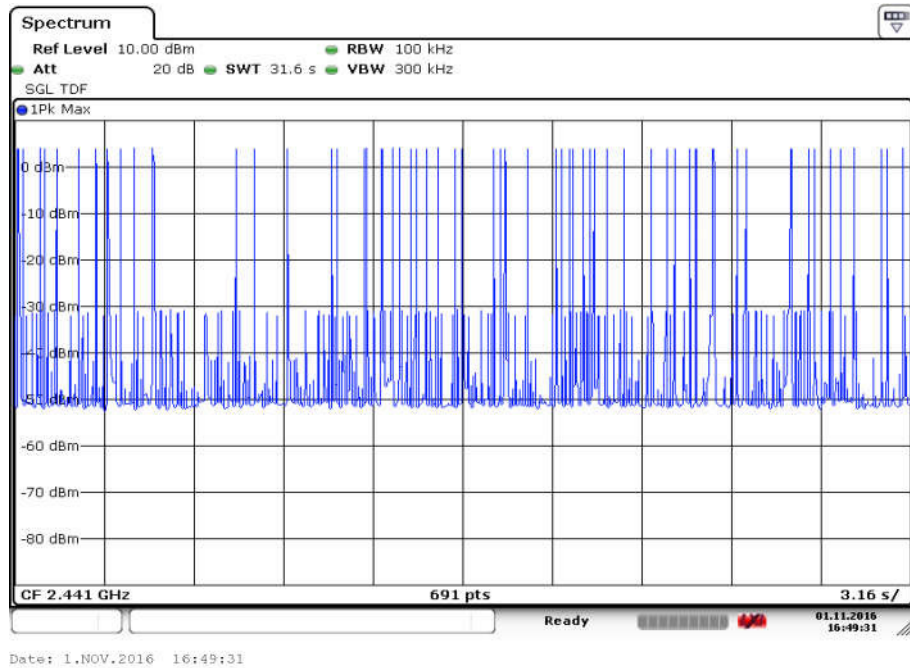


Fig. 95 Number of Transmissions ($\pi/4$ DQPSK, Ch39)

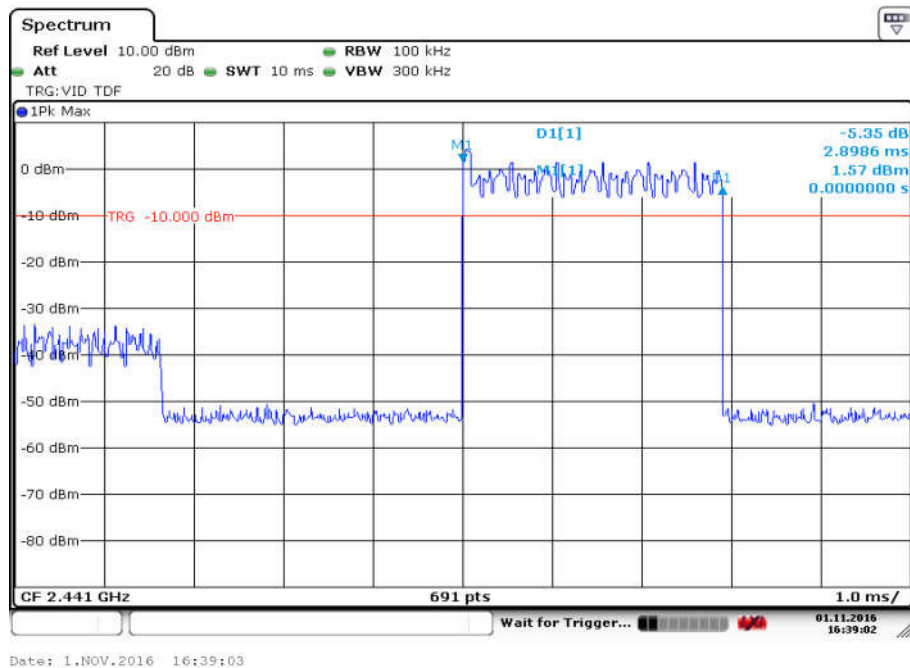


Fig. 96 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

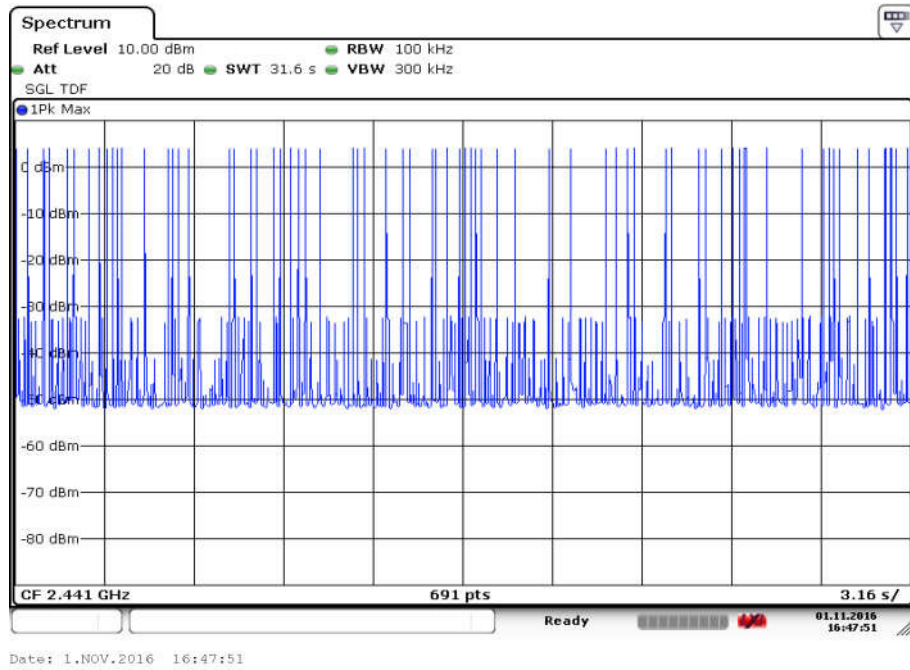


Fig. 97 Number of Transmissions (8DPSK, Ch39)

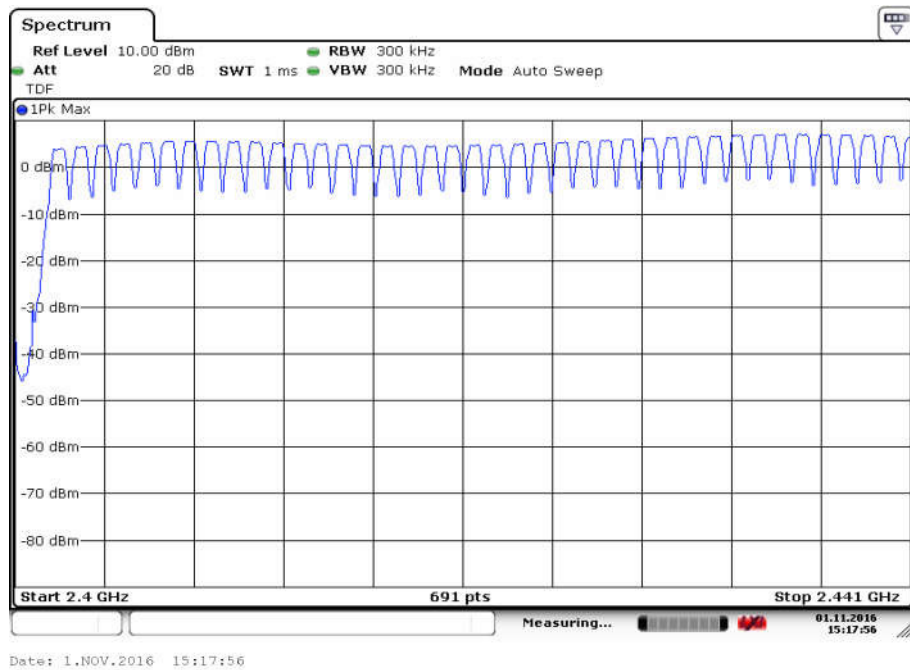


Fig. 98 Hopping channel ch0~39 (GFSK, Ch39)

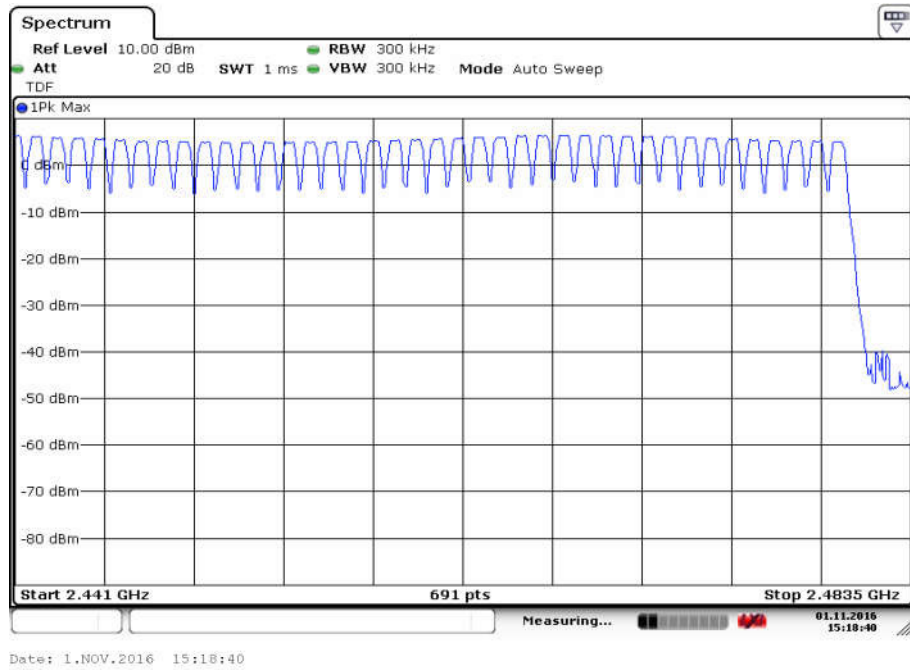


Fig. 99 Hopping channel ch39~78 (GFSK, Ch39)

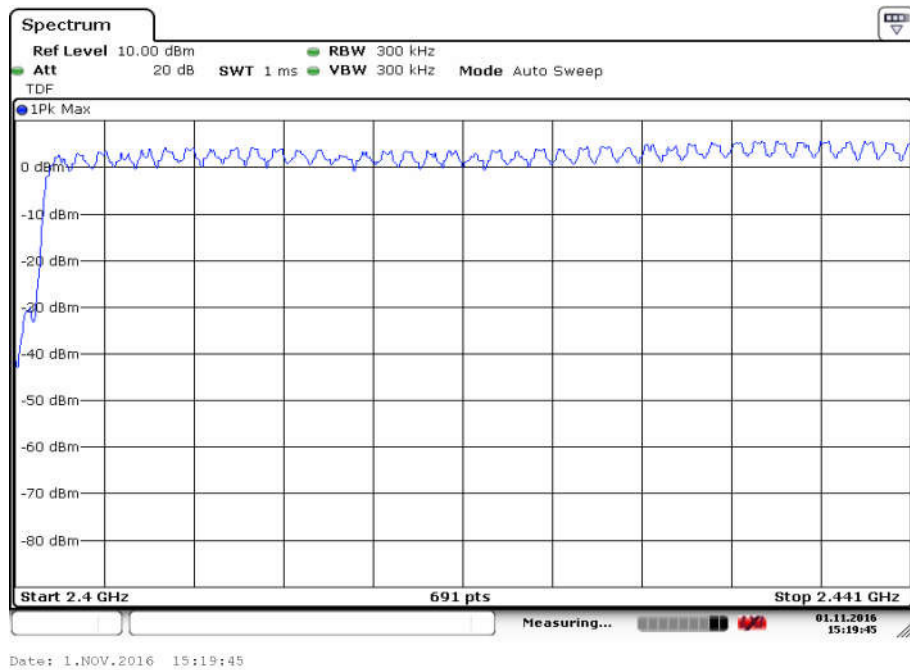


Fig. 100 Hopping channel ch0~39 ($\pi/4$ DQPSK, Ch39)

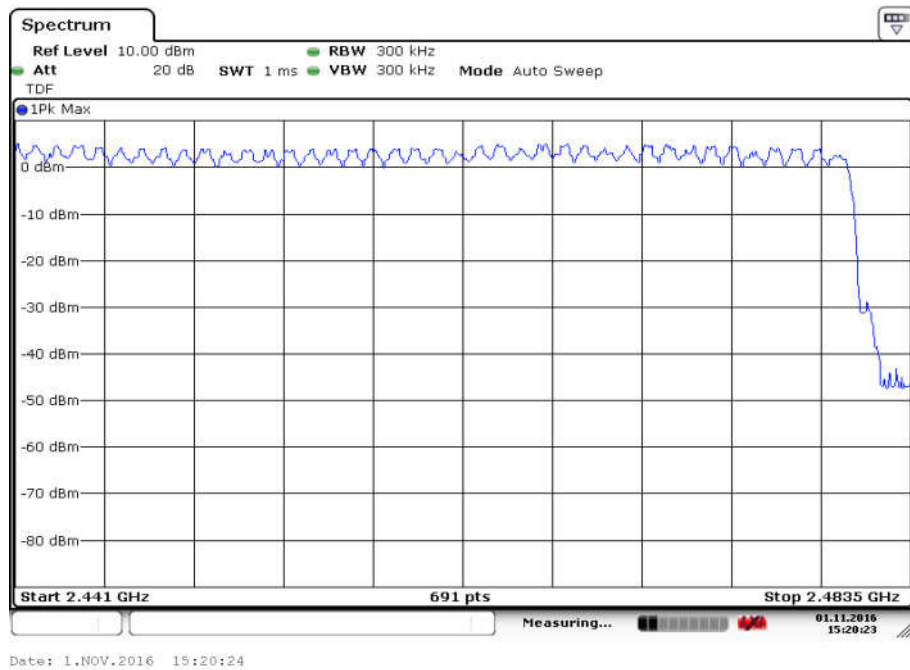


Fig. 101 Hopping channel ch39~78 ($\pi/4$ DQPSK, Ch39)

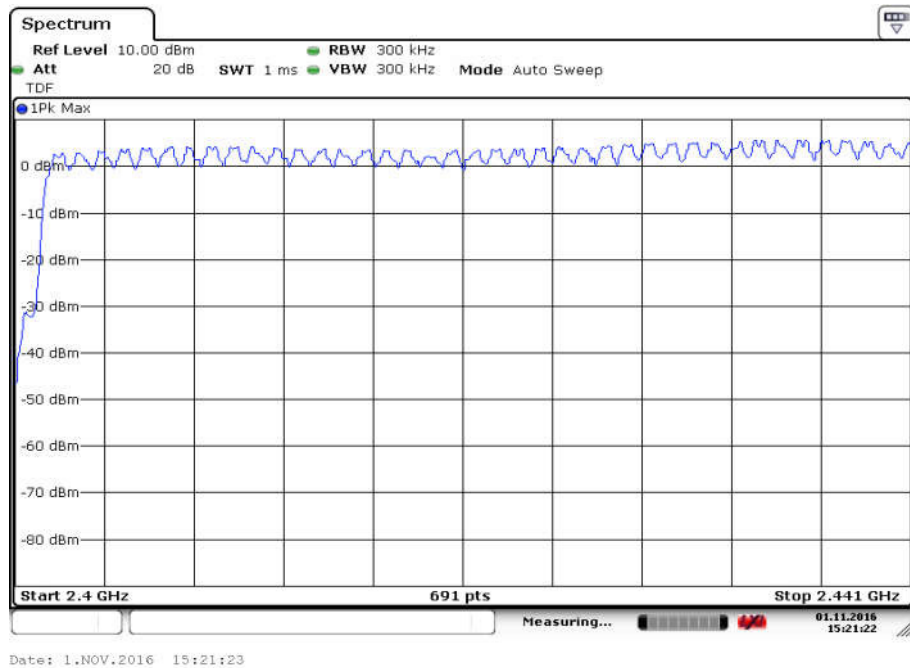
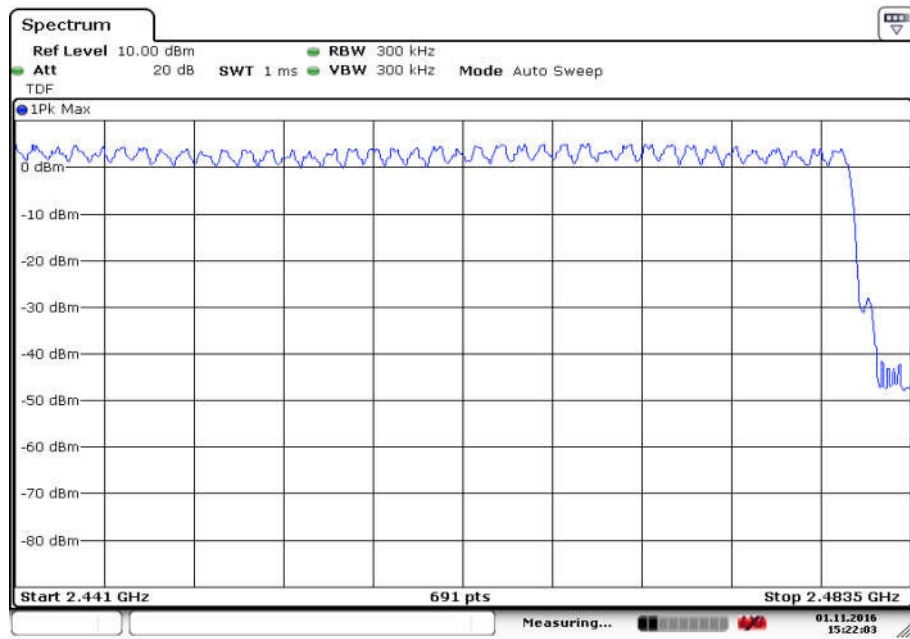
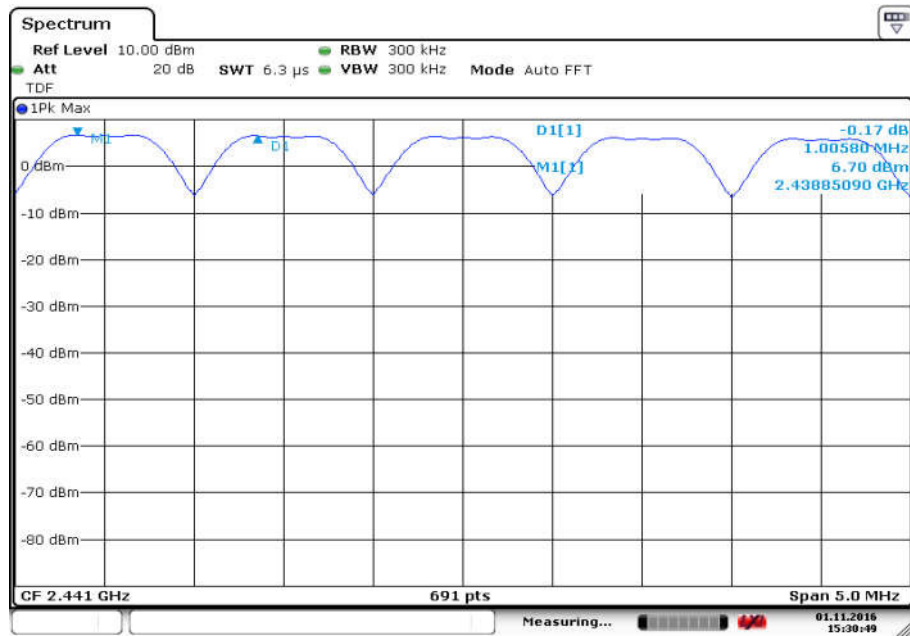


Fig. 102 Hopping channel ch0~39 (8DPSK, Ch39)



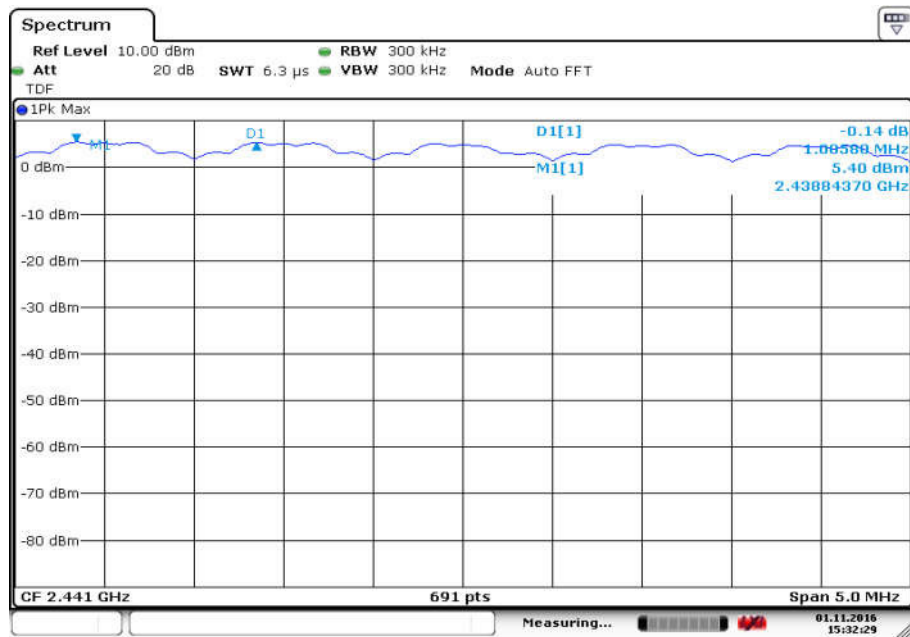
Date: 1.NOV.2016 15:22:04

Fig. 103 Hopping channel ch39~78 (8DPSK, Ch39)



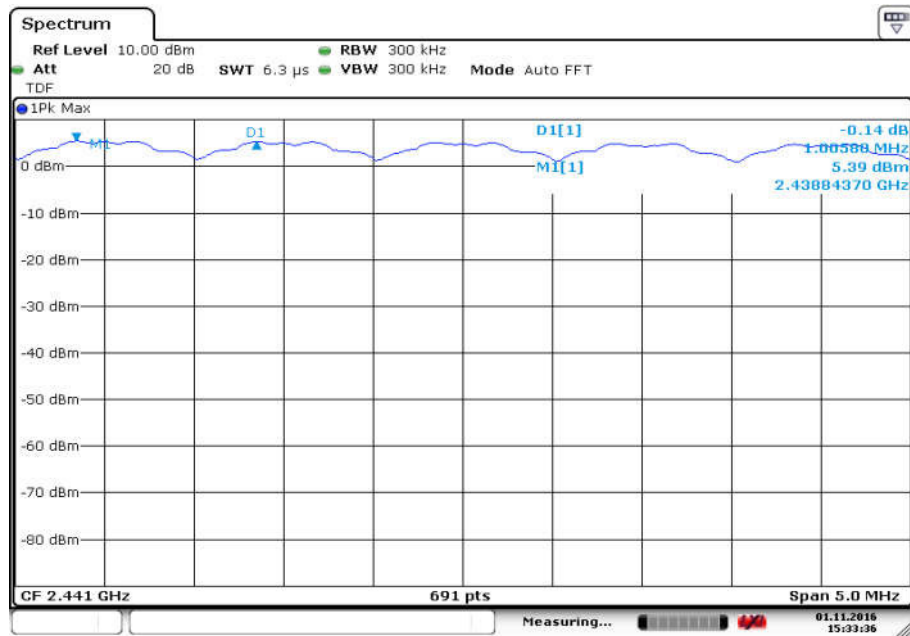
Date: 1.NOV.2016 15:30:49

Fig. 104 Carrier Frequency Separation (GFSK, Ch39)



Date: 1.NOV.2016 15:32:29

Fig. 105 Carrier Frequency Separation ($\pi/4$ DQPSK, Ch39)



Date: 1.NOV.2016 15:33:36

Fig. 106 Carrier Frequency Separation (8DPSK, Ch39)

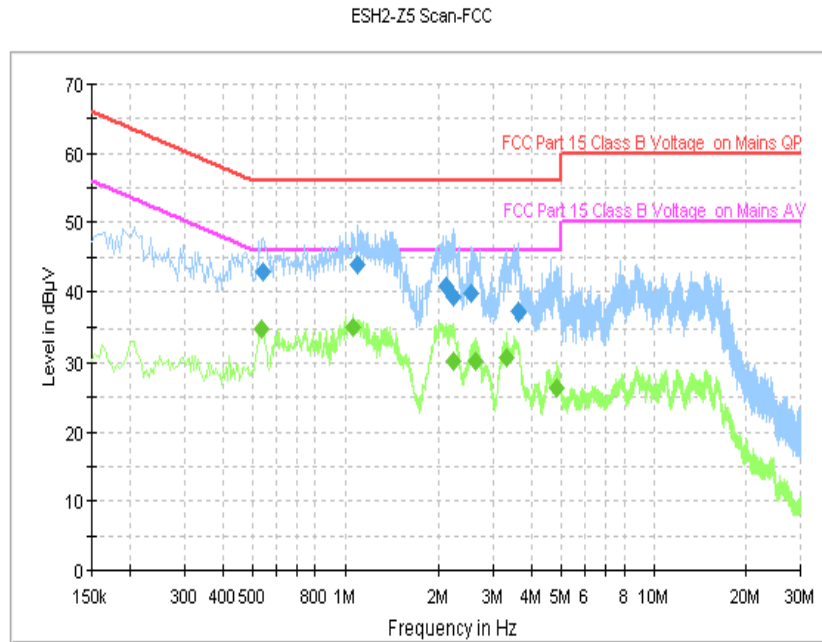


Fig. 107 AC Powerline Conducted Emission (Traffic, AE1)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.542000	43.0	GND	L1	9.8	13.0	56.0
1.094000	44.0	GND	L1	9.8	12.0	56.0
2.118000	40.9	GND	L1	9.8	15.1	56.0
2.230000	39.4	GND	L1	9.8	16.6	56.0
2.558000	39.8	GND	L1	9.8	16.2	56.0
3.610000	37.3	GND	L1	9.8	18.7	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.534000	34.9	GND	N	9.7	11.1	46.0
1.062000	35.1	GND	L1	9.8	10.9	46.0
2.222000	30.2	GND	L1	9.8	15.8	46.0
2.618000	30.3	GND	L1	9.8	15.7	46.0
3.306000	30.6	GND	L1	9.8	15.4	46.0
4.846000	26.3	GND	L1	9.8	19.7	46.0

ESH2-Z5 Scan-FCC

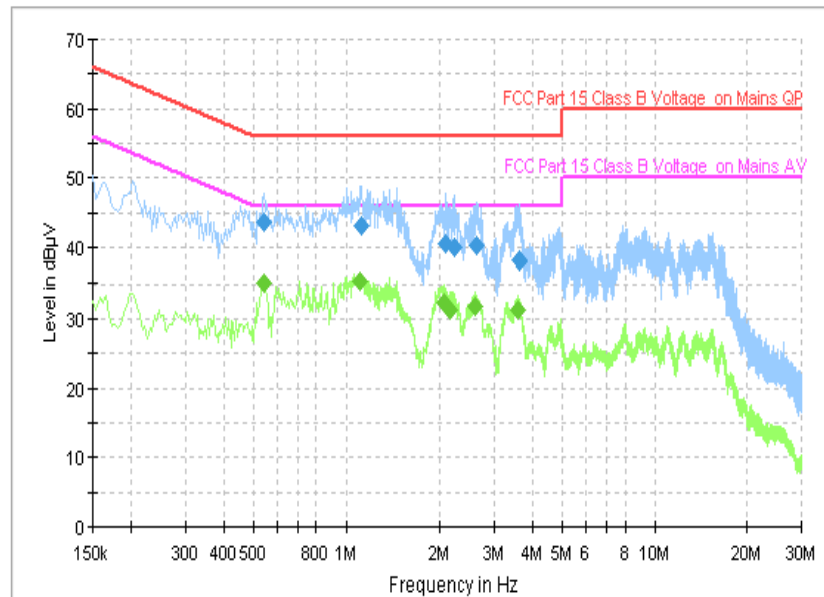


Fig. 108 AC Power line Conducted Emission (Idle, AE1)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.542000	43.7	GND	L1	9.8	12.3	56.0
1.122000	43.3	GND	L1	9.8	12.7	56.0
2.094000	40.6	GND	L1	9.8	15.4	56.0
2.226000	39.9	GND	L1	9.8	16.1	56.0
2.634000	40.4	GND	L1	9.8	15.6	56.0
3.642000	38.3	GND	L1	9.8	17.7	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.542000	35.1	GND	N	9.7	10.9	46.0
1.106000	35.3	GND	L1	9.8	10.7	46.0
2.070000	32.2	GND	L1	9.8	13.8	46.0
2.166000	31.3	GND	L1	9.8	14.7	46.0
2.606000	31.8	GND	L1	9.8	14.2	46.0
3.586000	31.3	GND	L1	9.8	14.7	46.0

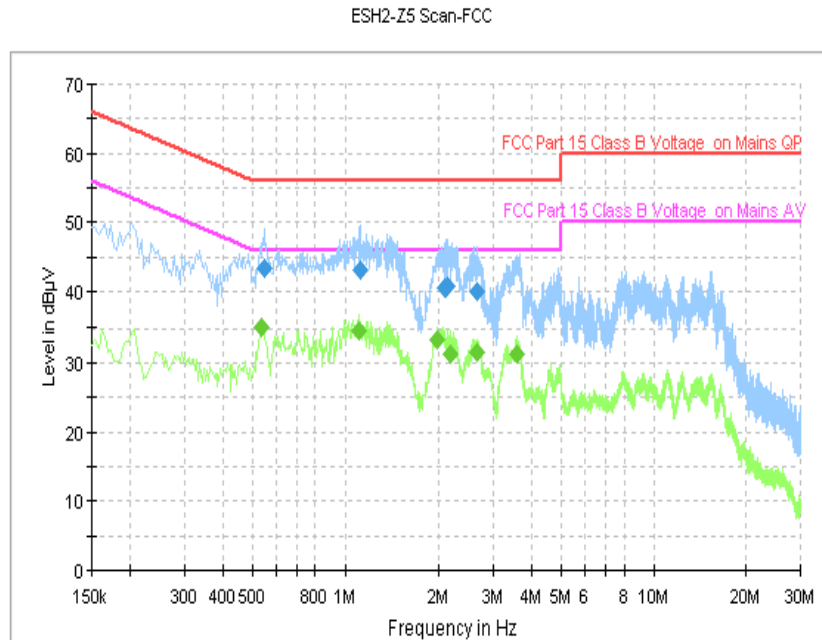


Fig. 109 AC Powerline Conducted Emission (Traffic, AE1)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.546000	43.3	GND	L1	9.8	12.7	56.0
1.122000	43.2	GND	L1	9.8	12.8	56.0
2.078000	40.5	GND	L1	9.8	15.5	56.0
2.102000	40.6	GND	L1	9.8	15.4	56.0
2.130000	40.8	GND	L1	9.8	15.2	56.0
2.650000	40.0	GND	L1	9.8	16.0	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.538000	35.2	GND	N	9.7	10.8	46.0
1.114000	34.7	GND	L1	9.8	11.3	46.0
1.982000	33.2	GND	L1	9.8	12.8	46.0
2.174000	31.4	GND	L1	9.8	14.6	46.0
2.650000	31.5	GND	L1	9.8	14.5	46.0
3.578000	31.3	GND	L1	9.8	14.7	46.0

ESH2-Z5 Scan-FCC

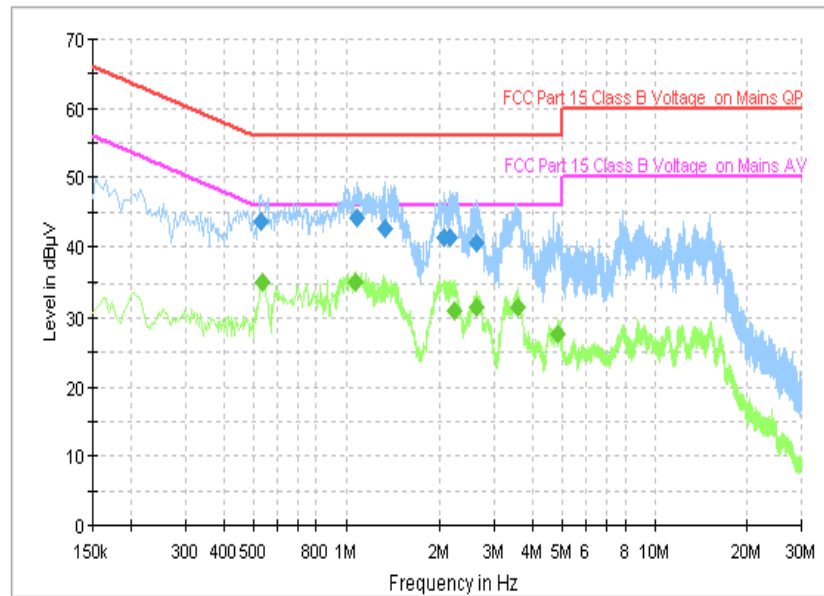


Fig. 110 AC Power line Conducted Emission (Idle, AE1)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.530000	43.7	GND	L1	9.8	12.3	56.0
1.090000	44.1	GND	L1	9.8	11.9	56.0
1.342000	42.7	GND	L1	9.8	13.3	56.0
2.070000	41.2	GND	L1	9.8	14.8	56.0
2.166000	41.3	GND	L1	9.8	14.7	56.0
2.634000	40.5	GND	L1	9.8	15.5	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.534000	35.1	GND	N	9.7	10.9	46.0
1.074000	35.2	GND	L1	9.8	10.8	46.0
2.234000	31.0	GND	L1	9.8	15.0	46.0
2.634000	31.4	GND	L1	9.8	14.6	46.0
3.582000	31.5	GND	L1	9.8	14.5	46.0
4.854000	27.7	GND	L1	9.8	18.3	46.0

ANNEX C: Persons involved in this testing

Test Name	Tester
Maximum Peak Output Power	An Ran, Tang Weisheng
Band Edges Compliance	An Ran, Tang Weisheng
Conducted Spurious Emission	An Ran, Tang Weisheng
Radiated Spurious Emission	An Ran, Tang Weisheng
Occupied 20dB bandwidth	An Ran, Tang Weisheng
Time of Occupancy(Dwell Time)	An Ran, Tang Weisheng
Number of Hopping Channel	An Ran, Tang Weisheng
Carrier Frequency Separation	An Ran, Tang Weisheng
AC Powerline Conducted Emission	An Ran, Tang Weisheng

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