



Registration
No.788871

TEST REPORT FOR RF TESTING

Report No.: SRTC2018-9004(F)-18030601(C)

Product Name: Mobile Phone

Product Model: H1A1000

Applicant: RED Technologies LLC

Manufacturer: RED Technologies LLC

Specification: FCC CFR47 PART 2, 22H, 24E, 27L

FCC ID: 2AOYWH1A1000

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30, Shixing Street, Shijingshan District,

Beijing, P.R.China

Tel: 86-10-57996183 Fax: 86-10-57996388

CONTENTS

1. GENERAL INFORMATION.....	2
1.1 Notes of the test report	2
1.2 Information about the testing laboratory	2
1.3 Applicant's details	2
1.4 Manufacturer's details	2
1.5 Test Environment.....	3
2 DESCRIPTION OF THE EQUIPMENT UNDER TEST	4
2.1 Final Equipment Build Status	4
2.2 Summary table.....	5
2.3 Support Equipment	8
3 REFERENCE SPECIFICATION	9
4 KEY TO NOTES AND RESULT CODES	10
5 RESULT SUMMARY	11
6 TEST RESULT	12
6.1 RF Power Output	12
6.2 Effective Radiated Power.....	13
6.3 Occupied Bandwidth	16
6.4 Emission Bandwidth.....	17
6.5 Peak-Average Ratio.....	18
6.6 Spurious Emissions at antenna terminal	19
6.7 Band Edges Compliance	20
6.8 Frequency Stability	21
6.9 Radiated Spurious Emissions	22
7 MEASUREMENT UNCERTAINTIES.....	25
8 TEST EQUIPMENTS.....	26
APPENDIX A – TEST DATA OF CONDUCTED EMISSION.....	278
APPENDIX B – TEST DATA OF RADIATED EMISSION	572

1. GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).

The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	15th Building, No.30 Shixing Street, Shijingshan District, P.R.China
City:	Beijing
Country or Region:	P.R.China
Contacted person:	liujia
Tel:	+86 10 5799 6183
Fax:	+86 10 5799 6388
Email:	liujiaf@srtc.org.cn

1.3 Applicant's details

Company:	RED Technologies LLC
Address:	34 Parker, Irvine, California, United States
City:	Irvine
Country or Region:	United States
Contacted person:	Doug Kwon
Tel:	9492067900 ext 7794
Fax:	---
Email:	Doug.kwon@Red.com

1.4 Manufacturer's details

Company:	RED Technologies LLC
Address:	34 Parker, Irvine, California, United States
City:	Irvine
Country or Region:	United States
Contacted person:	Doug Kwon
Tel:	9492067900 ext 7794
Fax:	---
Email:	Doug.kwon@Red.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2018.03.06
Testing Start Date:	2018.03.13
Testing End Date:	2018.07.19

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	30
Maximum Extreme	55	---
Minimum Extreme	-10	---

Normal Supply Voltage (V d.c.):	3.85
Maximum Extreme Supply Voltage (V d.c.):	4.30
Minimum Extreme Supply Voltage (V d.c.):	3.65

2 DESCRIPTION OF THE EQUIPMENT UNDER TEST

2.1 Final Equipment Build Status

Frequency Range	LTE Band 2: Tx:1850~1910MHz Rx:1930~1990MHz LTE Band 4: Tx:1710~1755MHz Rx:2110~2155MHz LTE Band 5: Tx:824~849 MHz Rx:869 ~894MHz LTE Band 7: Tx:2500~2570MHz Rx:2620~2690MHz LTE Band 12: Tx:699~716 MHz Rx:729~746 MHz LTE Band 13: Tx:777~787 MHz Rx:746~756 MHz LTE Band 17: Tx:704~716 MHz Rx:734~746 MHz LTE Band 25: Tx:1850~1915 MHz Rx:1930~1995 MHz LTE Band 30: Tx:2305~2315 MHz Rx:2350~2360 MHz LTE Band 38: Tx:2570~2620 MHz Rx:2570~2620 MHz LTE Band 41: Tx:2496~2690 MHz Rx:2496~2690 MHz LTE Band 66: Tx:1710~1780 MHz Rx:2110~2200 MHz
Modulation Type	QPSK 16QAM
Duplex Mode	FDD/TDD
Antenna Type	Fixed Internal
Power Supply	Battery or Charger
HW Version	DVT
SW Version	HiA1000.005ho.01.00.01d.403
IMEI	IMEI1:355929090008401 IMEI2:355929090001919

2.2 Summary table.

FCC Rule Part	Frequency Range(MHz)	EIRP(W)	Frequency Tolerance (ppm)	Emission Designator	Emission Bandwidth (MHz)	Measured 26dBC Bandwidth (MHz)	Communication Type
LTE BAND2							
24E	1850.7-1909.3	0.102	0.014	1M11G7D	1.4M	1.246	QPSK
	1850.7-1909.3	0.091	0.014	1M09D7W	1.4M	1.246	16QAM
	1851.5-1908.5	0.102	0.006	2M75G7D	3M	2.674	QPSK
	1851.5-1908.5	0.091	0.006	2M74D7W	3M	2.674	16QAM
	1852.5-1907.5	0.104	0.006	4M52G7D	5M	4.971	QPSK
	1852.5-1907.5	0.083	0.006	4M52D7W	5M	4.993	16QAM
	1855-1905	0.107	0.005	9M1G7D	10M	9.986	QPSK
	1855-1905	0.095	0.005	9M1D7W	10M	9.986	16QAM
	1857.5-1902.5	0.107	0.006	13M5G7D	15M	14.718	QPSK
	1857.5-1902.5	0.095	0.006	13M5D7W	15M	14.848	16QAM
	1860-1900	0.110	0.006	18M0G7D	20M	19.537	QPSK
	1860-1900	0.100	0.006	18M0D7W	20M	19.363	16QAM
LTE BAND4							
27L	1710.7-1754.3	0.135	0.010	1M11G7D	1.4M	1.240	QPSK
	1710.7-1754.3	0.117	0.010	1M10D7W	1.4M	1.252	16QAM
	1711.5-1753.5	0.132	0.008	2M75G7D	3M	3.774	QPSK
	1711.5-1753.5	0.117	0.008	2M75D7W	3M	3.774	16QAM
	1712.5-1752.5	0.132	0.006	4M54G7D	5M	4.971	QPSK
	1712.5-1752.5	0.110	0.006	4M52D7W	5M	4.993	16QAM
	1715-1750	0.138	0.006	9M1G7D	10M	9.986	QPSK
	1715-1750	0.120	0.006	9M1D7W	10M	9.986	16QAM
	1717.5-1747.5	0.138	0.006	13M5G7D	15M	14.783	QPSK
	1717.5-1747.5	0.126	0.006	13M5D7W	15M	14.718	16QAM
	1720-1745	0.141	0.006	17M9G7D	20M	19.276	QPSK
	1720-1745	0.117	0.006	18M0D7W	20M	19.363	16QAM
LTE BAND5							
22H	824.7-848.3	0.102	-0.031	1M10G7D	1.4M	1.240	QPSK
	824.7-848.3	0.083	-0.031	1M09D7W	1.4M	1.264	16QAM
	825.5-847.5	0.102	-0.007	2M75G7D	3M	2.448	QPSK
	825.5-847.5	0.091	-0.007	2M74D7W	3M	2.448	16QAM
	826.5-846.5	0.102	-0.019	4M52G7D	5M	4.993	QPSK
	826.5-846.5	0.081	-0.019	4M52D7W	5M	4.993	16QAM
	829-844	0.102	-0.009	9M1G7D	10M	9.986	QPSK
	829-844	0.091	-0.009	9M1D7W	10M	9.942	16QAM
LTE BAND7							
27M	2502.5-2567.5	0.275	0.005	4M52G7D	5M	4.971	QPSK
	2502.5-2567.5	0.234	0.005	4M52D7W	5M	4.949	16QAM
	2505-2565	0.282	-0.002	9M0G7D	10M	9.986	QPSK
	2505-2565	0.251	-0.002	9M1D7W	10M	9.986	16QAM
	2507.5-2562.5	0.288	-0.004	13M5G7D	15M	14.783	QPSK
	2507.5-2562.5	0.251	-0.004	13M5D7W	15M	14.718	16QAM
	2510-2560	0.288	0.004	17M9G7D	20M	19.363	QPSK
	2510-2560	0.245	0.004	18M0D7W	20M	19.363	16QAM

LTE BAND12							
27H	699.7-715.3	0.095	-0.031	1M10G7D	1.4M	1.246	QPSK
	699.7-715.3	0.074	-0.031	1M10D7W	1.4M	1.252	16QAM
	700.5-714.5	0.093	-0.008	2M74G7D	3M	2.087	QPSK
	700.5-714.5	0.085	-0.008	2M74D7W	3M	2.087	16QAM
	701.5-713.5	0.095	-0.011	4M52G7D	5M	4.993	QPSK
	701.5-713.5	0.074	-0.011	4M52D7W	5M	4.993	16QAM
	704-711	0.093	-0.008	9M1G7D	10M	9.942	QPSK
	704-711	0.085	-0.008	9M1D7W	10M	9.942	16QAM
LTE BAND13							
27H	779.5-784.5	0.115	-0.008	4M52G7D	5M	4.971	QPSK
	779.5-784.5	0.093	-0.008	4M54D7W	5M	4.971	16QAM
	782	0.107	0.006	9M1G7D	10M	9.986	QPSK
	782	0.098	0.006	9M1D7W	10M	9.986	16QAM
LTE BAND17							
27H	706.5-713.5	0.095	0.012	4M52G7D	5M	4.993	QPSK
	706.5-713.5	0.078	0.012	4M54D7W	5M	4.993	16QAM
	709-711	0.091	0.008	9M1G7D	10M	9.986	QPSK
	709-711	0.083	0.008	9M1D7W	10M	9.986	16QAM
LTE BAND25							
24E	1850.7-1914.3	0.083	-0.009	1M12G7D	1.4M	1.246	QPSK
	1850.7-1914.3	0.068	-0.009	1M10D7W	1.4M	1.246	16QAM
	1851.5-1913.5	0.083	-0.003	2M75G7D	3M	2.287	QPSK
	1851.5-1913.5	0.072	-0.003	2M75D7W	3M	2.287	16QAM
	1852.5-1912.5	0.085	-0.003	4M54G7D	5M	4.971	QPSK
	1852.5-1912.5	0.069	-0.003	4M52D7W	5M	4.971	16QAM
	1855-1910	0.087	-0.005	9M1G7D	10M	9.986	QPSK
	1855-1910	0.078	-0.005	9M1D7W	10M	9.986	16QAM
	1857.5-1907.5	0.085	-0.006	13M5G7D	15M	14.848	QPSK
	1857.5-1907.5	0.076	-0.006	13M5D7W	15M	14.718	16QAM
	1860-1905	0.089	-0.004	18M0G7D	20M	19.537	QPSK
	1860-1905	0.078	-0.004	18M0D7W	20M	19.450	16QAM
LTE BAND30							
27D	2307.5-2312.5	0.347	0.005	4M52G7D	5M	4.993	QPSK
	2307.5-2312.5	0.295	0.005	4M54D7W	5M	4.993	16QAM
	2310	0.347	0.005	9M1G7D	10M	9.942	QPSK
	2310	0.324	0.005	9M1D7W	10M	9.942	16QAM
LTE BAND38							
27M	2572.5-2617.5	0.257	0.003	4M52G7D	5M	4.993	QPSK
	2572.5-2617.5	0.219	0.003	4M52D7W	5M	4.971	16QAM
	2575-2615	0.263	-0.004	9M1G7D	10M	9.855	QPSK
	2575-2615	0.275	-0.004	9M1D7W	10M	9.855	16QAM
	2577.5-2612.5	0.282	-0.004	13M5G7D	15M	14.718	QPSK
	2577.5-2612.5	0.224	-0.004	13M5D7W	15M	14.653	16QAM
	2580-2610	0.263	-0.004	17M9G7D	20M	19.276	QPSK
	2580-2610	0.234	-0.004	18M0D7W	20M	19.363	16QAM

LTE BAND41							
27M	2498.5-2687.5	0.309	0.007	4M52G7D	5M	4.680	QPSK
	2498.5-2687.5	0.245	0.007	4M52D7W	5M	4.680	16QAM
	2501-2685	0.316	0.005	9M1G7D	10M	9.986	QPSK
	2501-2685	0.251	0.005	9M1D7W	10M	9.986	16QAM
	2503.5-2682.5	0.324	0.006	13M5G7D	15M	14.653	QPSK
	2503.5-2682.5	0.263	0.006	13M5D7W	15M	14.653	16QAM
	2506-2680	0.331	0.006	18M0G7D	20M	19.363	QPSK
	2506-2680	0.269	0.006	17M9D7W	20M	19.276	16QAM
LTE BAND66							
27L	1710.7-1779.3	0.129	0.024	1M10G7D	1.4M	1.241	QPSK
	1710.7-1779.3	0.112	0.024	1M10D7W	1.4M	1.233	16QAM
	1711.5-1778.5	0.132	0.012	2M68G7D	3M	2.854	QPSK
	1711.5-1778.5	0.115	0.012	2M68D7W	3M	2.853	16QAM
	1712.5-1777.5	0.132	-0.008	4M46G7D	5M	4.717	QPSK
	1712.5-1777.5	0.117	-0.008	4M47D7W	5M	4.700	16QAM
	1715-1775	0.135	0.006	8M9G7D	10M	9.239	QPSK
	1715-1775	0.112	0.006	8M9D7W	10M	9.252	16QAM
	1717.5-1772.5	0.132	-0.011	13M4G7D	15M	13.730	QPSK
	1717.5-1772.5	0.120	-0.011	13M4D7W	15M	13.810	16QAM
	1720-1770	0.135	0.006	17M9G7D	20M	18.270	QPSK
	1720-1770	0.123	0.006	17M9D7W	20M	18.250	16QAM

2.3 Support Equipment

The following support equipment was used to exercise the EUT during testing:

Equipment	Charger
Manufacturer	TEN PAO INDUSTRIAL CO., LTD
Model Number	REDH1SPTVL
Serial Number	---

Equipment	Battery
Manufacturer	DONGGUAN DRN NEW ENERGY CO.,LTD
Model Number	RED-A2H-4500
Serial Number	---

There are two SIM (SIM1/2) of EUT. The relevant tests have been performed in order to verify in which combination case the EUT would have the worst features. So all the tests shown in this test report are performed when the EUT use SIM 1.



3 REFERENCE SPECIFICATION

The tests documented in this report were performed in accordance with ANSI C63.26:2015, FCC CFR 47 Part 2, FCC KDB 971168 D01 v02r02, KDB 971168 D02 v01, Part 22, Part 24, Part 27.

Specification	Version	Title
ANSI C63.26:2015	11 December 2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
FCC CFR 47 Part 2	2018	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS
FCC CFR 47 Part 22	2018	PUBLIC MOBILE SERVICES
FCC CFR 47 Part 24	2018	PERSONAL COMMUNICATIONS SERVICES
FCC CFR 47 Part 27	2018	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES
KDB 971168 D01	v03r01	MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS
KDB 971168 D02	v02r01	MISCELLANEOUS AND BASIC REVIEW AND APPROVAL ITEMS FOR TRANSMITTING EQUIPMENT USED IN LICENSED RADIO SERVICES
ANSI C63.26	2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
KDB 971168 D01	April 9, 2018	MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS



4 KEY TO NOTES AND RESULT CODES

The following are the definition of the test result.

Code	Meaning
PASS	Test result shows that the requirements of the relevant specification have been met.
FAIL	Test result shows that the requirements of the relevant specification have not been met.
N/T	Test case is not tested.
NTNV	Nominal voltage, Normal Temperature
HV	High voltage, Normal Temperature
LV	Low voltage, Normal Temperature
HTHV	high voltage, High Temperature
LTHV	High voltage, Low Temperature
HTLV	Low voltage, High Temperature
LTLV	Low voltage, Low Temperature



5 RESULT SUMMARY

The following table summarizes the test results obtained.

No.	Test case	FCC reference	Verdict
1	RF Power Output	2.1046	Pass
2	Effective Radiated Power and Effective Isotropic Radiated Power	22.913, 24.232, 27.50	Pass
3	Occupied Bandwidth	2.1049	Pass
4	Peak-Average Ratio	22.913, 24.232, 27.50	Pass
5	Emission Bandwidth	2.1049	Pass
6	Spurious Emissions at antenna terminals	2.1051, 22.901, 22.917, 24.238, 27.53	Pass
7	Band Edges Compliance	2.1051, 22.359, 22.917, 24.238, 27.53	Pass
8	Frequency Stability	2.1055, 22.355, 24.235, 27.54	Pass
9	Radiated Spurious Emissions	2.1053, 22.917, 24.238, 27.53	Pass

This Test Report Is Issued by: Mr. Peng Zhen	Checked by: Mr. Li Bin
Tested by: Mr. Chang Taosha	Issued date: 20180719

6 TEST RESULT

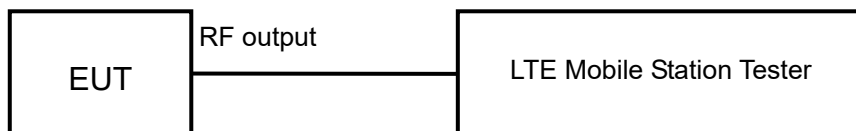
6.1 RF Power Output

Rule Part(s)
FCC: 2.1046

Ambient condition:

Temperature	Relative humidity	Pressure
23°C	42%	101.9kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. Then the test data can be read at the tester screen. The loss between RF output port of the EUT and the input port of the tester will be taken into consideration.

Limits	≤30dBm
--------	--------

6.2 Effective Radiated Power

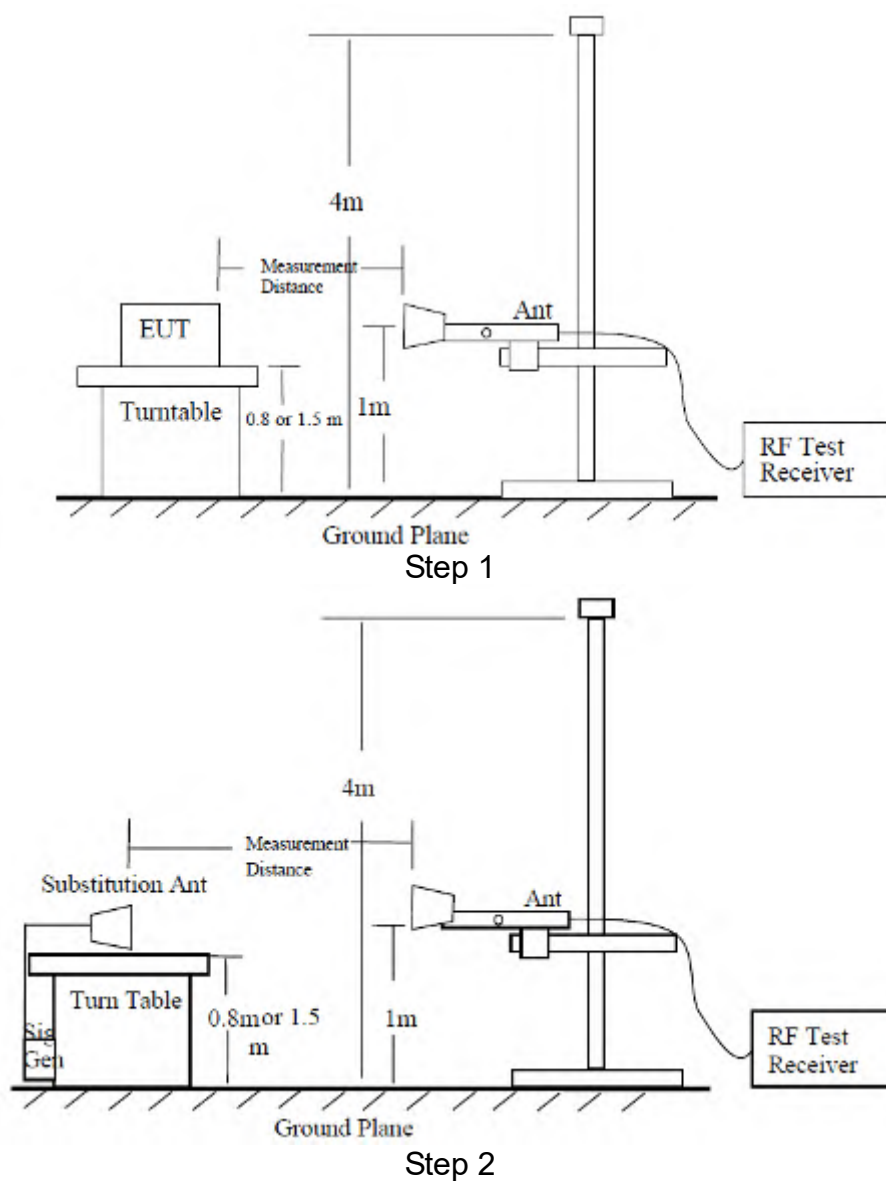
Rule Part(s)

FCC: 22.913, 24.232, 27.50

Ambient condition:

Temperature	Relative humidity	Pressure
20.8°C	36.5%	100.9kPa

Test setup:





Test procedure:

The measurements procedures in TIA-603C-2004 are used.

Step 1:

The measurement is carried out in the fully anechoic chamber. EUT was placed on a 2.4 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The height of receiving antenna is 2.4m and varies in certain range to find the maximum power value. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used and RBW is set to 3MHz. Then the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum power value on spectrum analyzer or receiver. And the maximum value of the receiver should be recorded as (Pr).

Step 2:

A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator. To repeat the same procedure as step1 and the level of signal generator will be adjusted till the same power value on the spectrum analyzer or receiver. The ERP/EIRP of the EUT can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

A power (P_{mea}) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (P_{mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

A "reference path loss" should be calculated after test. The attenuation of "reference path loss" is the cable loss between the Signal Source with the Substitution Antenna (P_{ca}) and the Substitution Antenna Gain (G_a).

The measurement results are obtained as described below:

$$\text{Power (EIRP)} = P_{\text{mea}} + P_{\text{ca}} + G_a$$

ERP/EIRP LIMIT

This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $\text{ERP} = \text{EIRP} - 2.15 \text{ (dB)}$.

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.

27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.



27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP

27.50 (h) The following power limits shall apply in the BRS and EBS: (2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

Antenna height (ATT) meters (feet)	Effective radiated power (watts) ^{1 2 4}
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	³ 1,000

1Power is given in terms of effective radiated power (ERP).

2Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.

3Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).

4Licensees in San Diego, CA, will be permitted to utilize an ERP of 500 watts at the following mountaintop sites: Palomar, Otay, Woodson and Miguel.

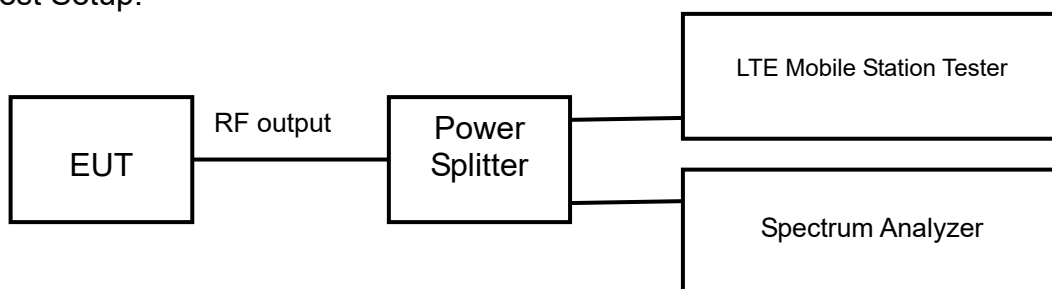
6.3 Occupied Bandwidth

Rule Part(s)
FCC: 2.1049

Ambient condition:

Temperature	Relative humidity	Pressure
23°C	42%	101.9kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The occupied bandwidth is measured using spectrum analyzer. RBW is set to 30kHz on spectrum analyzer. The bandwidth of 99% power can be read on spectrum analyzer.

The measurement will be conducted at three channels (Bottom, middle and top channels of LTE band)

Limits: No specific occupied bandwidth requirements in part 2.1049

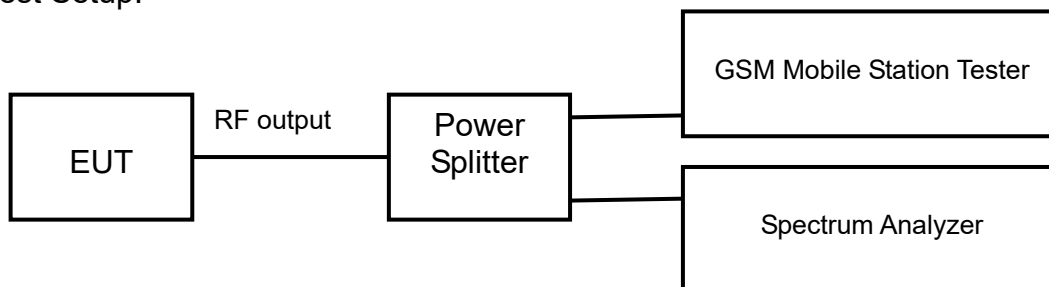
6.4 Emission Bandwidth

Rule Part(s)
FCC: 2.1049

Ambient condition:

Temperature	Relative humidity	Pressure
23°C	42%	101.9kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The emission bandwidth is measured using spectrum analyzer. RBW is set to 3 kHz on spectrum analyzer. The bandwidth of -26dB transmitter power can be read on spectrum analyzer.

Limits: No specific emission bandwidth requirements in part 22.917(b)

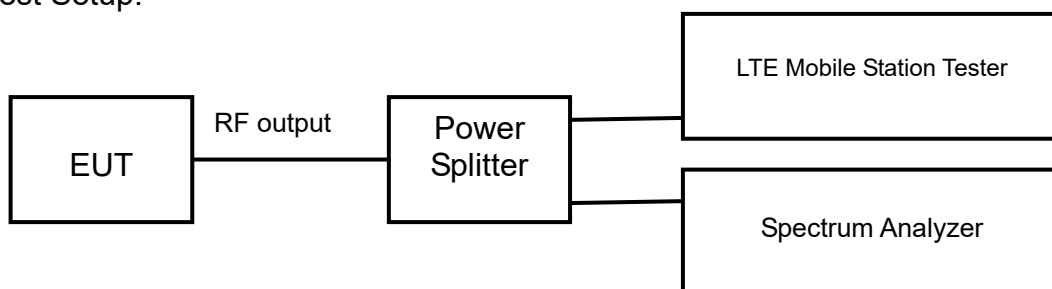
6.5 Peak-Average Ratio

Rule Part(s)
FCC: 22.913, 24.232, 27.50

Ambient condition:

Temperature	Relative humidity	Pressure
23°C	42%	101.9kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The Peak-Average Ratio is measured using spectrum analyzer. RBW is set to 30 kHz on spectrum analyzer. The Peak-Average Ratio can be read on spectrum analyzer.

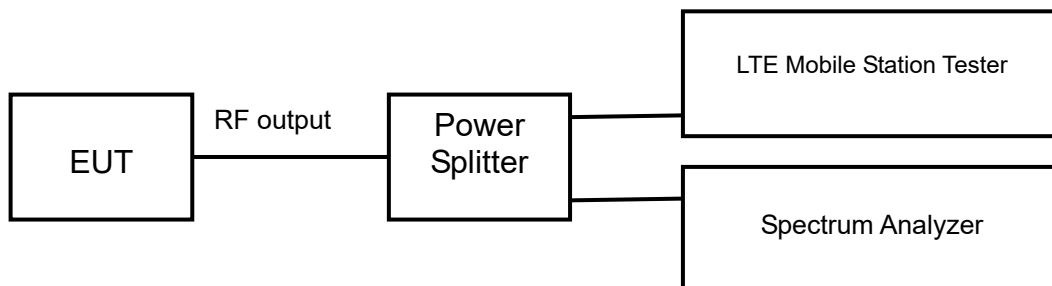
Limits	≤13dB
--------	-------

6.6 Spurious Emissions at antenna terminal

Ambient condition:

Temperature	Relative humidity	Pressure
23°C	42%	101.9kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to 20GHz (higher than the 10th harmonic of the carrier). The peak detector is used and RBW is set to 1MHz on spectrum analyzer.

Limits	$\leq -13\text{dBm}$
--------	----------------------

6.7 Band Edges Compliance

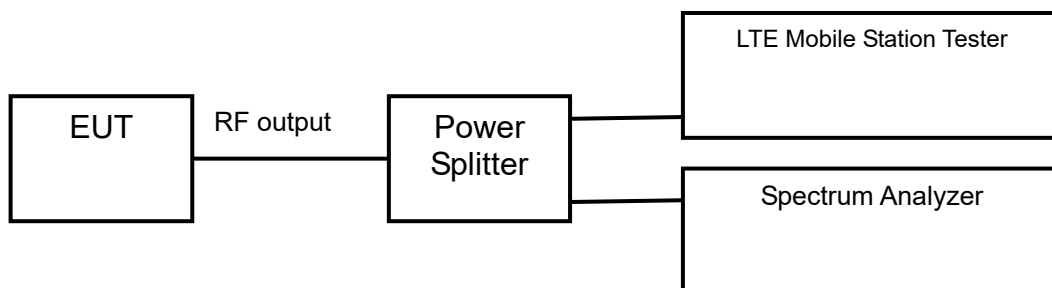
Rule Part(s)

FCC: 2.1051, 22.359, 22.917, 24.238, 27.53

Ambient condition:

Temperature	Relative humidity	Pressure
23°C	42%	101.9kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer. The peak detector is used and RBW is set to at least 1% of the emission bandwidth on spectrum analyzer.

Limits	$\leq -13\text{dBm}$
--------	----------------------

6.8 Frequency Stability

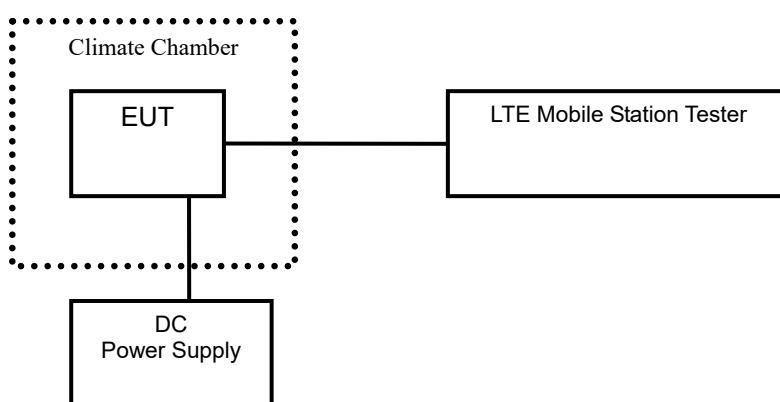
Rule Part(s)

FCC: 2.1055, 22.355, 24.235, 27.54

Ambient condition:

Temperature	Relative humidity	Pressure
23°C	42%	101.9kPa

Test setup:



Test Procedure:

A radio link shall be established between EUT and Tester. The tester will sample the transmitter RF output signal and measure its frequency. The temperature inside the climate chamber is varied from -30 to +50°C in 10°C step size, and also the DC power supply voltage to the EUT is varied from LV to HV. The measurement will be conducted at three channels No18100, No18300 and No18500 (Bottom, middle and top channels of LTE band I).

Limits: No specific frequency stability requirements in part 2.1055 and part 22.355.

6.9 Radiated Spurious Emissions

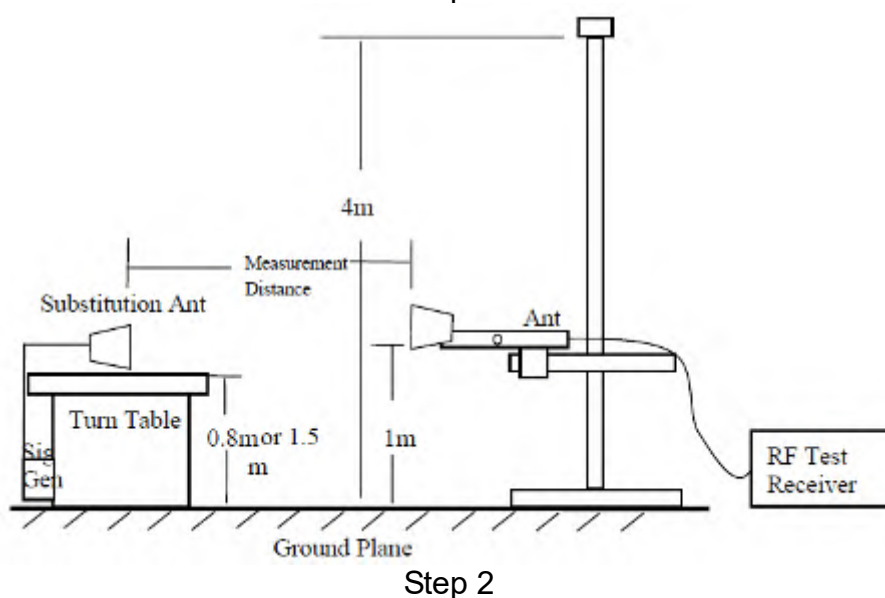
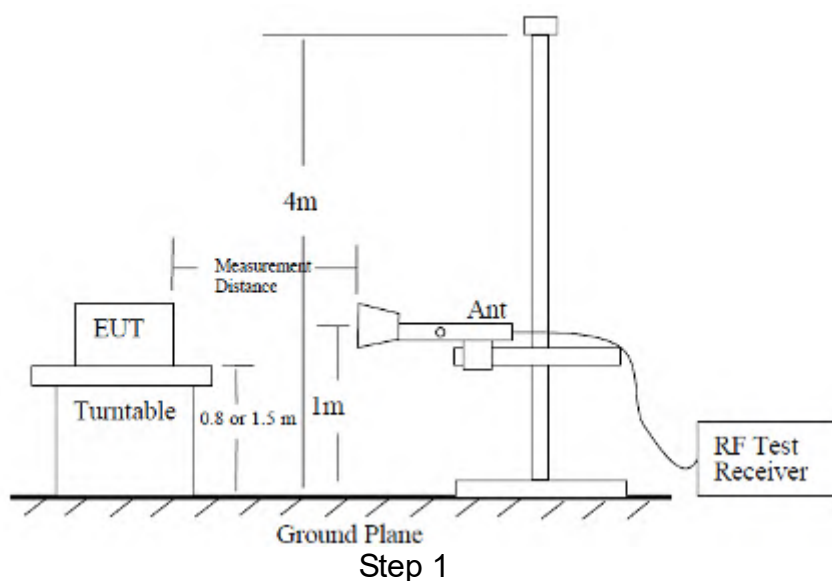
Rule Part(s)

FCC: 2.1053, 22.917, 24.238, 27.53

Ambient condition:

Temperature	Relative humidity	Pressure
20.8°C	36.5%	100.9kPa

Test Setup:



Test procedure:

The measurements procedures in TIA-603C-2004 are used.

The spectrum was scanned from 30MHz to the 10th harmonic of the highest frequency generated within the equipment.

Step 1:

The measurement is carried out in the fully anechoic chamber. EUT was placed on a 2.4 meter high non-conductive table at a 3 meter test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The height of receiving antenna is 2.4m and varies in certain range to find the maximum power value. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer or receiver. The spectrum analyzer scans from 30MHz to 20GHz (higher than the 10th harmonic of the carrier). The peak detector is used and RBW is set to 1MHz on spectrum analyzer. Then the antenna height and turn table rotation is adjusted till the maximum power value is founded on spectrum analyzer or receiver. A notch filter is necessary in the band near to the carrier frequency. A high pass filter is needed to avoid the distortion of the testing equipment in the band above the carrier frequency.

Step 2:

A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

A power (P_{mea}) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

A "reference path loss" should be calculated after test. The attenuation of "reference path loss" is the cable loss between the Signal Source with the Substitution Antenna (P_{ca}) and the Substitution Antenna Gain (G_a).

Calculation procedure:

The data of cable loss and antenna gain has been calibrated in full testing frequency range before the testing.

The power of the Radiated Spurious Emissions is calculated by adding the cable loss and antenna gain. The basic equation with a sample calculation is as followed:

$$\text{Power(EIRP)} = P_{mea} + P_{ca} + G_a$$

This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $ERP = EIRP - 2.15 \text{ (dB)}$.



Assumed the power of signal source record is -20dBm. A cable loss of -30dB, and an antenna gain of 11dB are added.

$$P=P_{mea}+P_{ca}+G_a=(-20\text{dBm})+(-30\text{dB})+(11\text{dB})=-39\text{dBm}$$



7 MEASUREMENT UNCERTAINTIES

Items	Uncertainty	
RF Power Output	0.6 dB	
Occupied Bandwidth	3 kHz	
Spurious Emissions	30MHz~1GHz	2.83 dB
	1GHz~12.75GHz	2.50 dB
	12.75GHz~25GHz	2.75 dB
Band Edges Compliance	1.2dB	
Frequency Stability	4 Hz	

8 TEST EQUIPMENTS

No.	Name/Model	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
1	Mobile Station Tester	SP8010B	E0095	2018.03.01	2019.02.28
2	N9020A Spectrum Analyzer	Agilent	MY48010771	2017.08.20	2018.08.19
3	DC Power Supply E3645A	Agilent	MY43007648	2017.08.20	2018.08.19
4	Power Splitter 11850C	Agilent	19632	2017.08.20	2018.08.19
5	Temperature chamber SH241	ESPEC	92013758	2017.08.20	2018.08.19
6	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA	-----	-----	-----
7	Turn table Diameter:1m	HD	-----	-----	-----
8	Antenna master FAC(MA4.0)	MATURO	-----	-----	-----
9	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	2017.08.20	2018.08.19
10	HL562 Ultra log antenna	R&S	100016	2017.08.20	2018.08.19
11	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2017.08.20	2018.08.19
12	ESI 40 EMI test receiver	R&S	100015	2017.08.20	2018.08.19
13	Radio tester	CMU 200	114667	2017.08.20	2018.08.19
14	Spectrum Analyzer	FSV40	101065	2017.08.20	2018.08.19
15	Mobile Station Tester MT8820C	Anritsu	6201300660	2017.08.20	2018.08.19



APPENDIX A – TEST DATA OF CONDUCTED EMISSION

Please refer to the attachment.

APPENDIX B – TEST DATA OF RADIATED EMISSION

Please refer to the attachment.

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

LTE Band 2

1 RF Power Output

Test result:

Antenna Gain: -0.61dBi

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1850.7	18607	1.4	1	0	19.6	19.0
				1	5	20.6	20.0
				3	2	20.6	20.0
				6	0	19.5	18.9
	1880	18900		1	0	20.5	19.9
				1	5	20.6	20.0
				3	2	20.6	20.0
				6	0	19.6	19.0
	1909.3	19193		1	0	20.6	20.0
				1	5	20.6	20.0
				3	2	20.7	20.1
				6	0	19.7	19.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1850.7	18607	1.4	1	0	19.6	19.0
				1	5	19.7	19.1
				3	2	19.8	19.2
				6	0	18.6	18.0
	1880	18900		1	0	19.7	19.1
				1	5	19.7	19.1
				3	2	19.5	18.9
				6	0	18.7	18.1
	1909.3	19193		1	0	19.7	19.1
				1	5	19.8	19.2
				3	2	19.7	19.1
				6	0	19.6	19.0

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1851.5	18615	3	1	0	20.7	20.1
				1	14	20.6	20.0
				8	4	19.6	19.0
				15	0	19.6	19.0
	1880	18900		1	0	20.6	20.0
				1	14	20.7	20.1
				8	4	19.7	19.1
				15	0	19.7	19.1
	1908.5	19185		1	0	20.7	20.1
				1	14	20.7	20.1
				8	4	19.7	19.1
				15	0	19.7	19.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1851.5	18615	3	1	0	20.2	19.6
				1	14	20.2	19.6
				8	4	18.9	18.3
				15	0	18.7	18.1
	1880	18900		1	0	19.9	19.3
				1	14	19.8	19.2
				8	4	18.6	18.0
				15	0	18.6	18.0
	1908.5	19185		1	0	19.9	19.3
				1	14	19.8	19.2
				8	4	18.8	18.2
				15	0	18.7	18.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1852.5	18625	5	1	0	20.8	20.2
				1	24	20.7	20.1
				12	6	19.7	19.1
				25	0	19.6	19.0
	1880	18900		1	0	20.6	20.0
				1	24	20.7	20.1
				12	6	19.7	19.1
				25	0	19.7	19.1
	1907.5	19175		1	0	20.7	20.1
				1	24	20.7	20.1
				12	6	19.7	19.1
				25	0	19.7	19.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1852.5	18625	5	1	0	19.7	19.1
				1	24	19.7	19.1
				12	6	18.7	18.1
				25	0	18.7	18.1
	1880	18900		1	0	20.0	19.4
				1	24	19.9	19.3
				12	6	18.8	18.2
				25	0	18.7	18.1
	1907.5	19175		1	0	19.8	19.2
				1	24	19.8	19.2
				12	6	18.7	18.1
				25	0	18.7	18.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1855	18650	10	1	0	20.9	20.3
				1	49	20.9	20.3
				24	12	19.7	19.1
				50	0	19.6	19.0
	1880	18900		1	0	20.8	20.2
				1	49	20.9	20.3
				24	12	19.7	19.1
				50	0	19.7	19.1
	1905	19150		1	0	20.8	20.2
				1	49	20.7	20.1
				24	12	19.7	19.1
				50	0	19.7	19.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1855	18650	10	1	0	20.4	19.8
				1	49	20.4	19.8
				24	12	18.7	18.1
				50	0	18.7	18.1
	1880	18900		1	0	20.1	19.5
				1	49	20.1	19.5
				24	12	18.7	18.1
				50	0	18.7	18.1
	1905	19150		1	0	19.8	19.2
				1	49	19.8	19.2
				24	12	18.7	18.1
				50	0	18.8	18.2

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1857.5	18675	15	1	0	20.8	20.2
				1	74	20.7	20.1
				40	18	19.7	19.1
				75	0	19.7	19.1
	1880	18900		1	0	20.8	20.2
				1	74	20.6	20.0
				40	18	19.7	19.1
				75	0	19.7	19.1
	1902.5	19125		1	0	20.9	20.3
				1	74	20.7	20.1
				40	18	19.7	19.1
				75	0	19.7	19.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1857.5	18675	15	1	0	20.4	19.8
				1	74	20.3	19.7
				40	18	18.7	18.1
				75	0	18.7	18.1
	1880	18900		1	0	20.0	19.4
				1	74	19.7	19.1
				40	18	18.8	18.2
				75	0	18.8	18.2
	1902.5	19125		1	0	20.4	19.8
				1	74	20.2	19.6
				40	18	18.7	18.1
				75	0	18.8	18.2

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1860	18700	20	1	0	21.0	20.4
				1	99	20.8	20.2
				50	25	19.8	19.2
				100	0	19.8	19.2
	1880	18900		1	0	21.0	20.4
				1	99	20.8	20.2
				50	25	19.6	19.0
				100	0	19.7	19.1
	1900	19100		1	0	21.0	20.4
				1	99	20.6	20.0
				50	25	19.7	19.1
				100	0	19.8	19.2

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1860	18700	20	1	0	20.3	19.7
				1	99	20.1	19.5
				50	25	18.8	18.2
				100	0	18.8	18.2
	1880	18900		1	0	20.3	19.7
				1	99	20.0	19.4
				50	25	18.7	18.1
				100	0	18.8	18.2
	1900	19100		1	0	20.6	20.0
				1	99	20.3	19.7
				50	25	18.8	18.2
				100	0	18.8	18.2

2 Occupied Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1850.7	18607	1.4	6	0	1.094	Fig.1	1.088	Fig.2

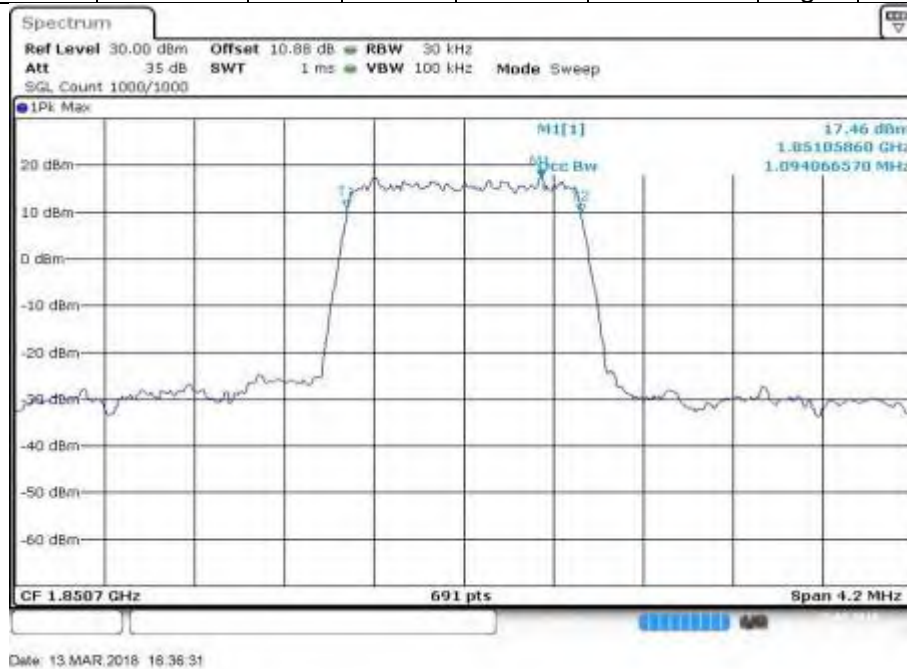


Fig.1

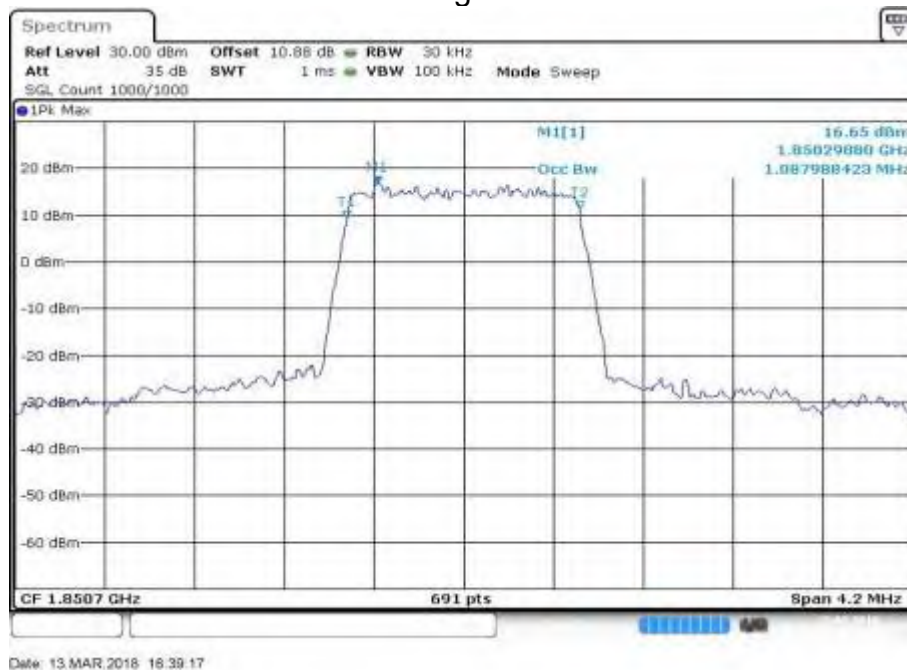


Fig.2

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1880	18900	1.4	6	0	1.094	Fig.4	1.094	Fig.8

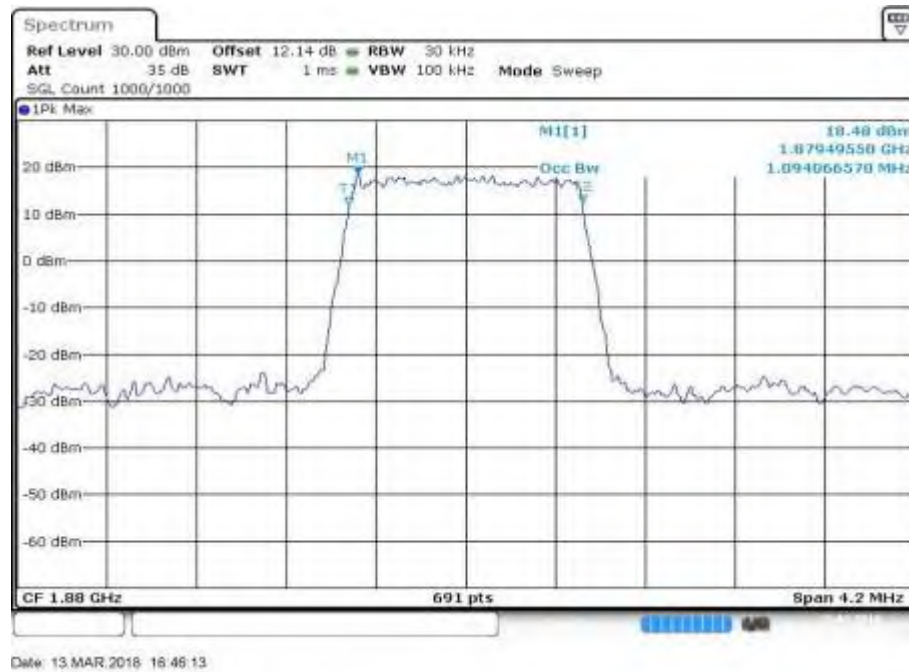


Fig.1

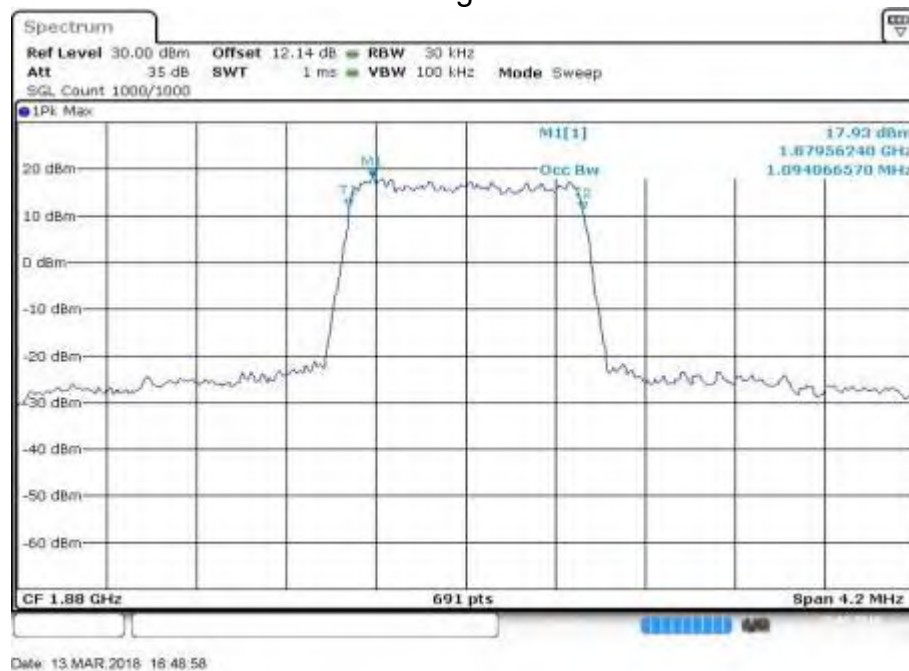


Fig.2

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1909.3	19193	1.4	6	0	1.106	Fig.4	1.094	Fig.8

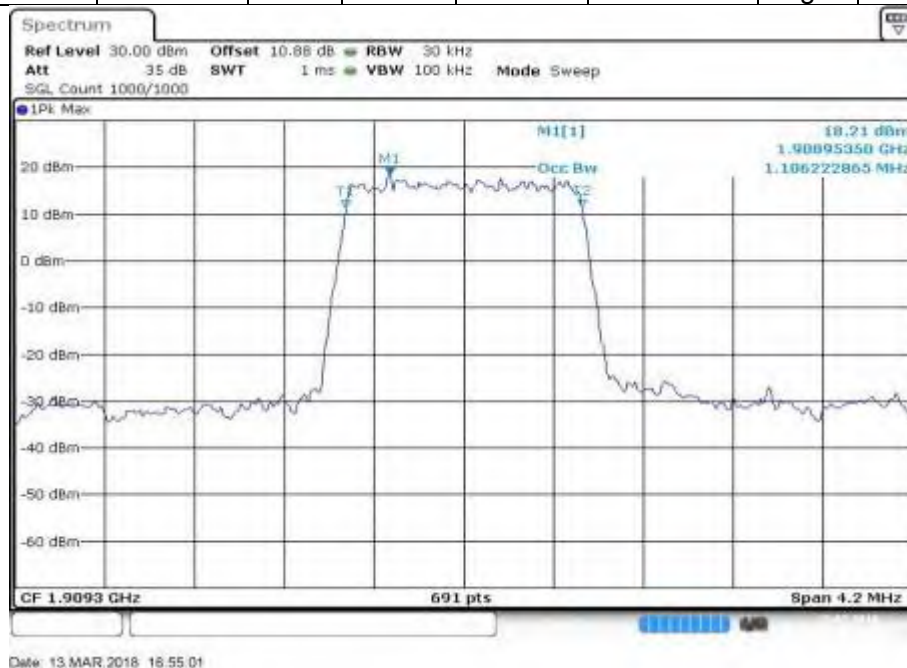


Fig.4

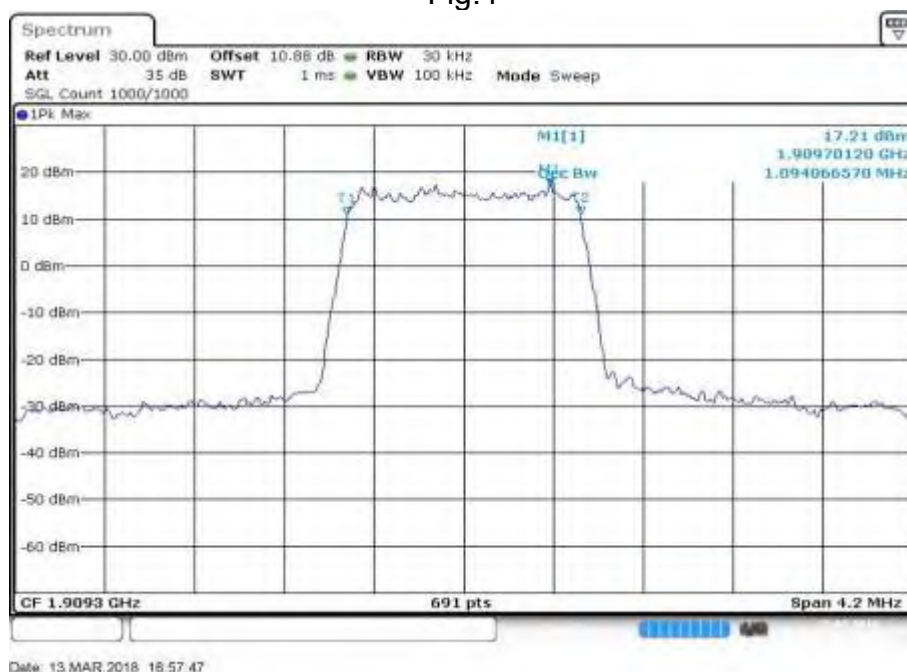


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1851.5	18615	3	15	0	2.735	Fig.4	2.735	Fig.8

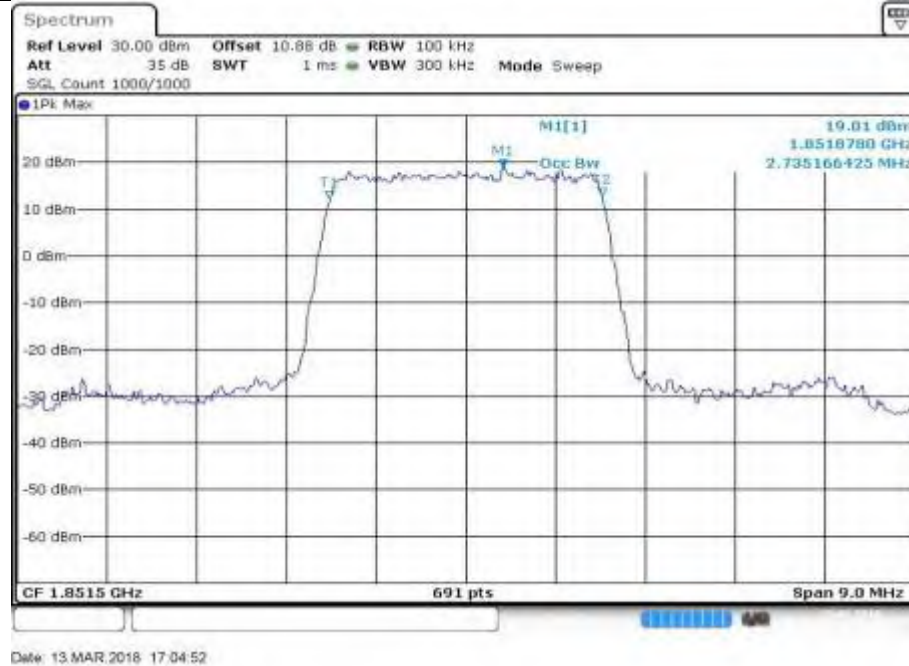


Fig.4

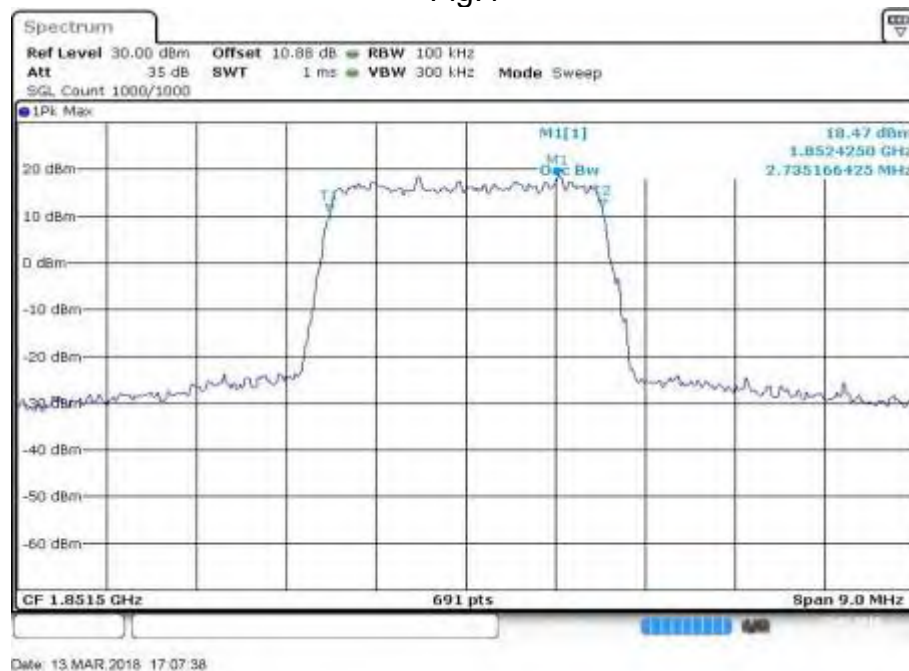


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1880	18900	3	15	0	2.748	Fig.4	2.735	Fig.8

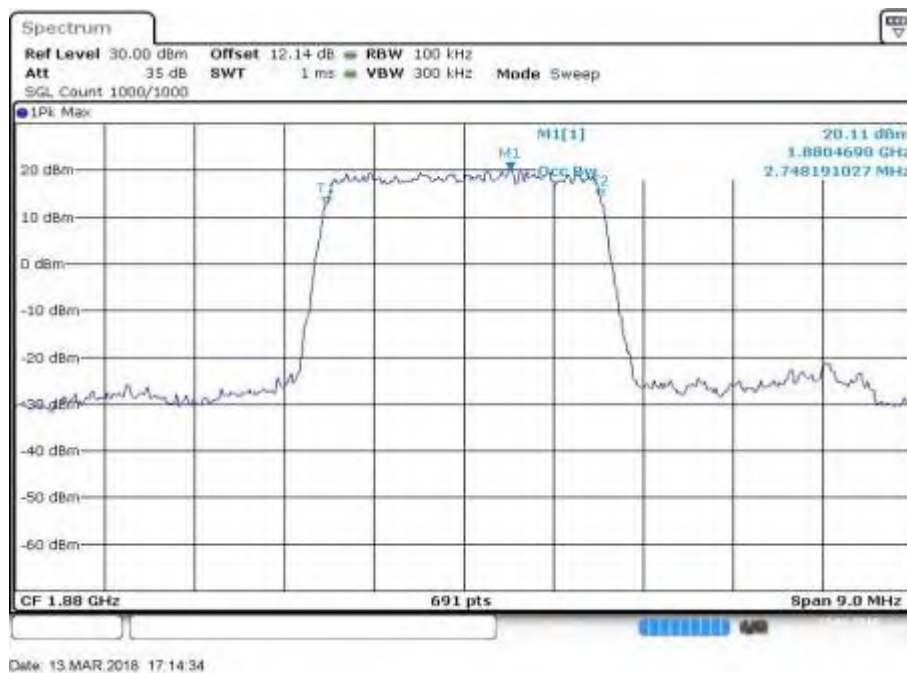


Fig.4

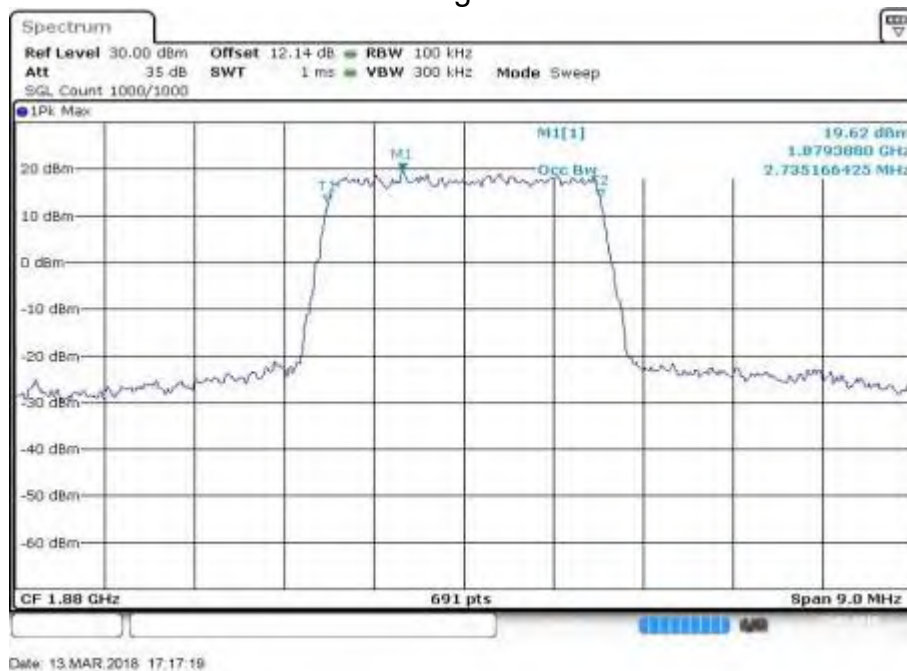


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1908.5	19185	3	15	0	2.748	Fig.4	2.735	Fig.8

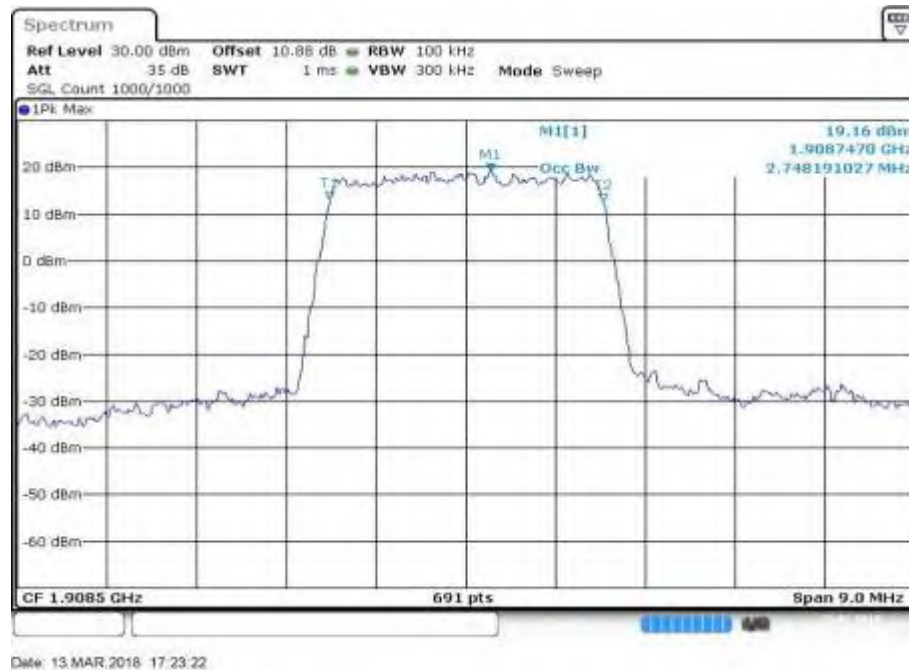


Fig.4

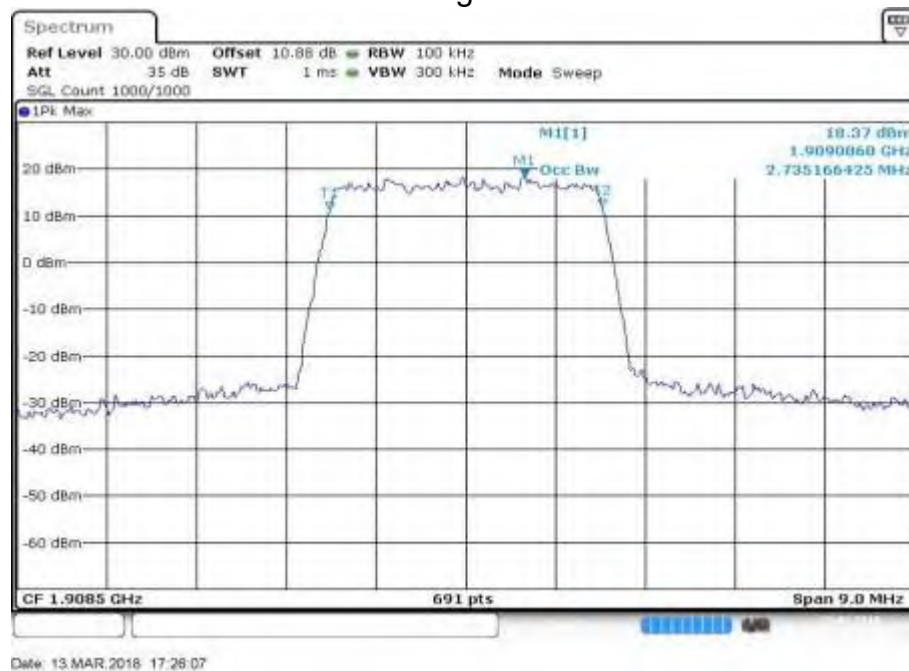


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1852.5	18625	5	25	0	4.515	Fig.4	4.515	Fig.8

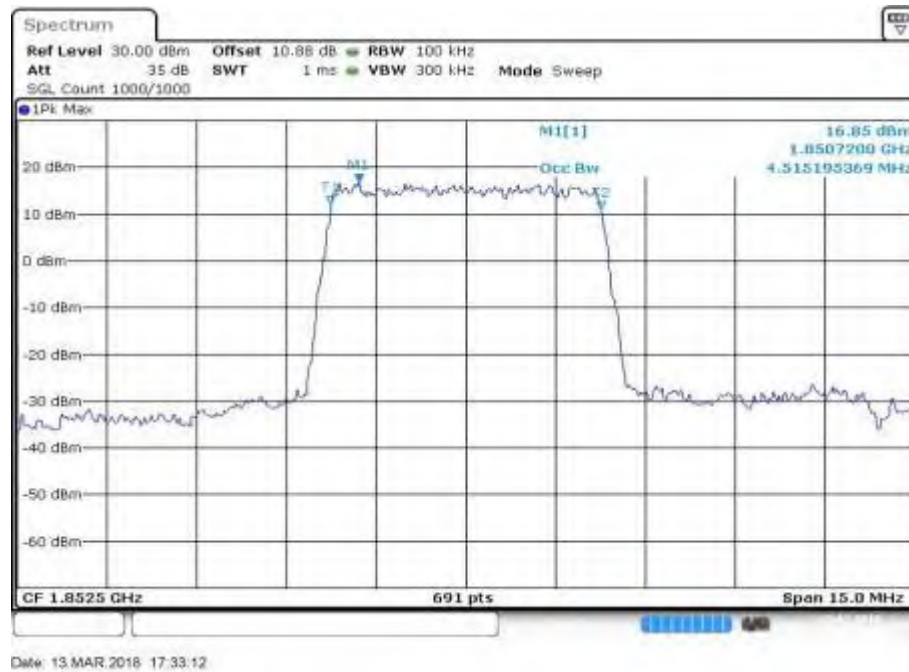


Fig.4

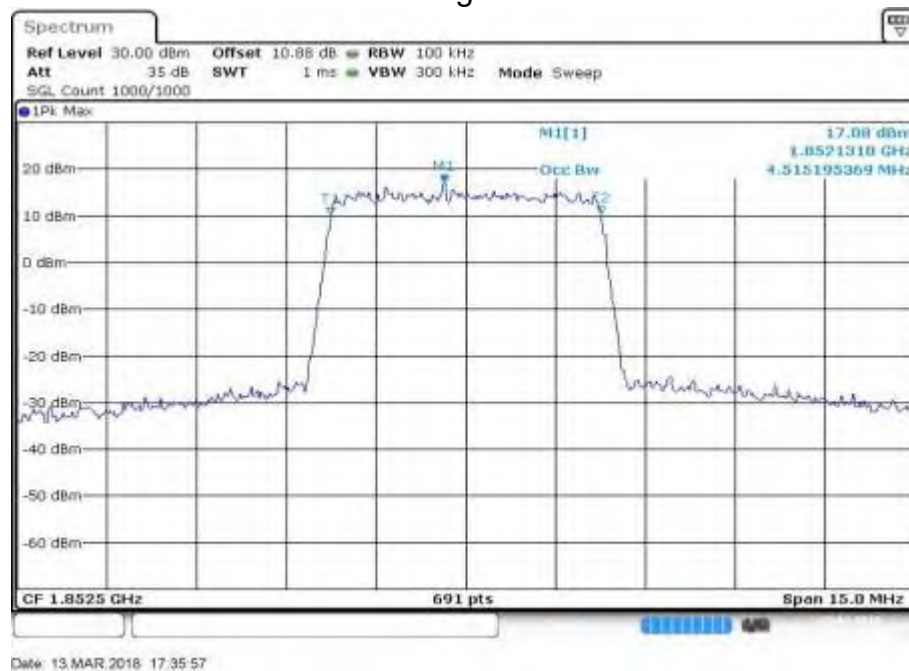


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1880	18900	5	25	0	4.515	Fig.4	4.515	Fig.8

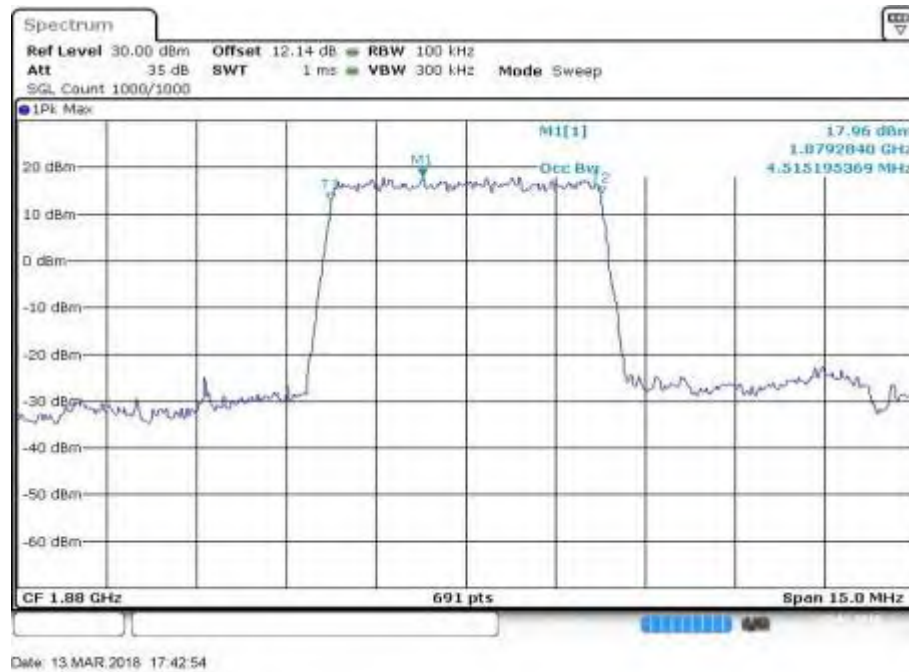


Fig.4

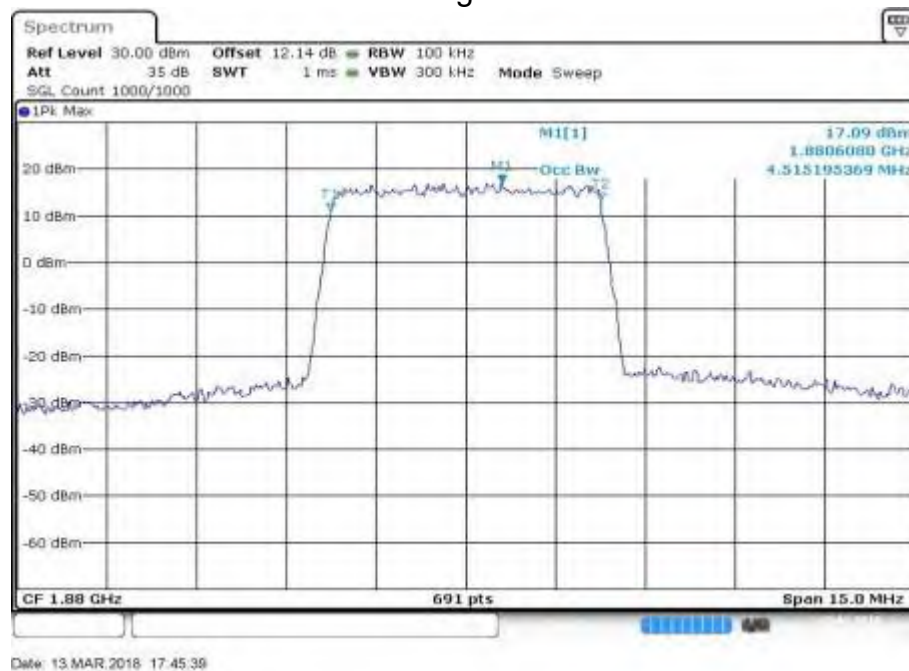


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1907.5	19175	5	25	0	4.493	Fig.4	4.493	Fig.8

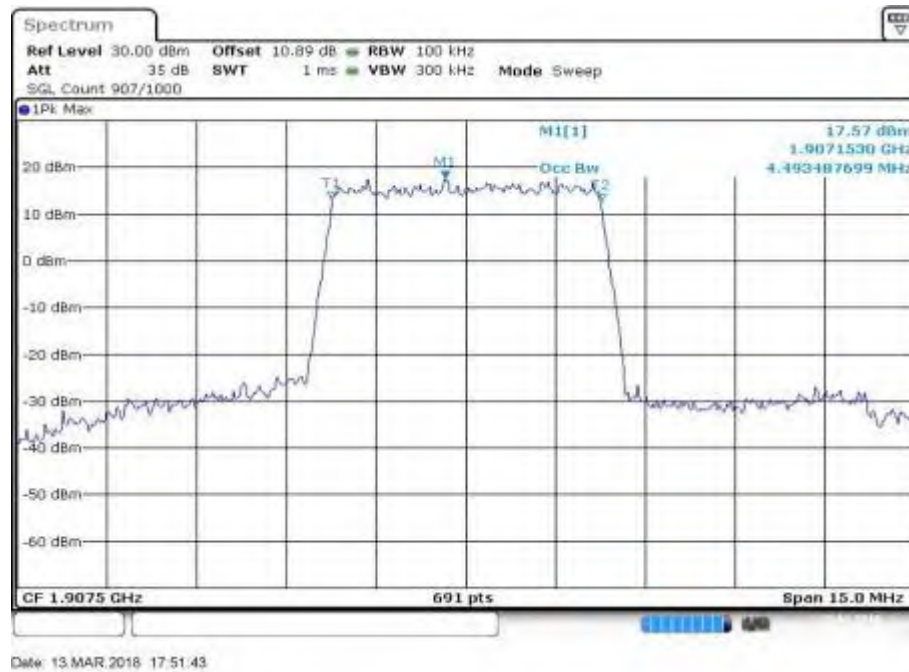


Fig.4

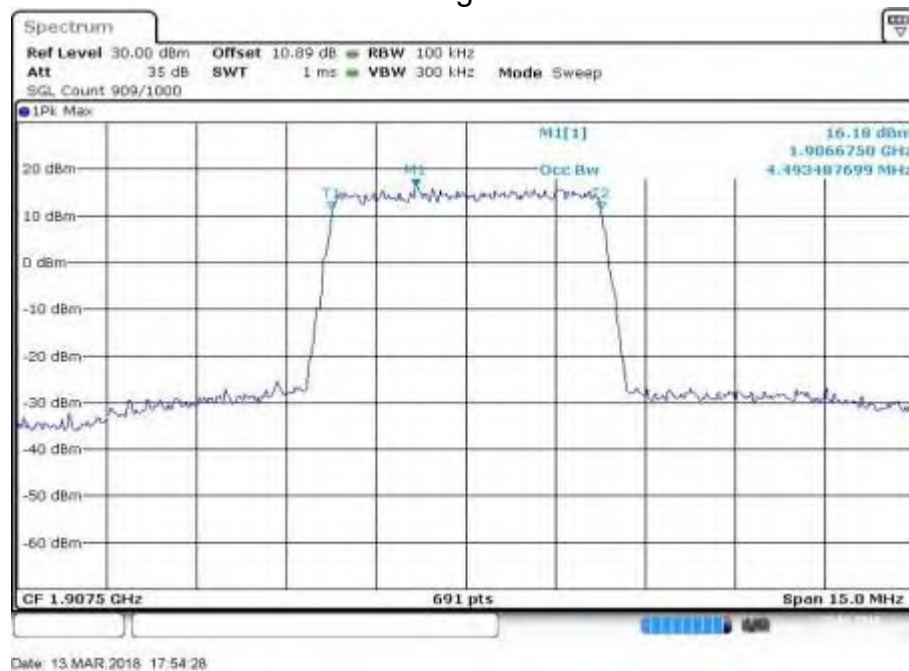


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1855	18650	10	50	0	9.074	Fig.4	9.074	Fig.8

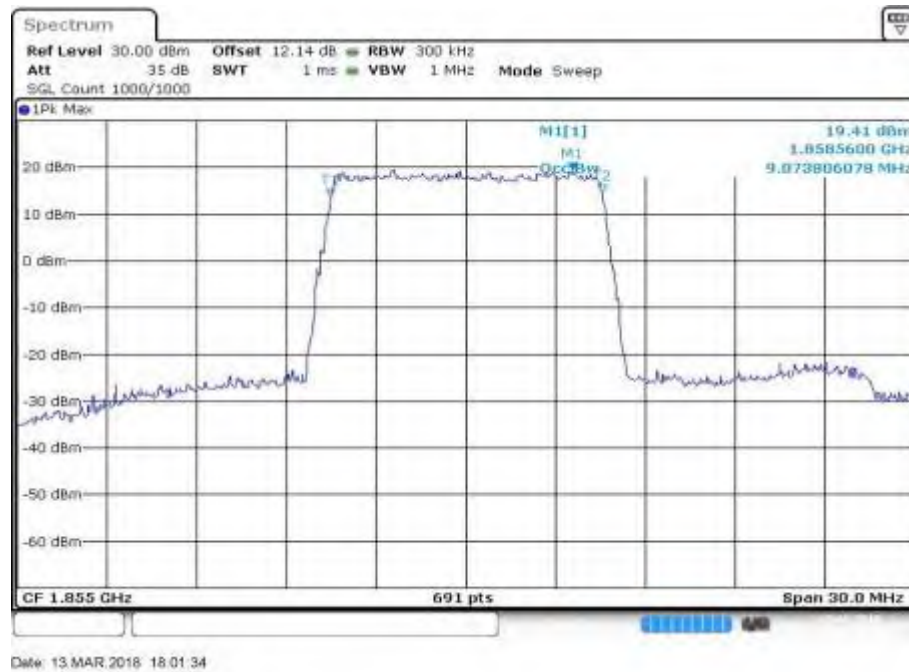


Fig.4

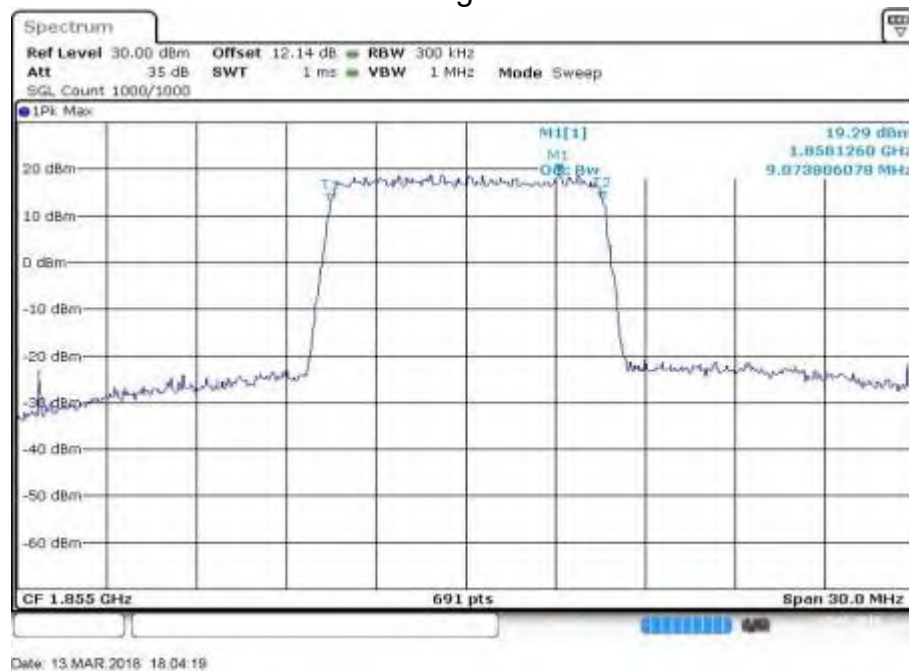


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1880	18900	10	50	0	9.074	Fig.4	9.074	Fig.8

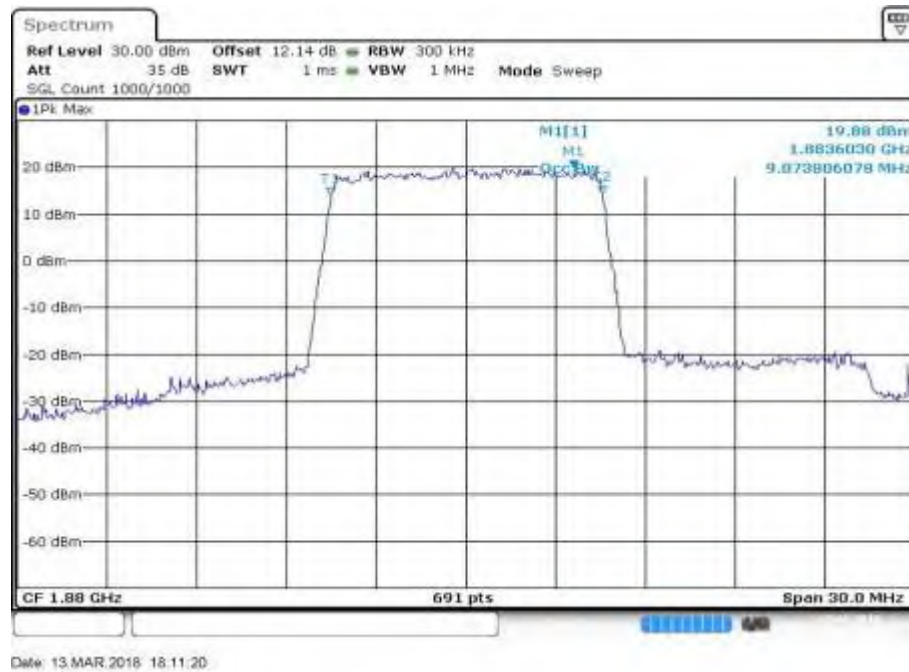


Fig.4

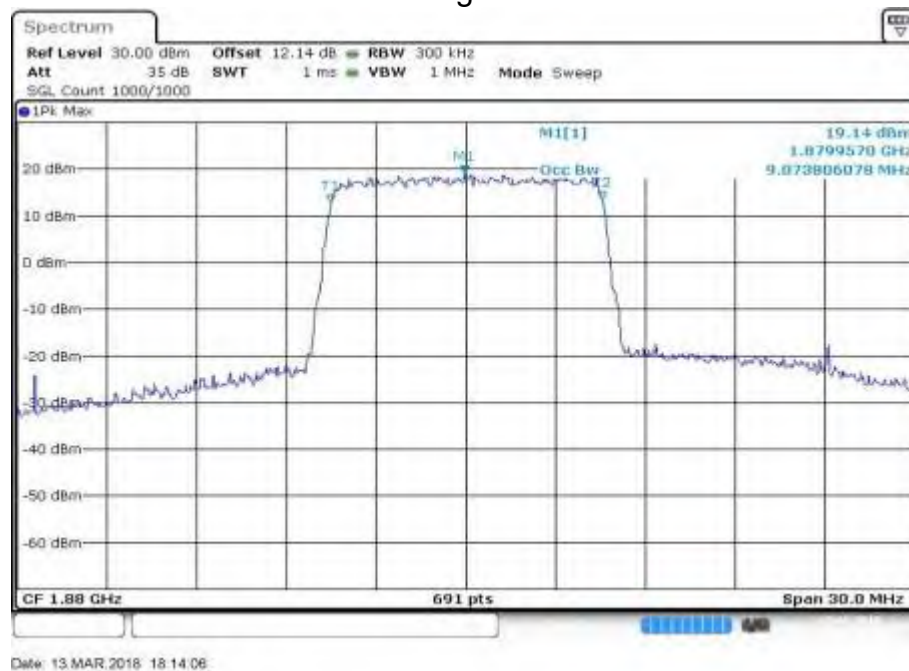


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1905	19150	10	50	0	9.074	Fig.4	9.074	Fig.8

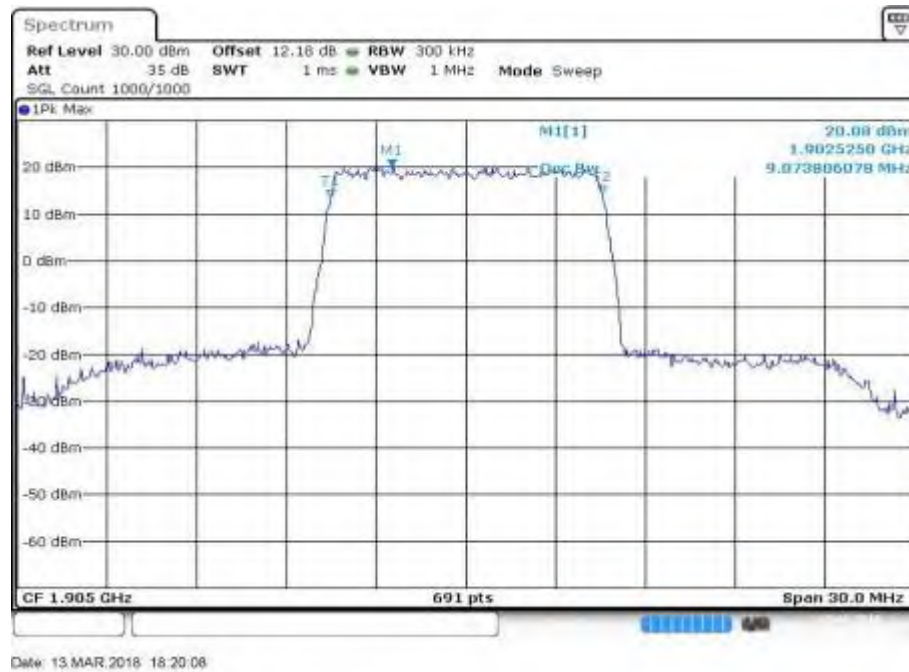


Fig.4

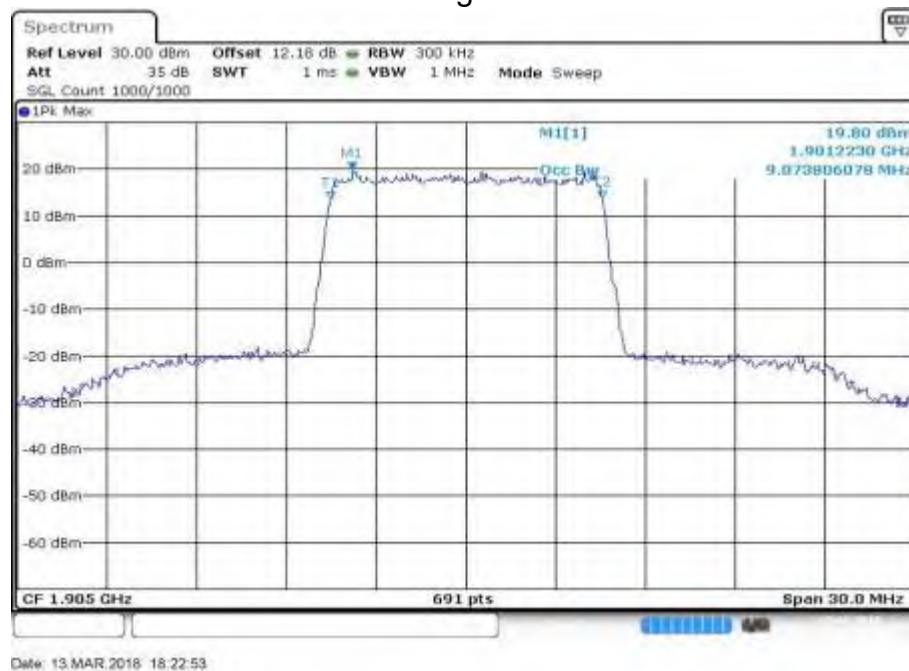


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1857.5	18675	15	75	0	13.480	Fig.4	13.480	Fig.8



Fig.4

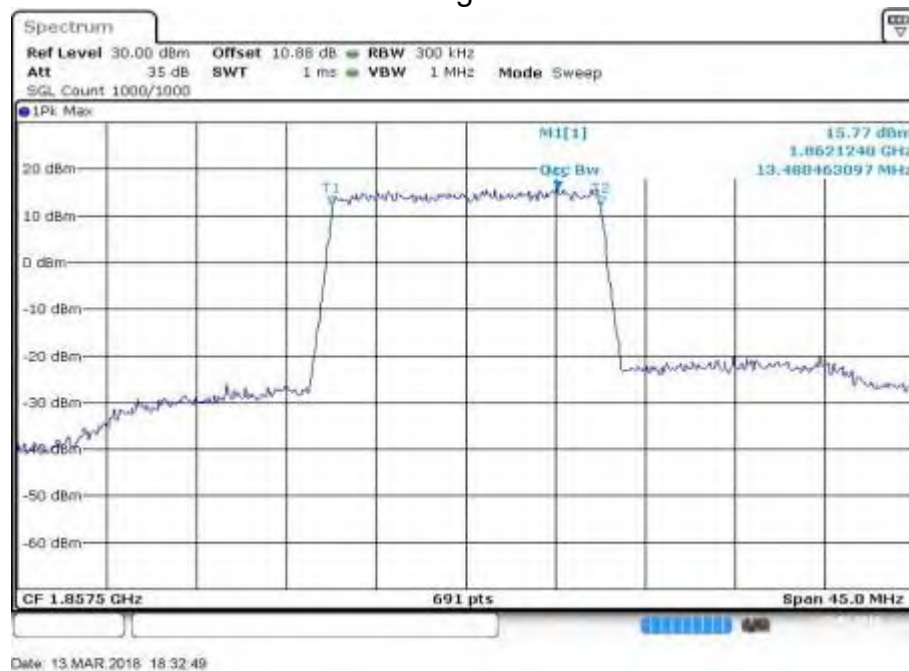


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1880	18900	15	75	0	13.480	Fig.4	13.480	Fig.8

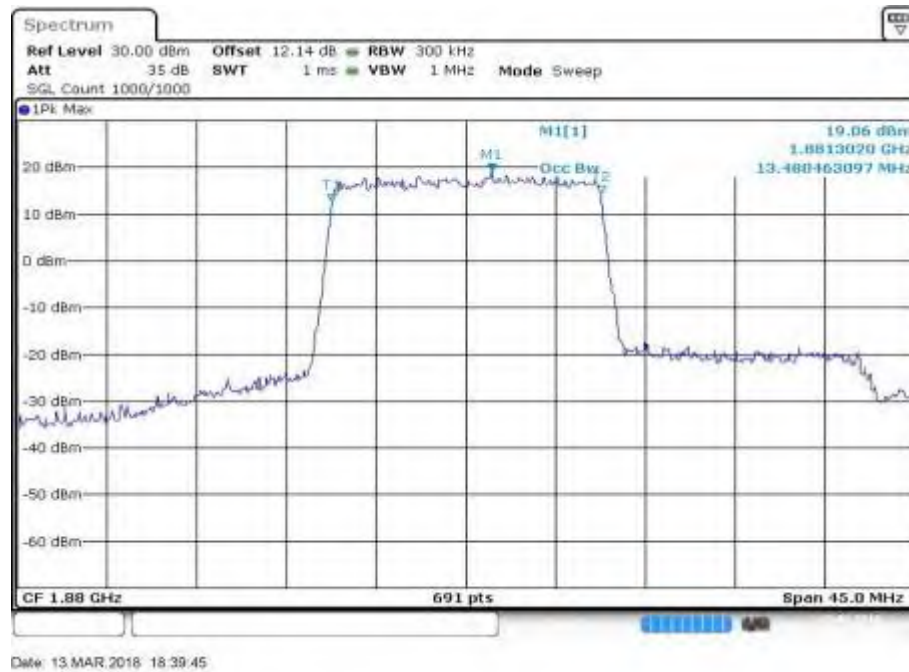


Fig.4

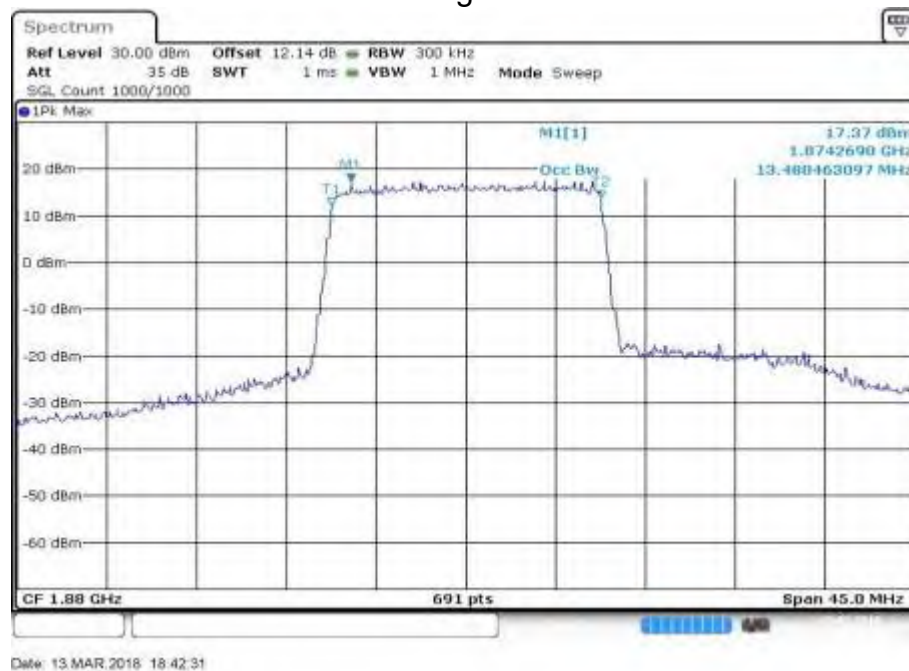


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1902.5	19125	15	75	0	13.546	Fig.4	13.480	Fig.8

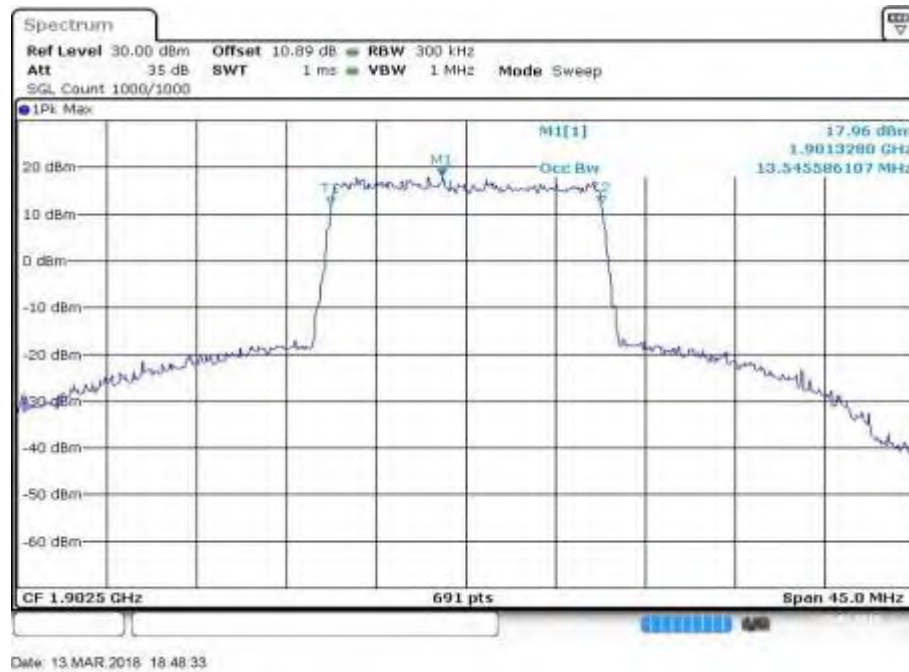


Fig.4

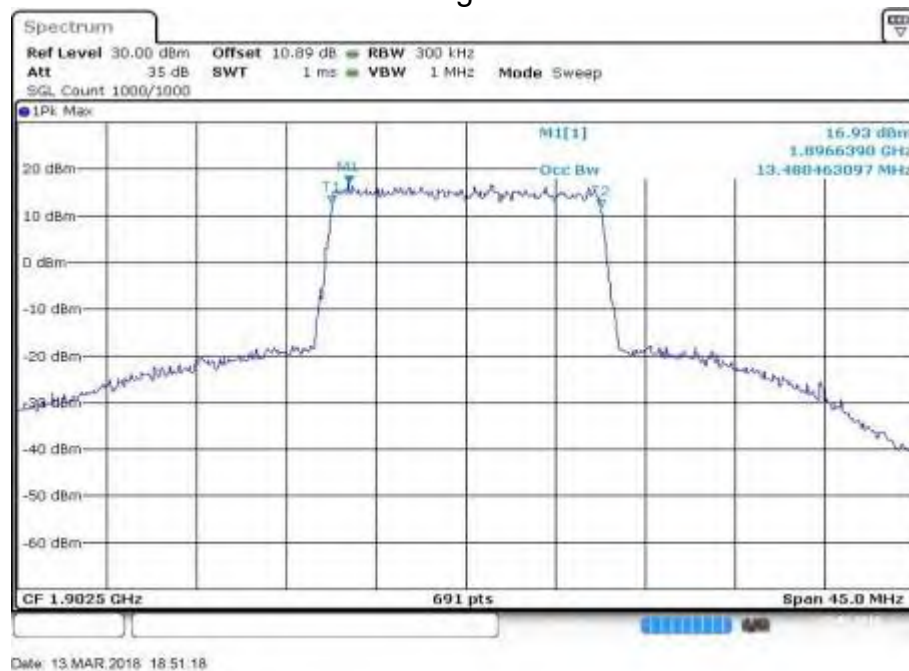


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1880	18900	20	100	0	17.887	Fig.4	17.974	Fig.8

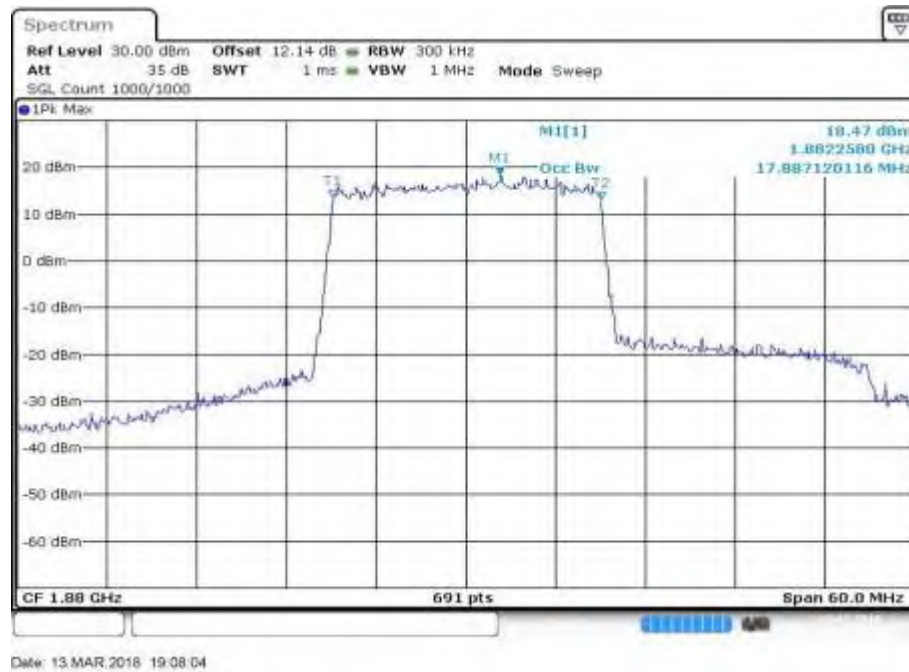


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1900	19100	20	100	0	17.887	Fig.4	17.974	Fig.8

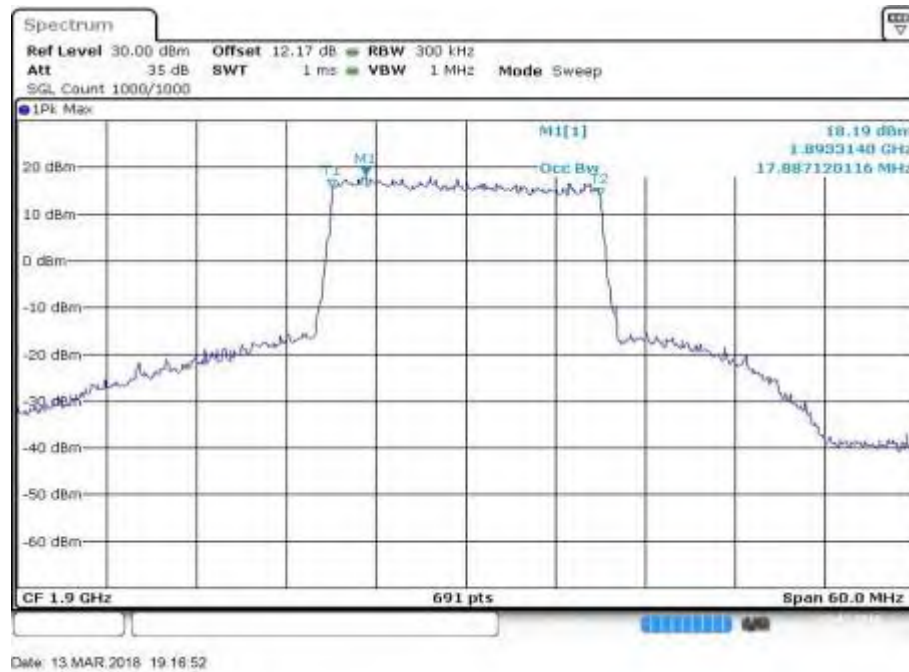


Fig.4



Fig.8

3 Emission Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1850.7	18607	1.4	6	0	1.240	Fig.4	1.246	Fig.8

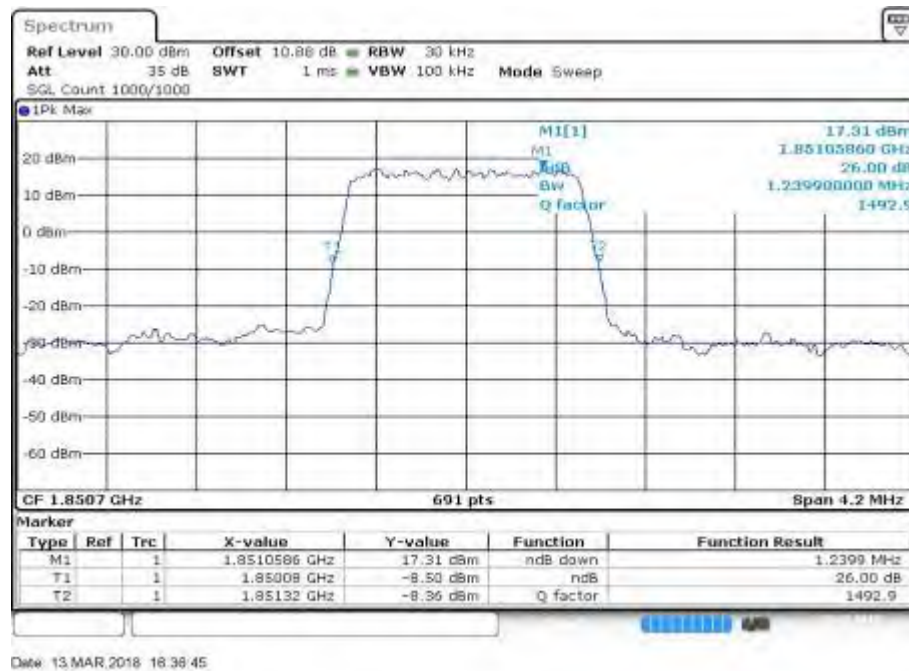


Fig.4

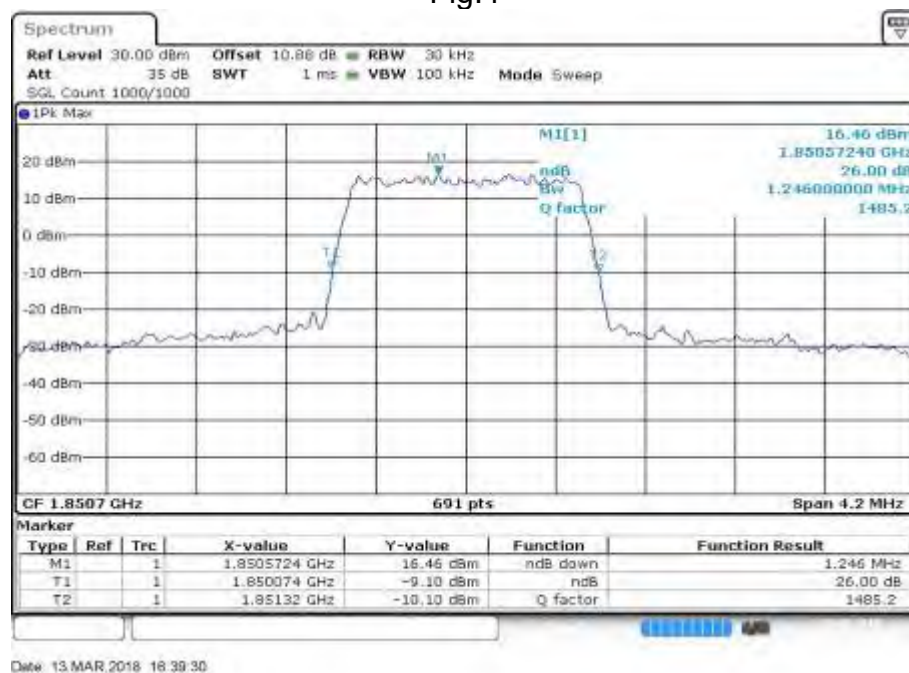


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1880	18900	1.4	6	0	1.246	Fig.4	1.228	Fig.8

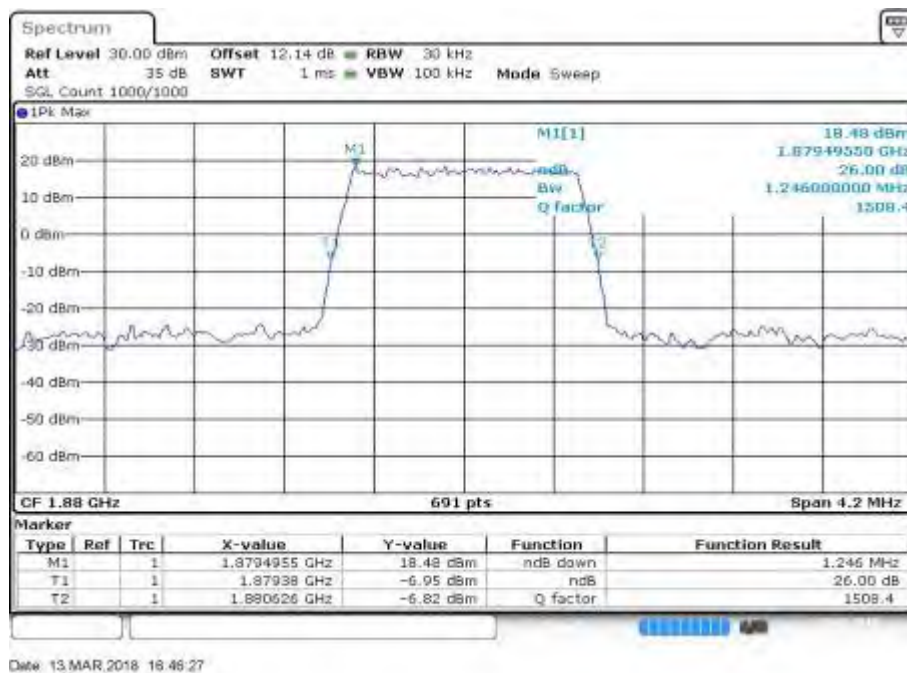


Fig.4

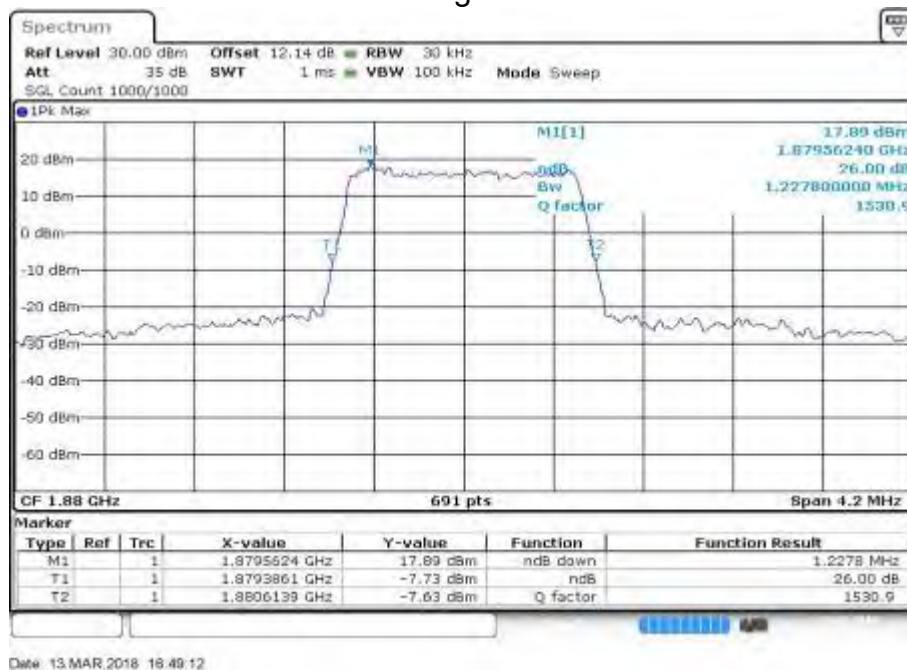


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1909.3	19193	1.4	6	0	1.234	Fig.4	1.240	Fig.8

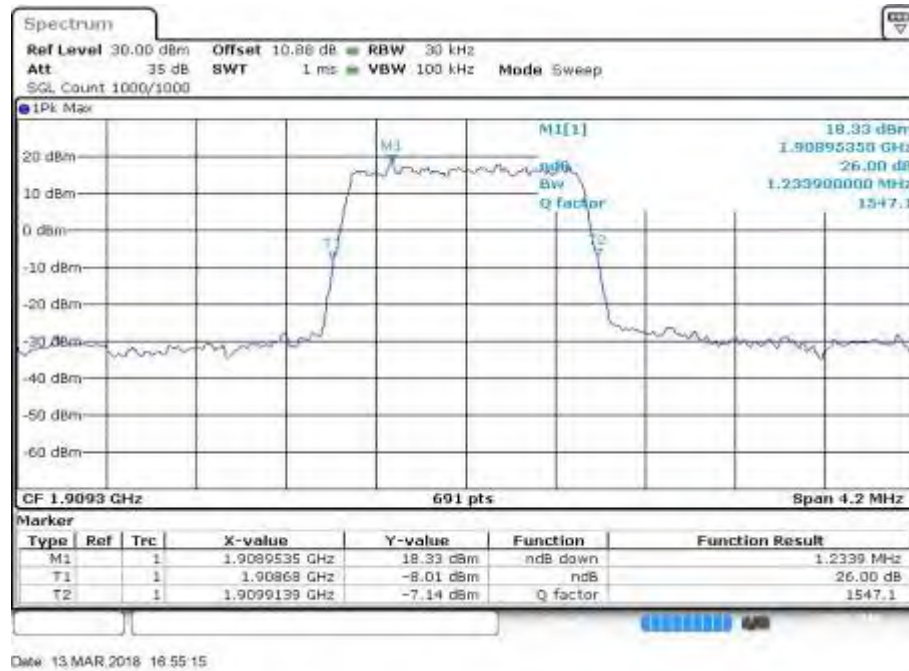


Fig.4

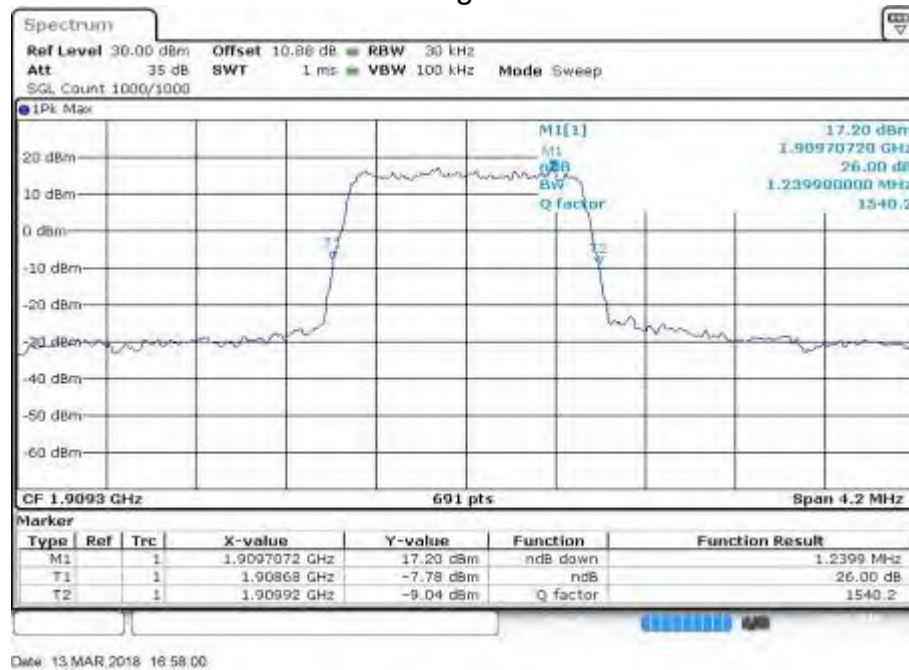


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1851.5	18615	3	15	0	2.674	Fig.4	2.674	Fig.8

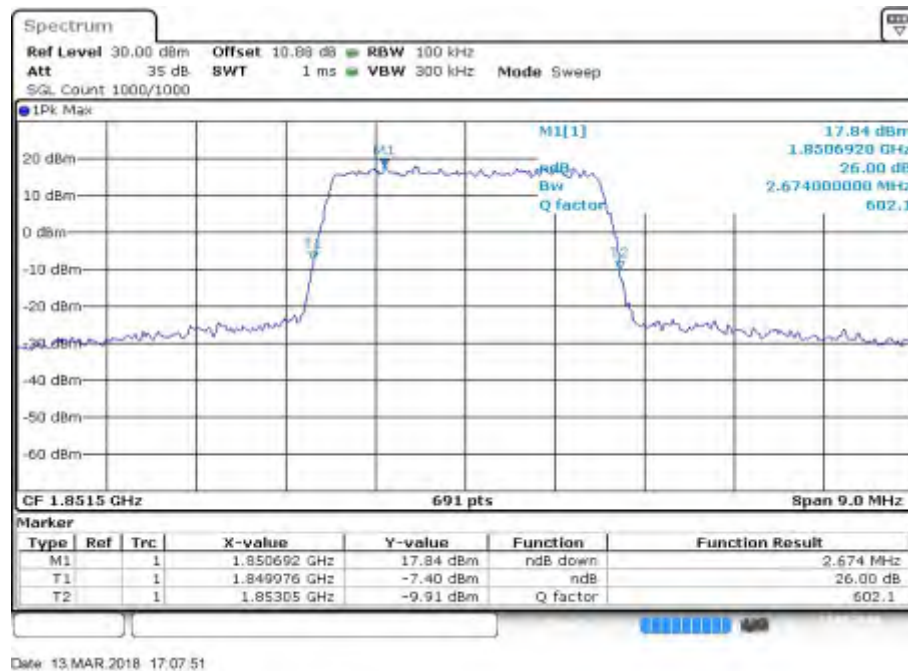


Fig.4

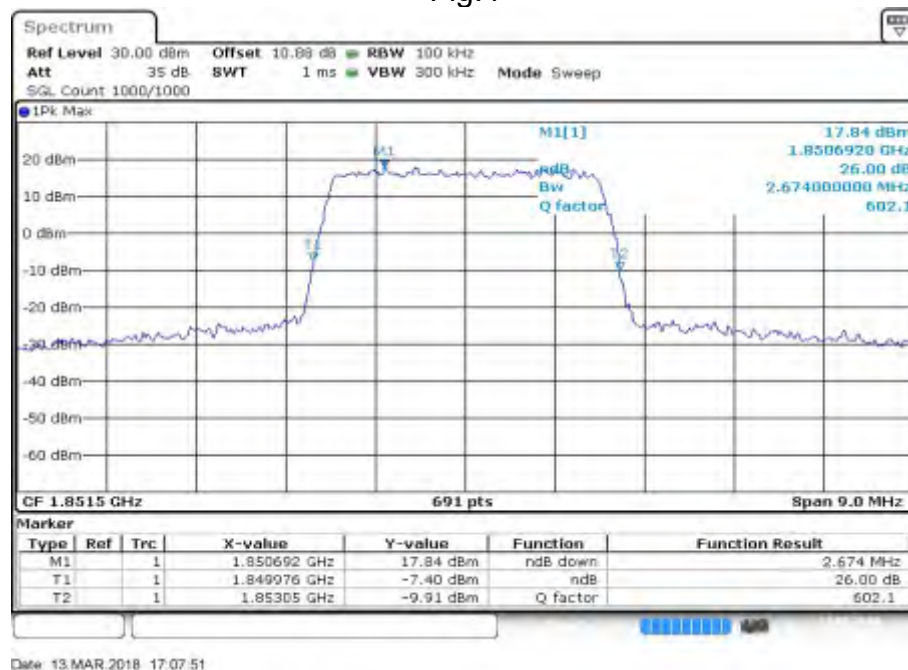


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1880	18900	3	15	0	2.074	Fig.4	2.048	Fig.8

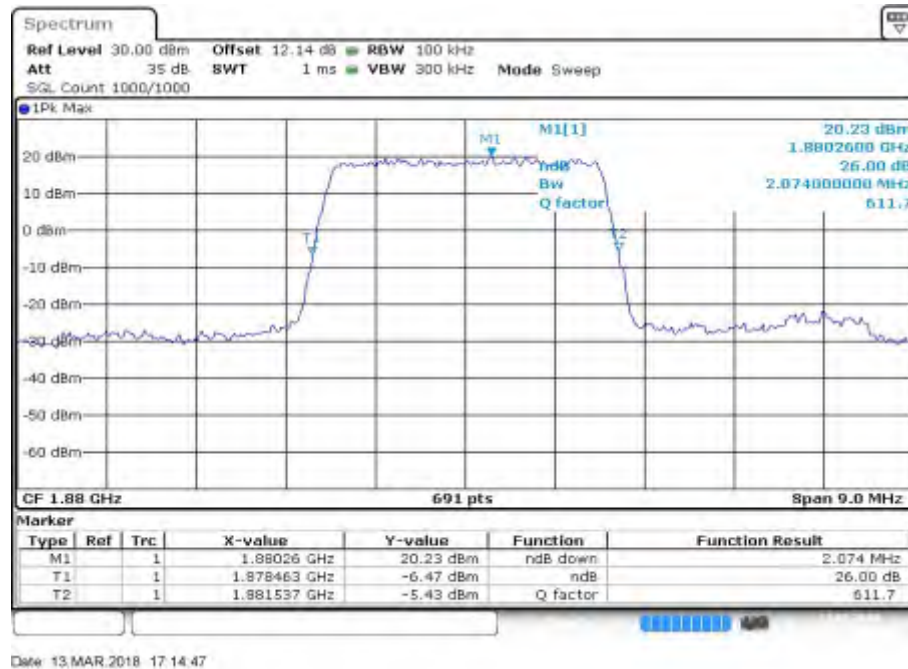


Fig.4

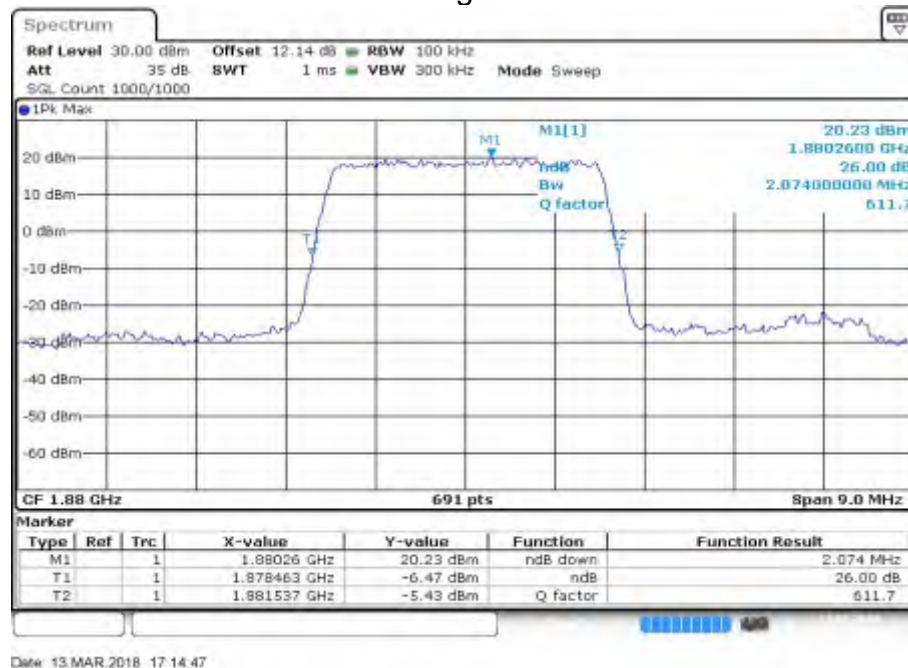


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1908.5	19185	3	15	0	2.061	Fig.4	2.061	Fig.8

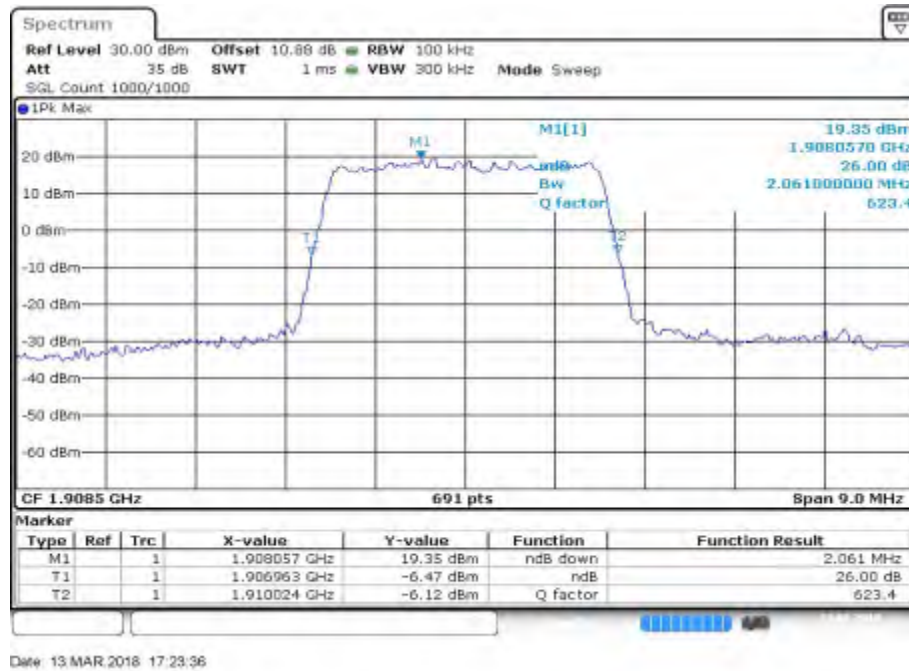


Fig.4

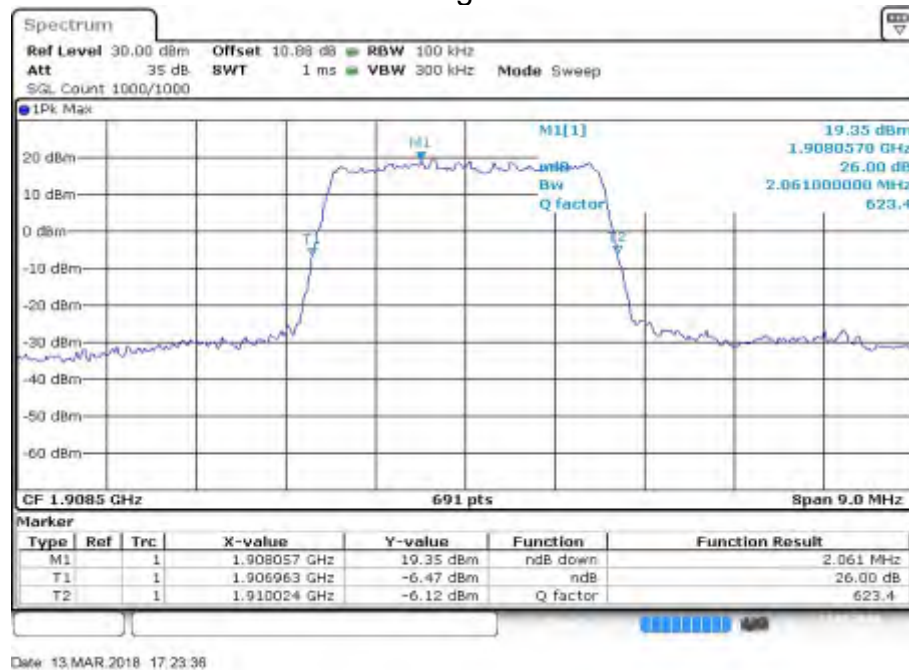


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1852.5	18625	5	25	0	4.971	Fig.4	4.971	Fig.8

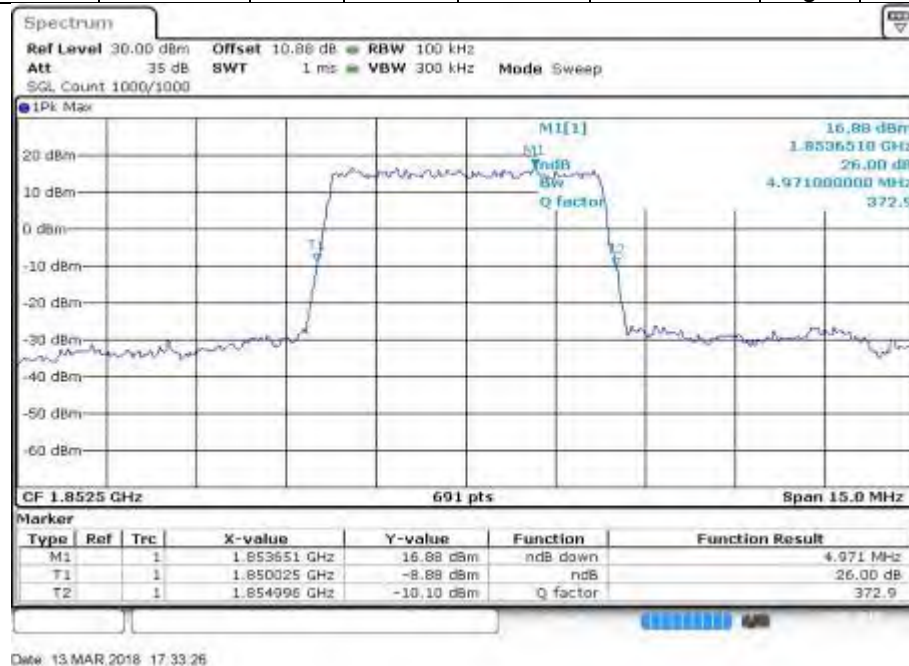


Fig.4

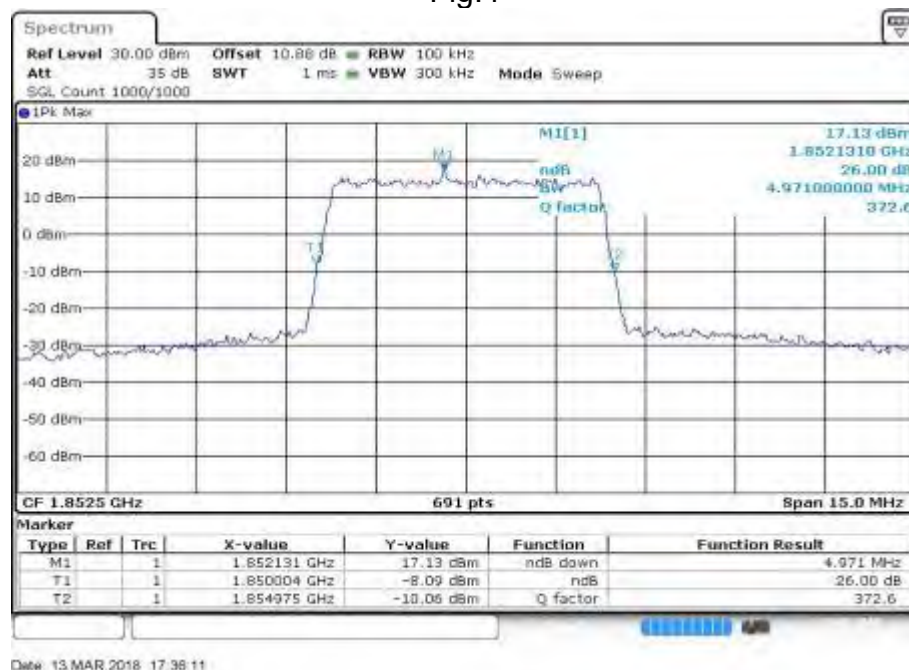


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1880	18900	5	25	0	4.971	Fig.4	4.993	Fig.8

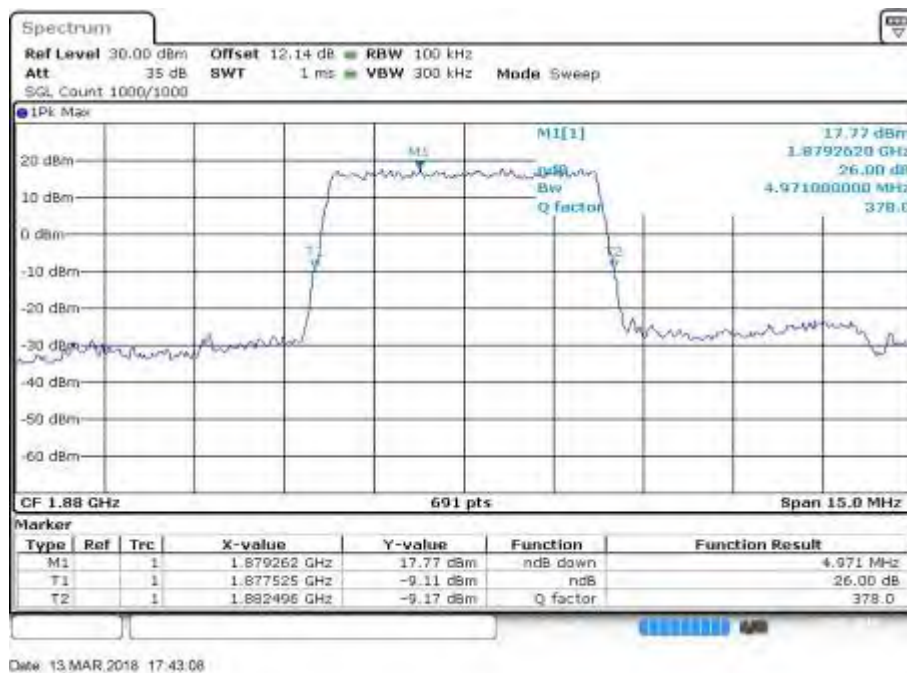


Fig.4

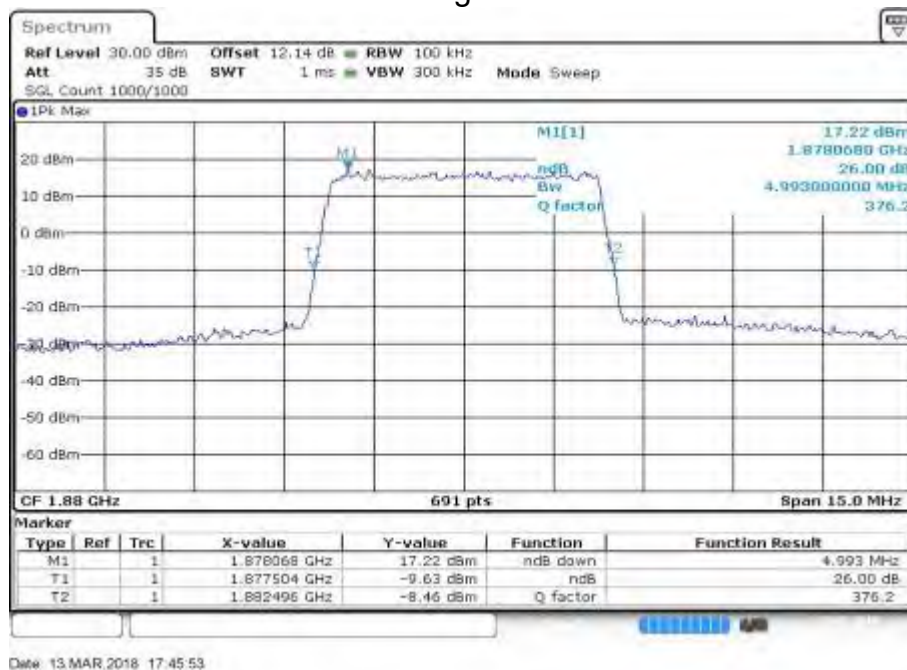


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1907.5	19175	5	25	0	4.971	Fig.4	4.971	Fig.8

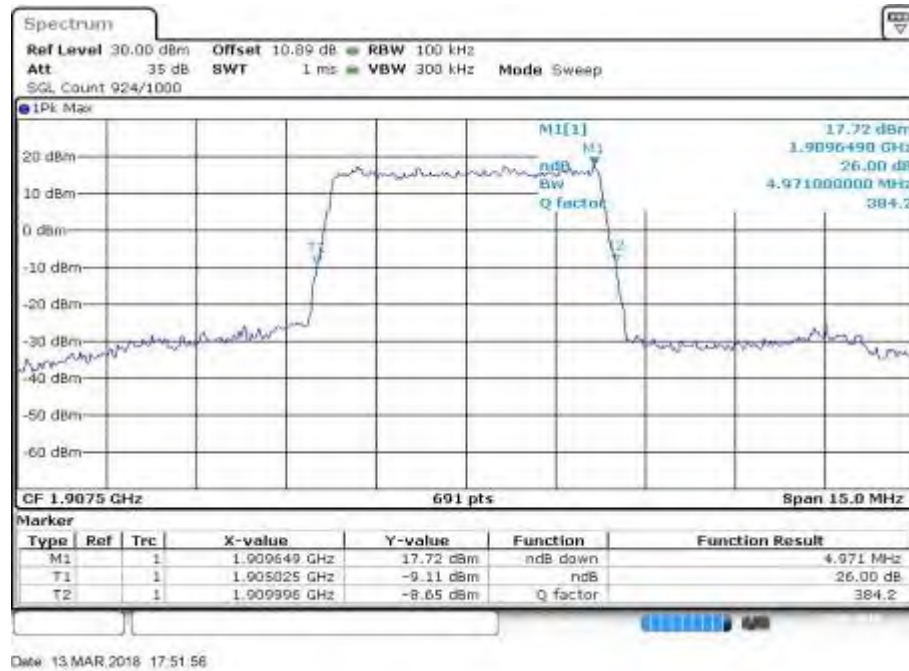


Fig.4

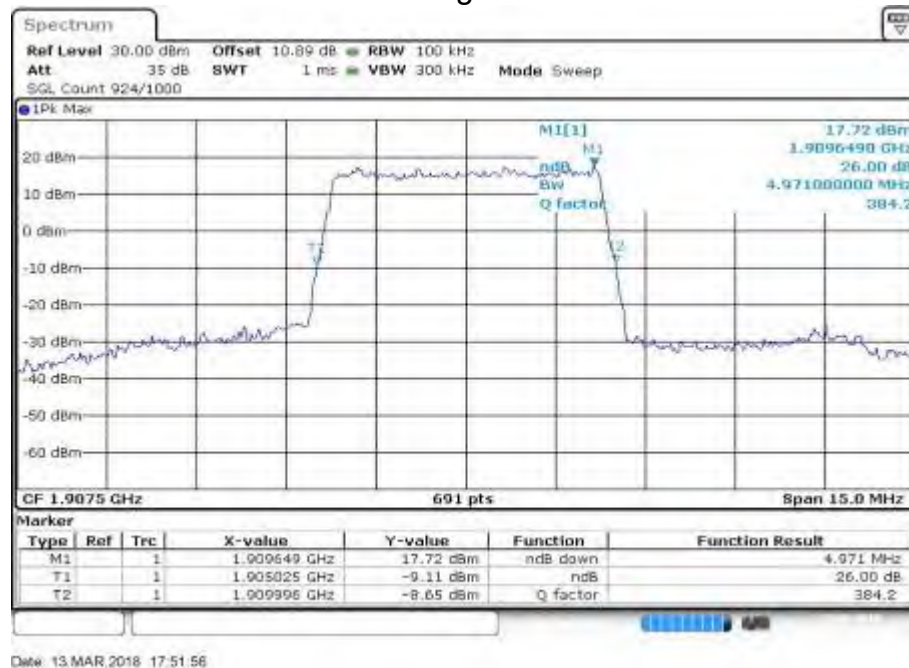


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1855	18650	10	50	0	9.986	Fig.4	9.986	Fig.8

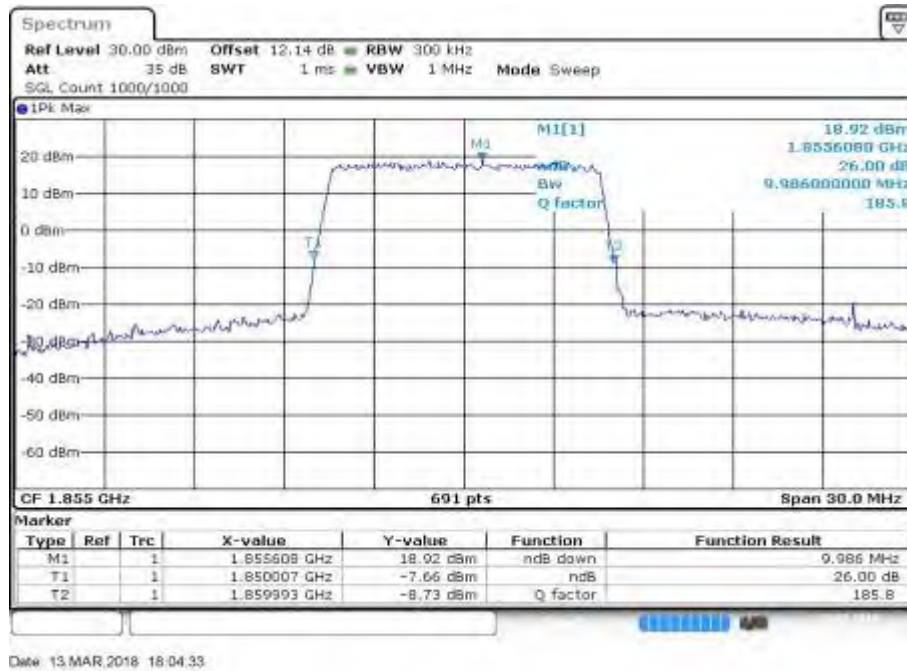


Fig.4

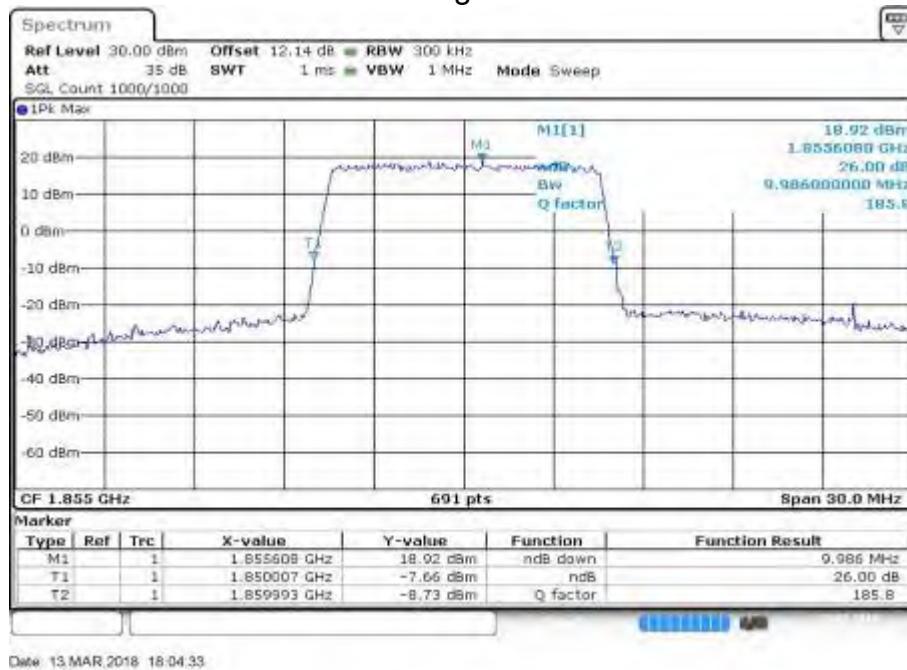


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1880	18900	10	50	0	9.942	Fig.4	9.899	Fig.8

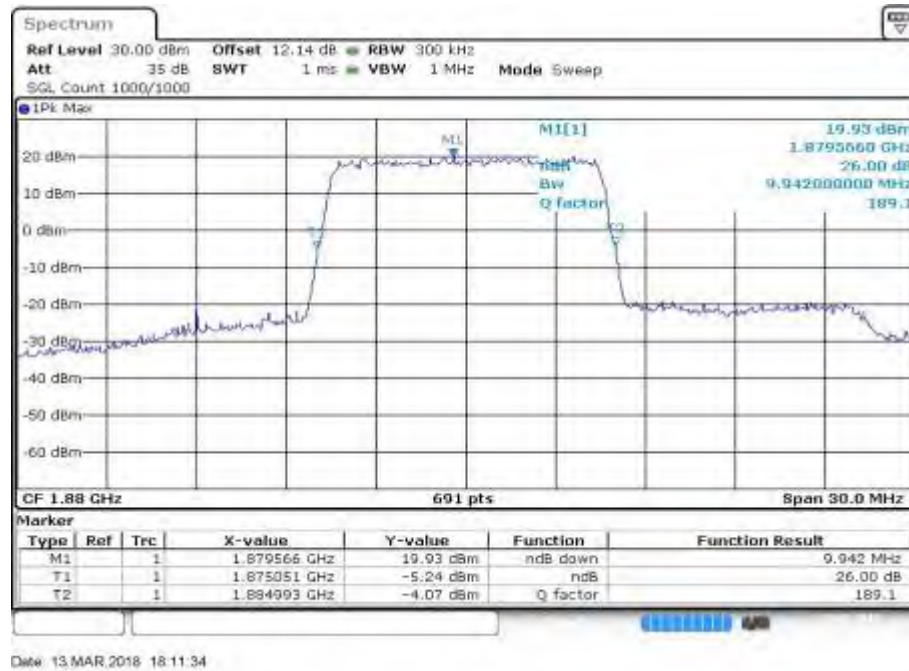


Fig.4

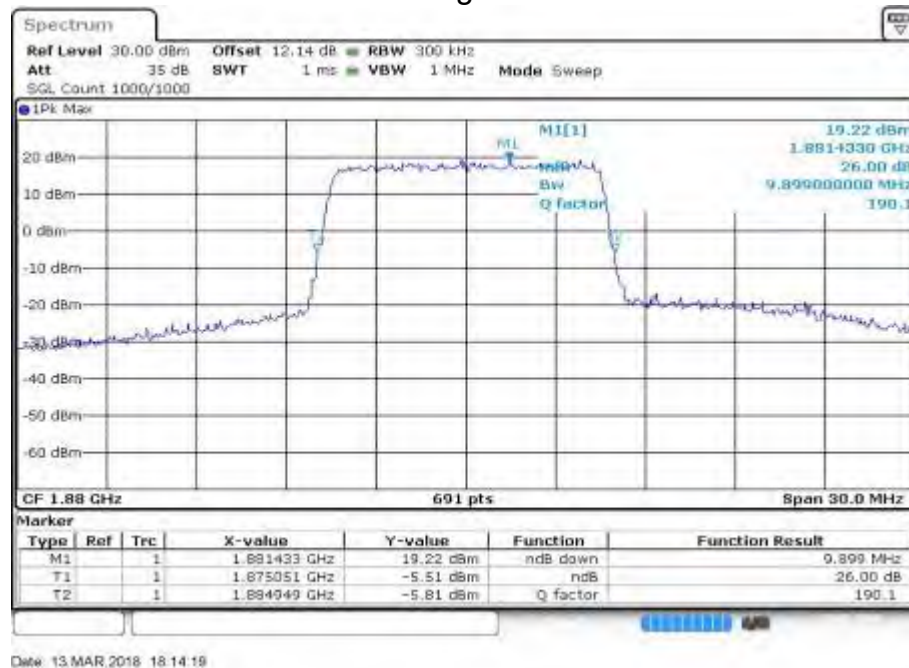


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1905	19150	10	50	0	10.029	Fig.4	9.986	Fig.8

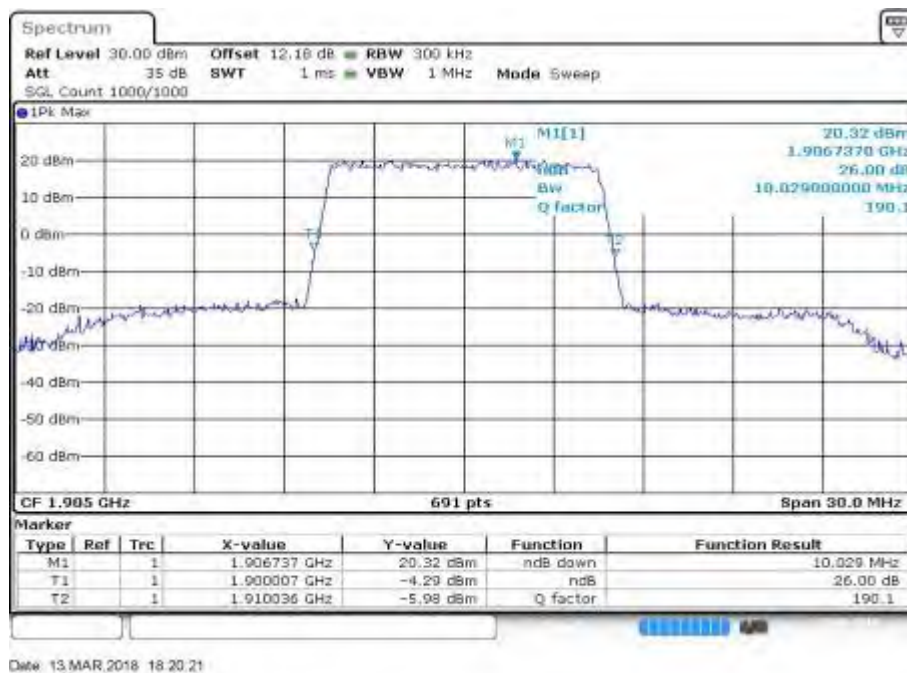


Fig.4

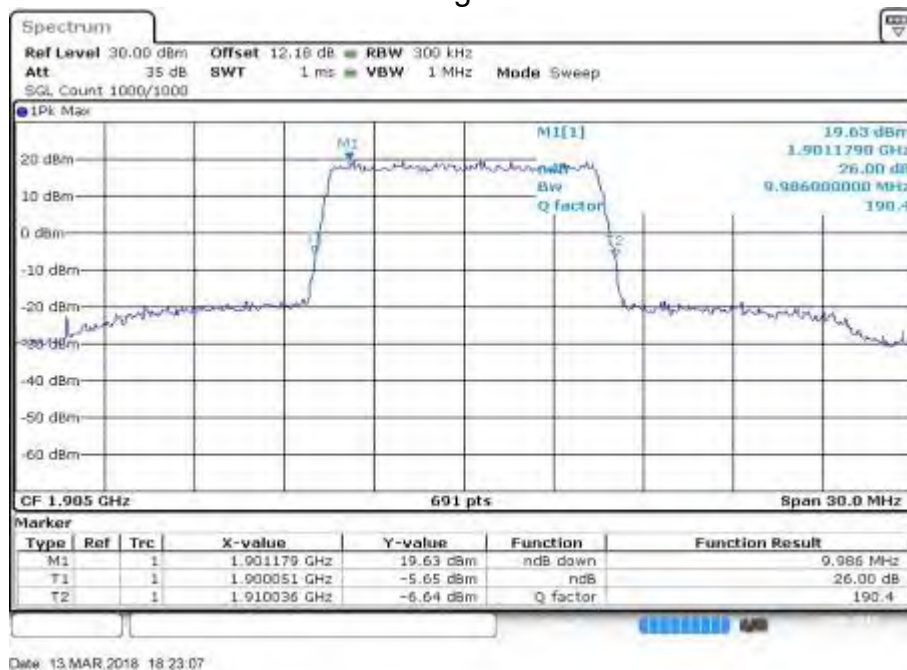


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1857.5	18675	15	75	0	14.718	Fig.4	14.783	Fig.8

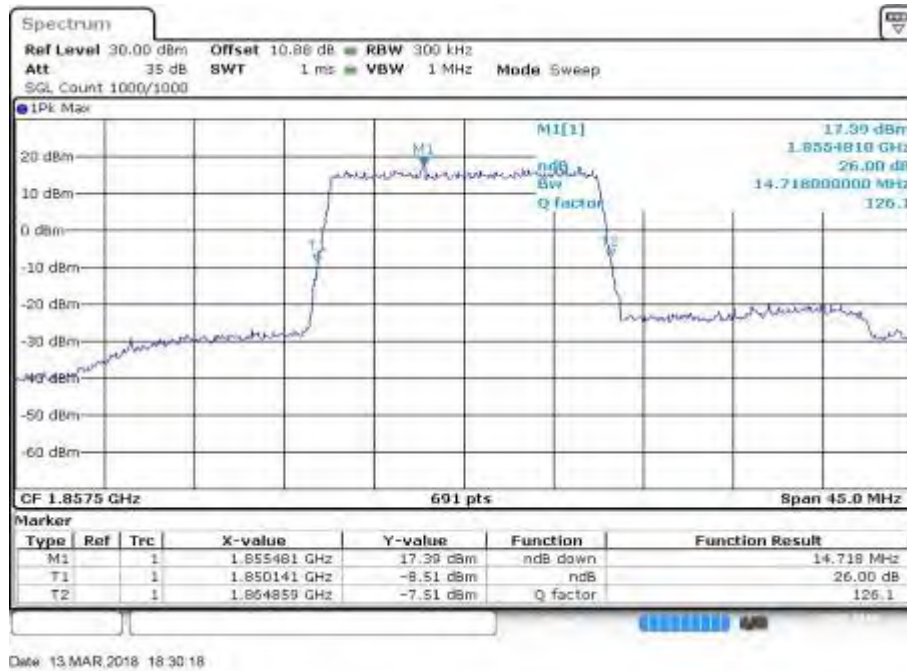


Fig.4

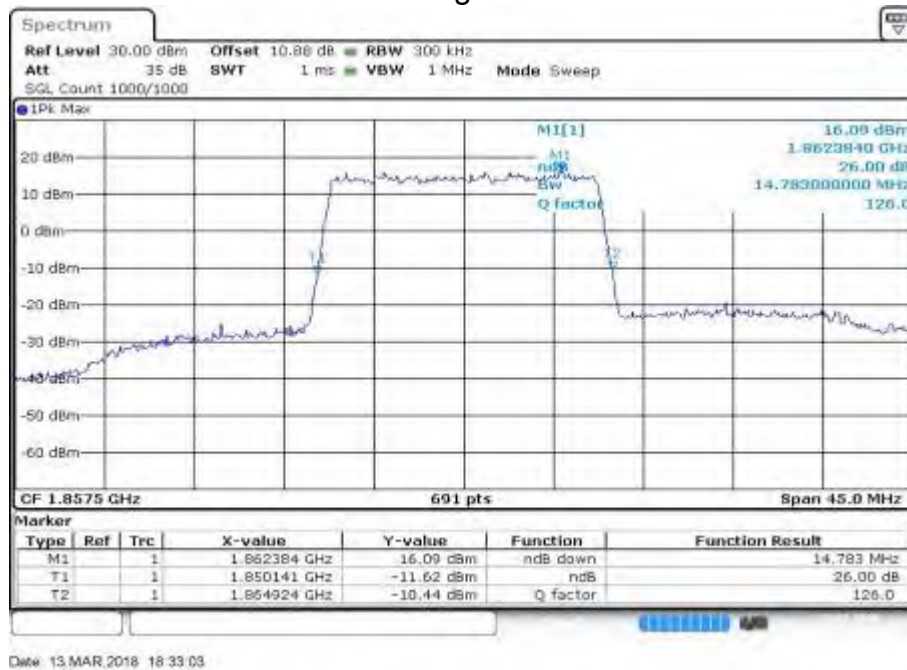


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1880	18900	15	75	0	14.653	Fig.4	14.783	Fig.8

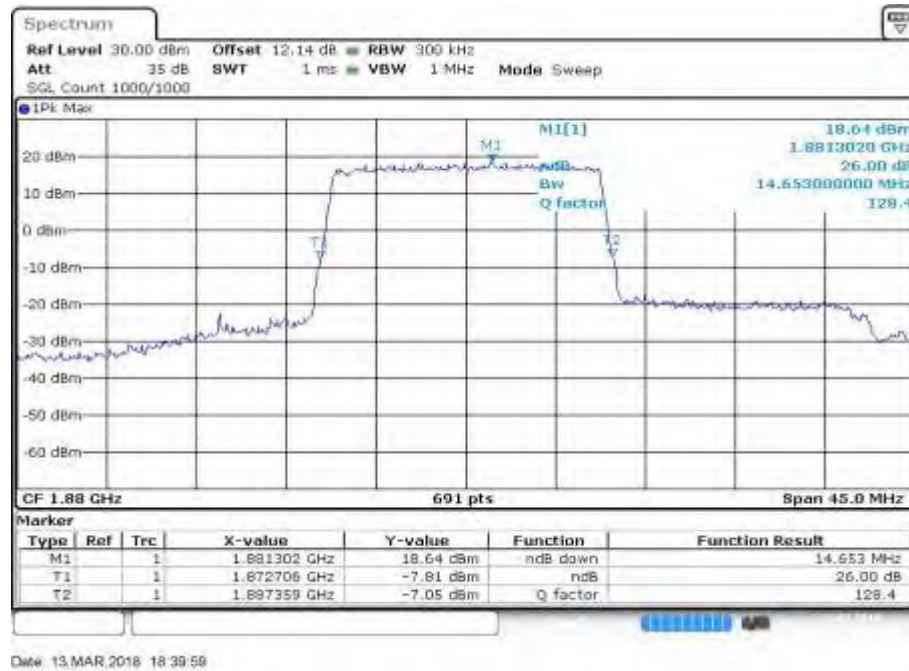


Fig.4

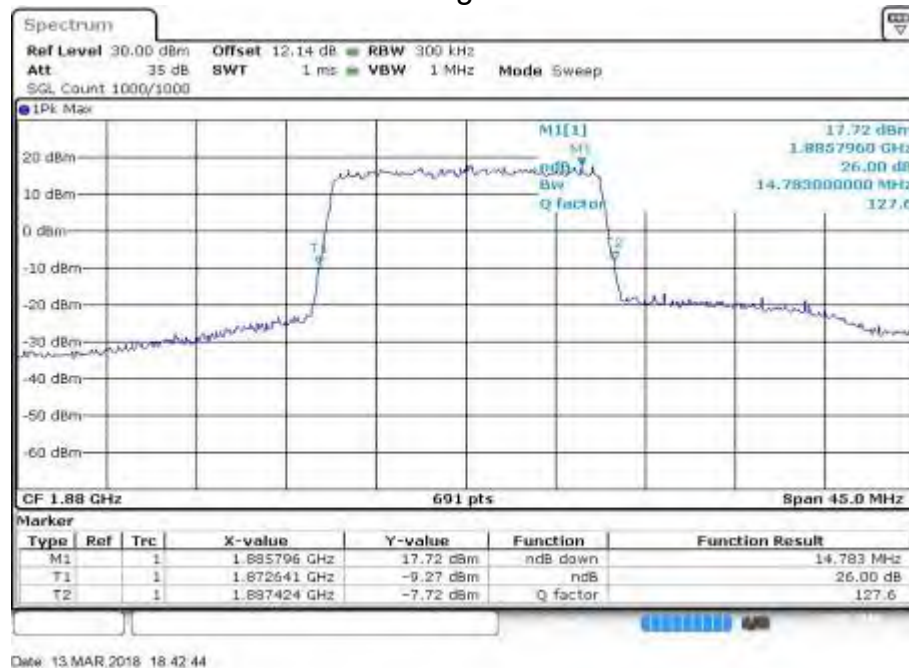


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1902.5	19125	15	75	0	14.718	Fig.4	14.848	Fig.8

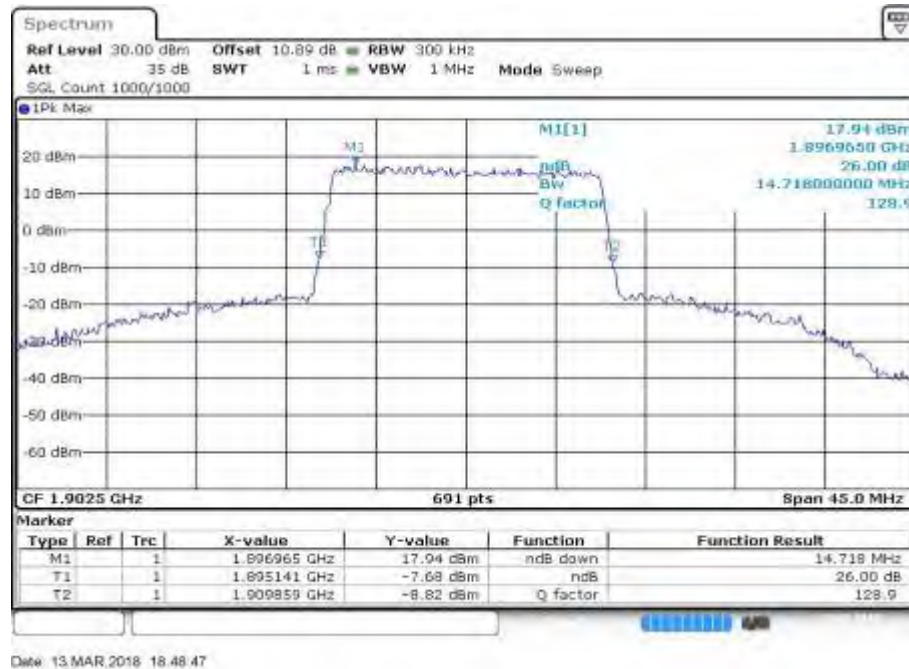


Fig.4

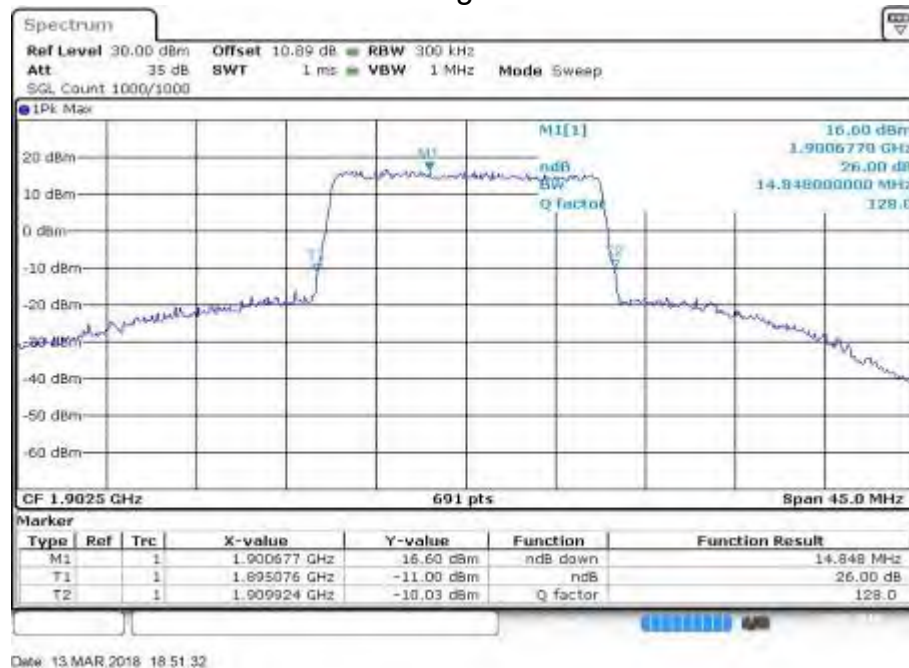


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1860	18700	20	100	0	19.190	Fig.4	19.363	Fig.8

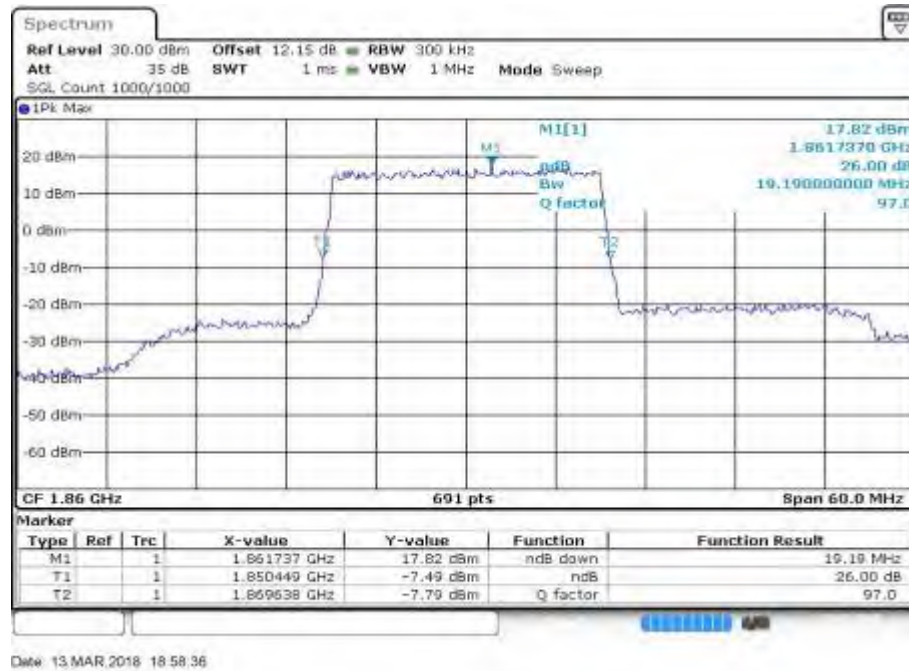


Fig.4

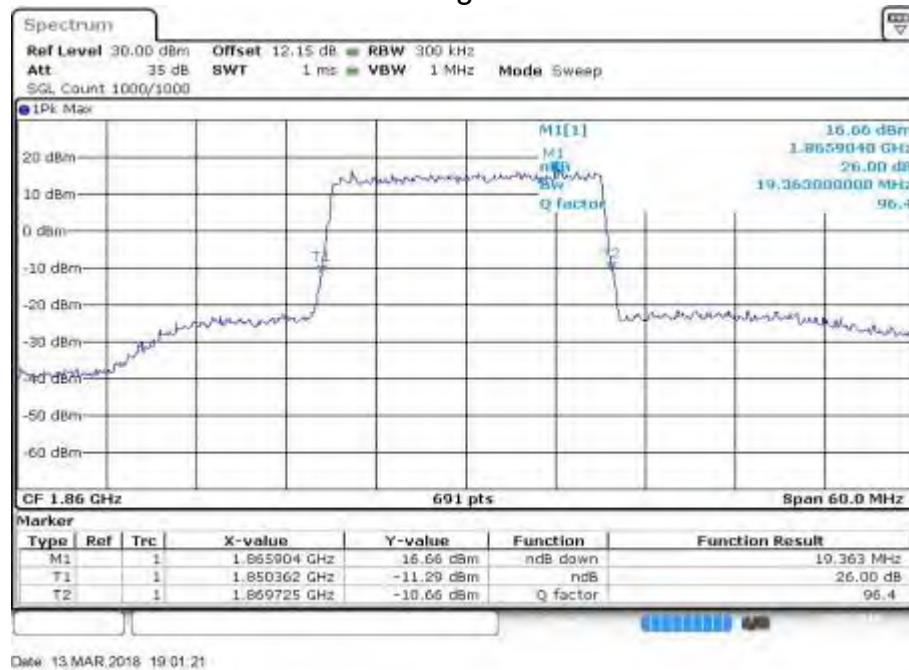


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1880	18900	20	100	0	19.103	Fig.4	19.363	Fig.8



Fig.4

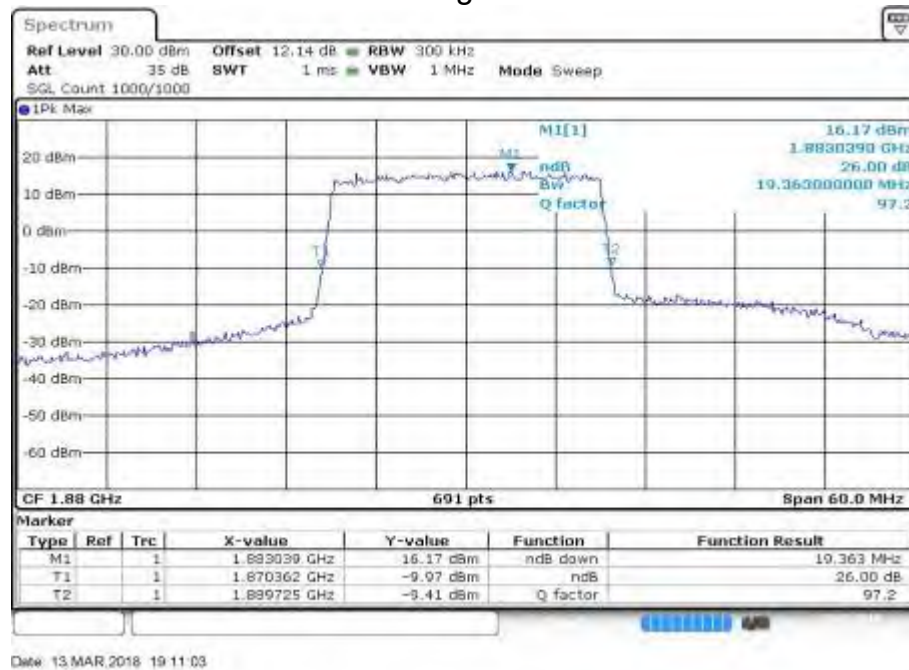


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
2	1900	19100	20	100	0	19.537	Fig.4	19.363	Fig.8

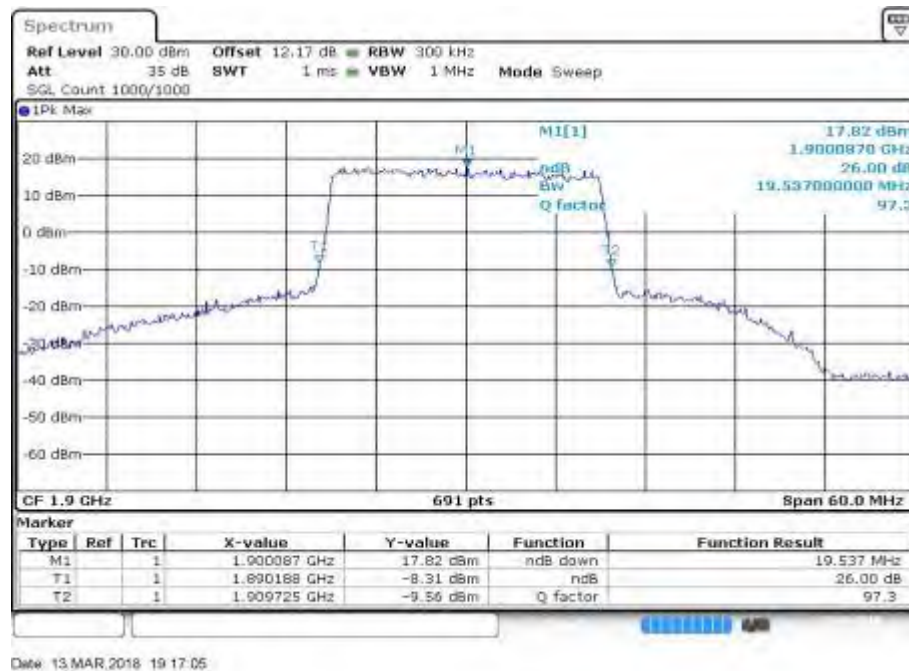


Fig.4

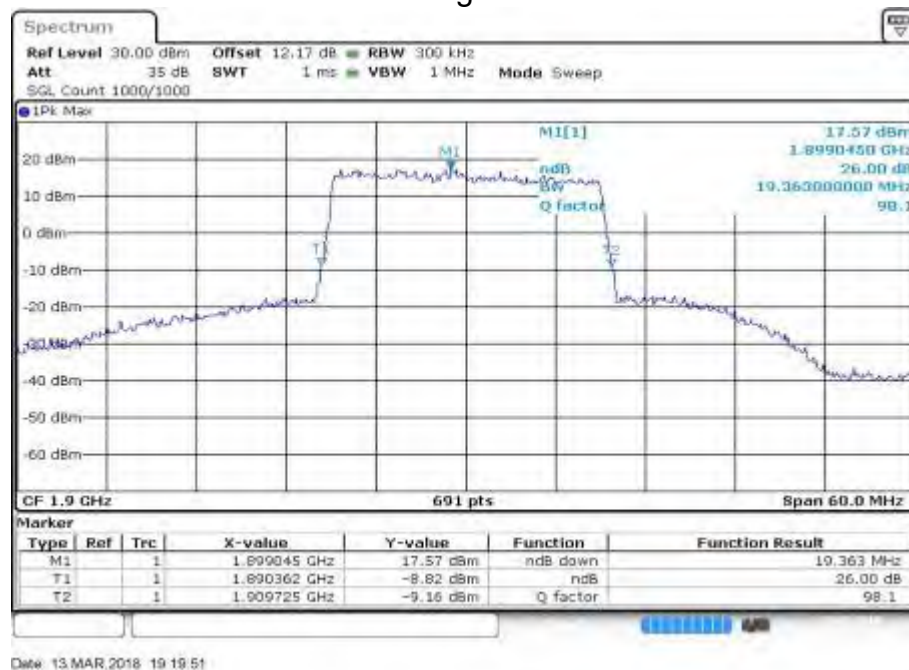
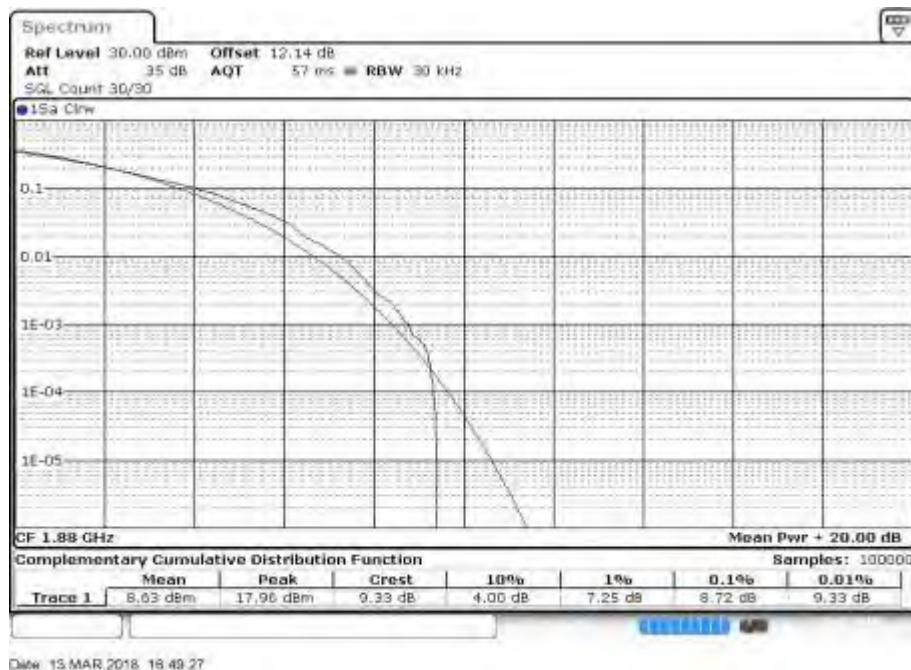


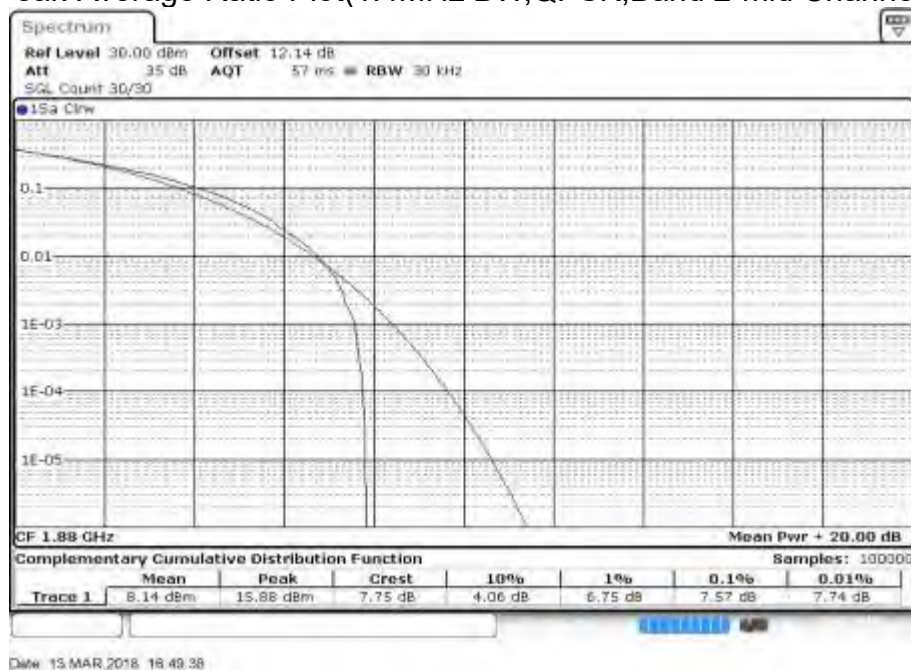
Fig.8

4 Peak-Average Ratio

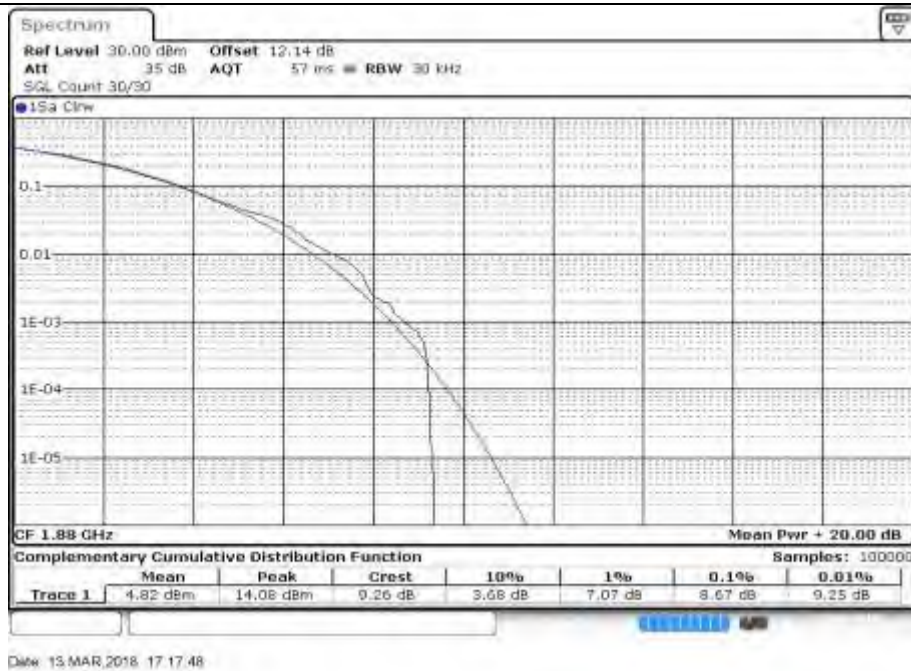
Test result:



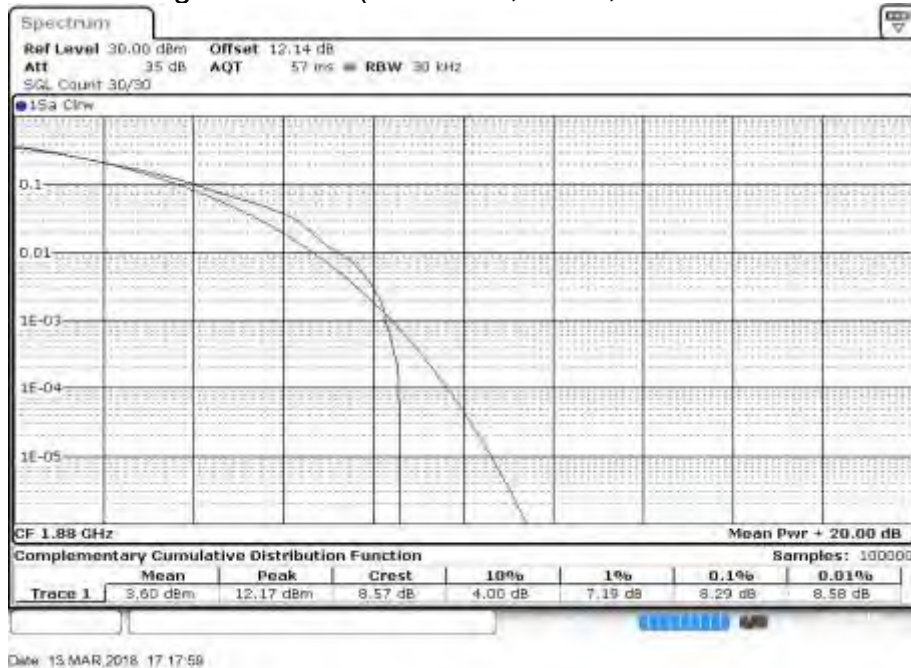
Peak-Average Ratio Plot(1.4MHz BW,QPSK,Band 2-mid Channel)



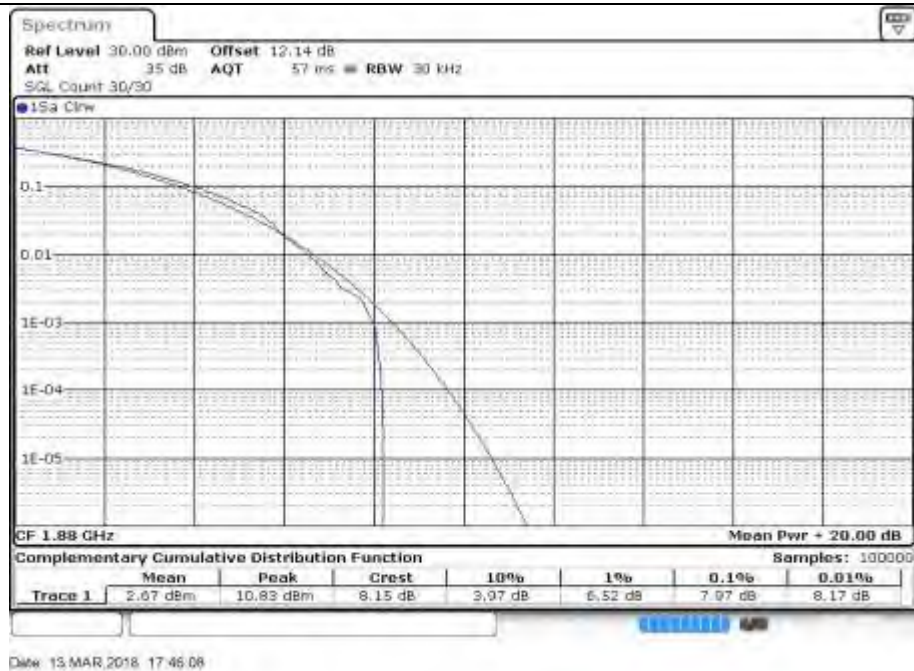
Peak-Average Ratio Plot(1.4MHz BW,16QAM,Band 2-mid Channel)



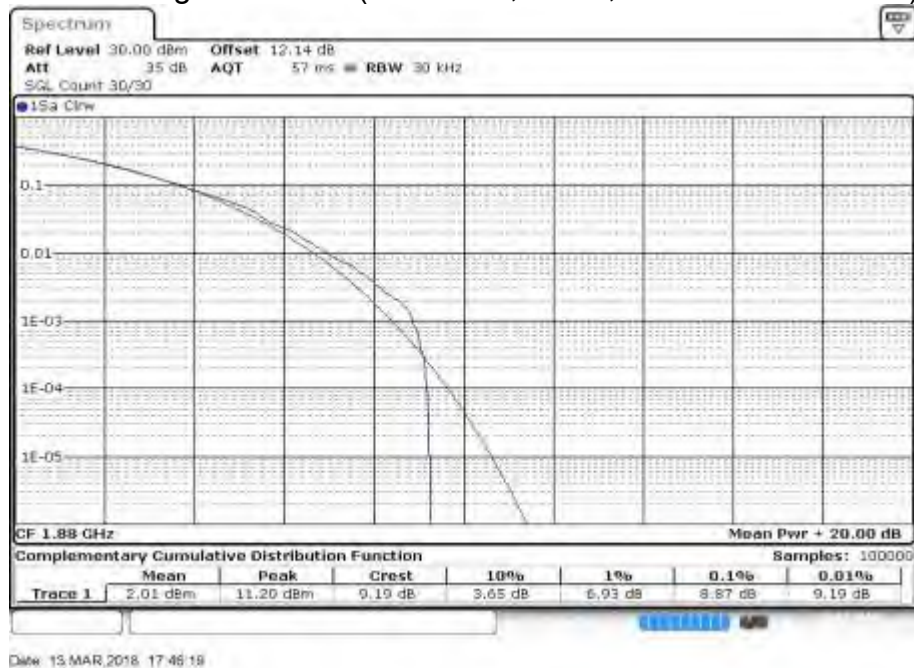
Peak-Average Ratio Plot(3MHz BW,QPSK,Band 2-mid Channel)



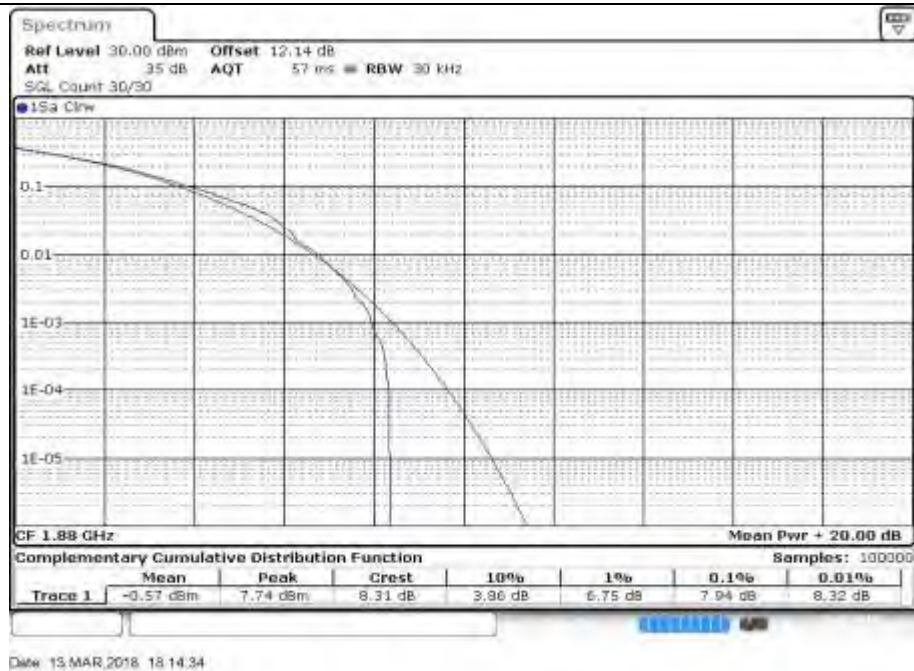
Peak-Average Ratio Plot(3MHz BW,16QAM,Band 2-mid Channel)



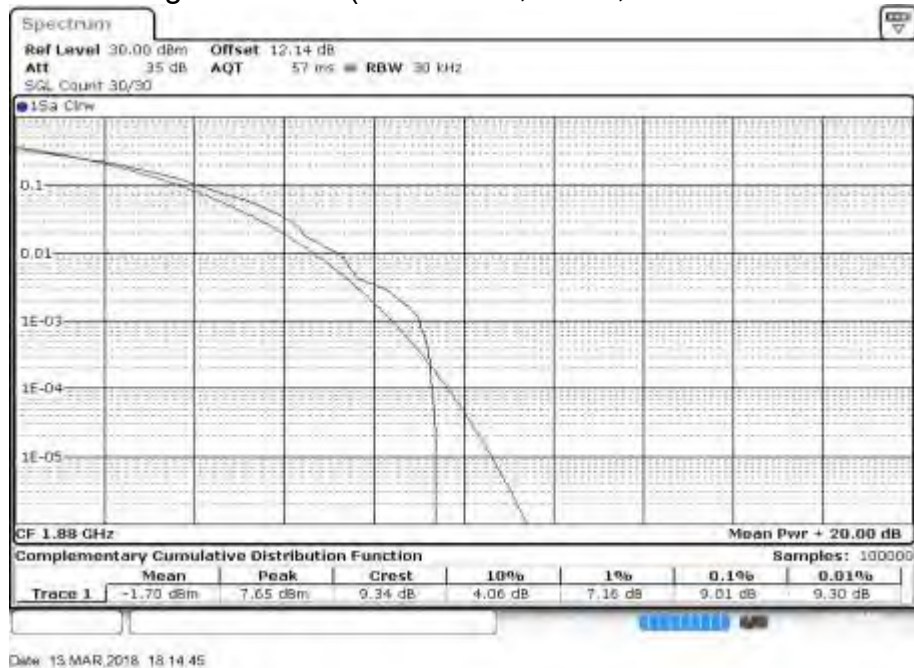
Peak-Average Ratio Plot(5MHz BW,QPSK,Band 2-mid Channel)



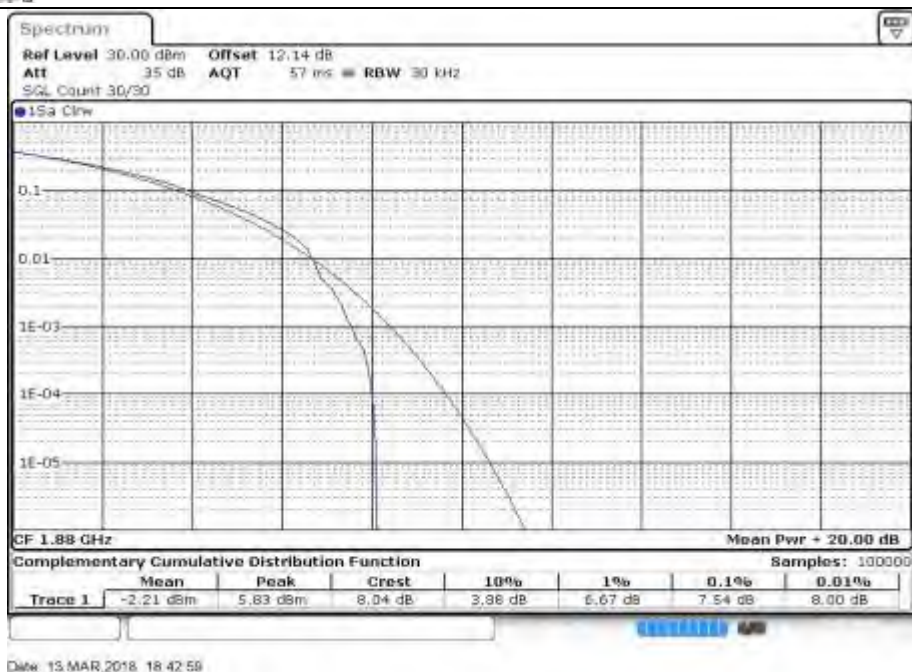
Peak-Average Ratio Plot(5MHz BW,16QAM,Band 2-mid Channel)



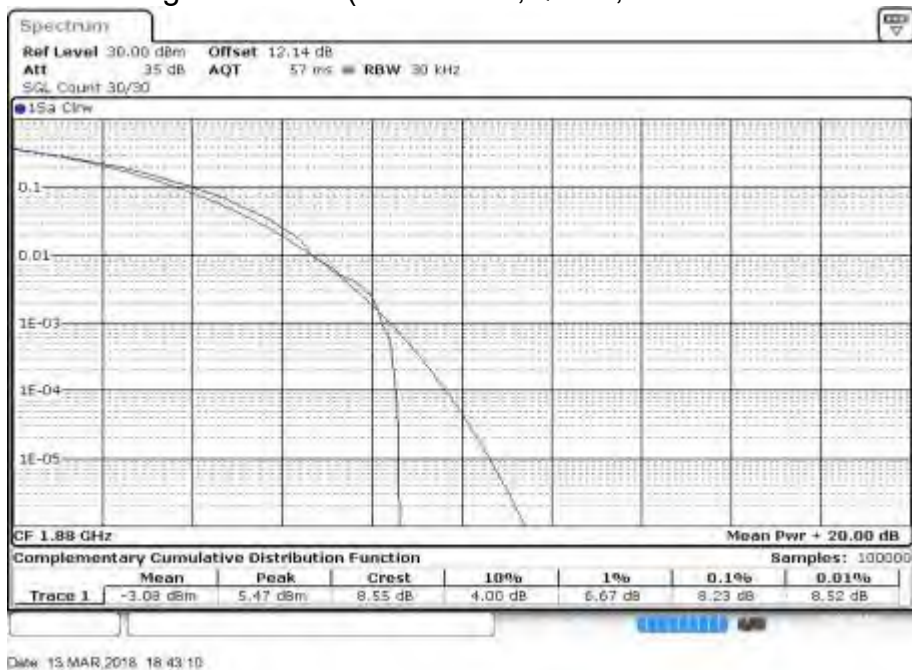
Peak-Average Ratio Plot(10MHz BW,QPSK,Band 2-mid Channel)



Peak-Average Ratio Plot(10MHz BW,16QAM,Band 2-mid Channel)



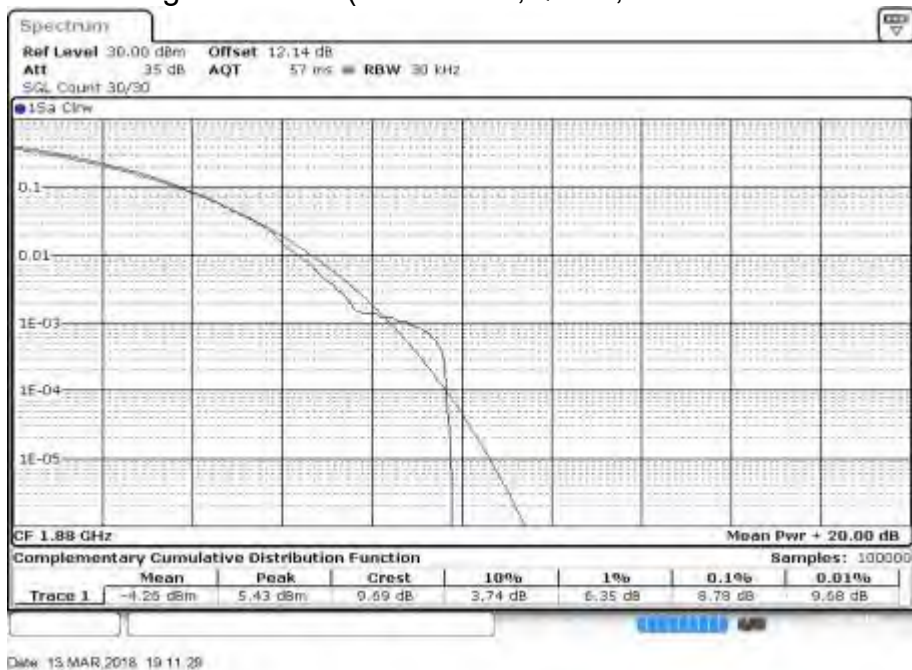
Peak-Average Ratio Plot(15MHz BW,QPSK,Band 2-mid Channel)



Peak-Average Ratio Plot(15MHz BW,16QAM,Band 2-mid Channel)



Peak-Average Ratio Plot(20MHz BW,QPSK,Band 2-mid Channel)



Peak-Average Ratio Plot(20MHz BW,16QAM,Band 2-mid Channel)

5 Spurious Emissions at antenna terminal

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
2	1860	18700	20	100	0	Fig.4	Fig.8

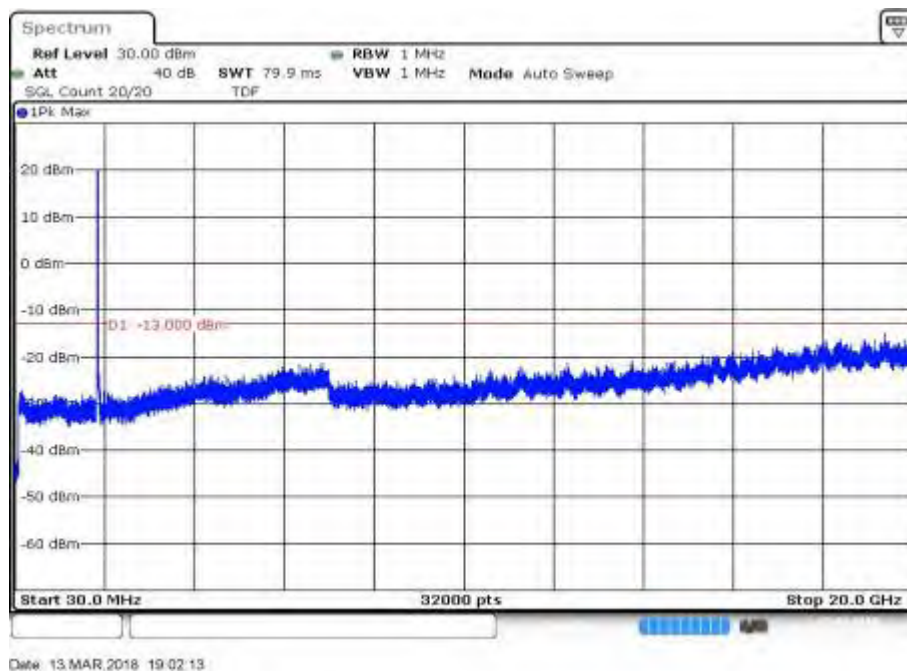


Fig.4

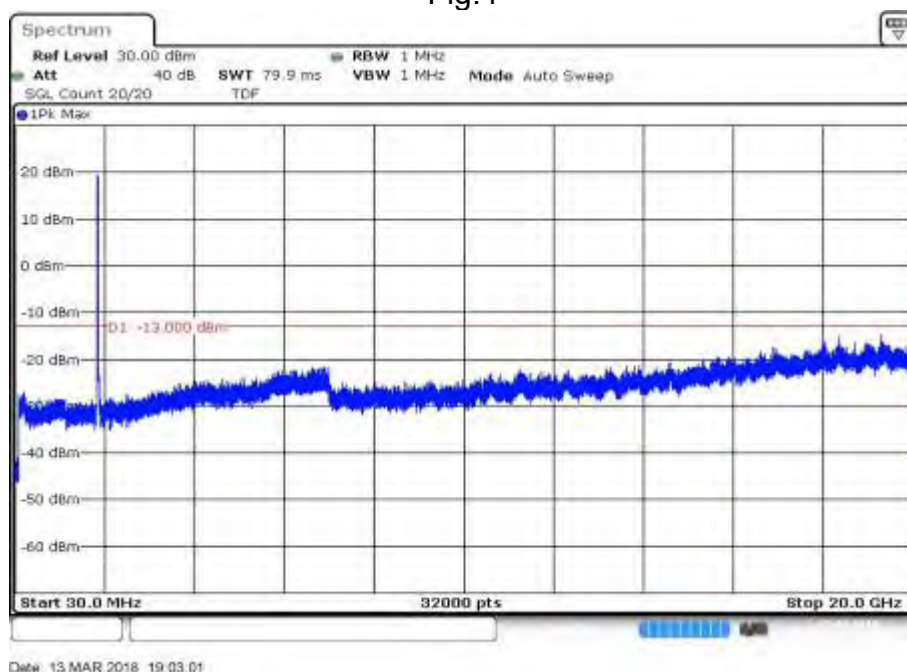


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
2	1880	18900	20	100	0	Fig.4	Fig.8

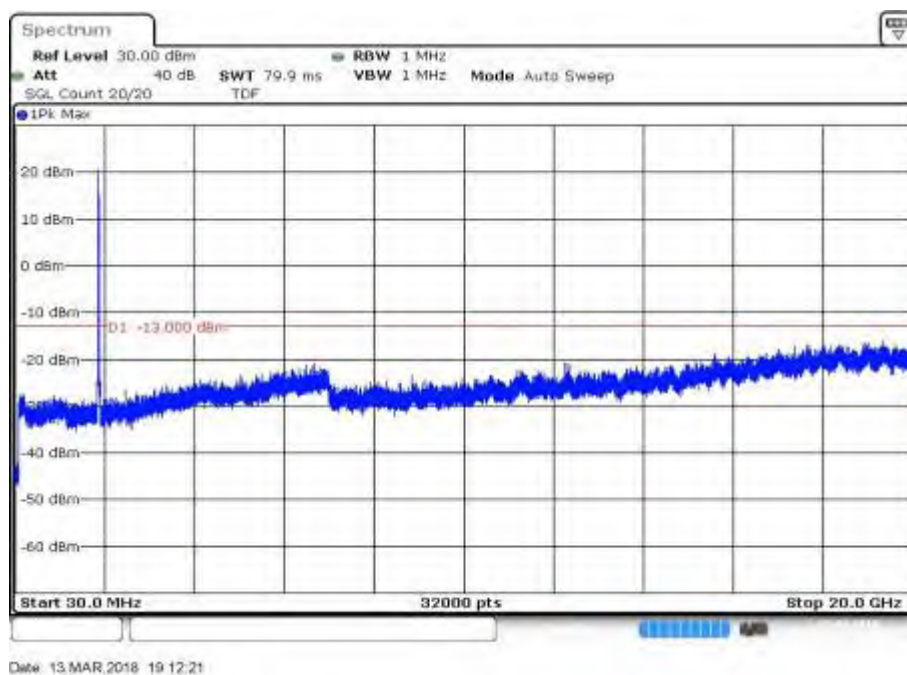


Fig.4

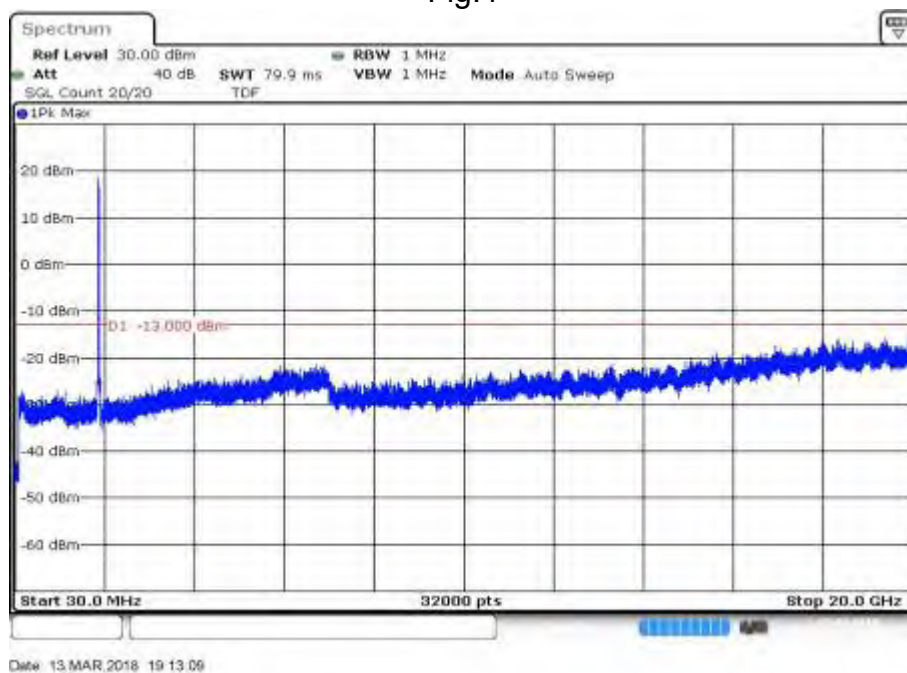


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
2	1900	19100	20	100	0	Fig.4	Fig.8

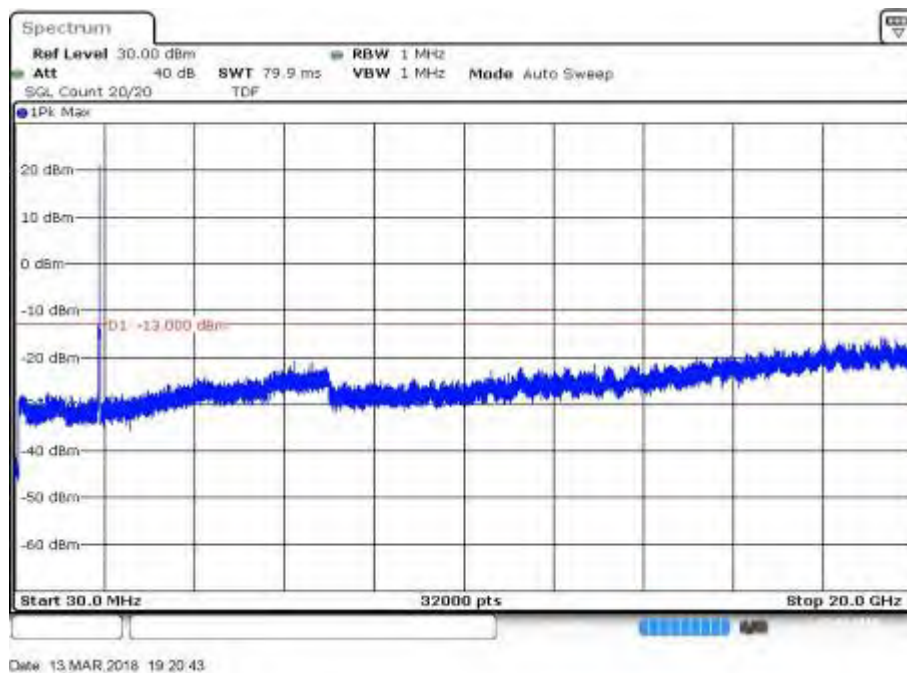


Fig.4

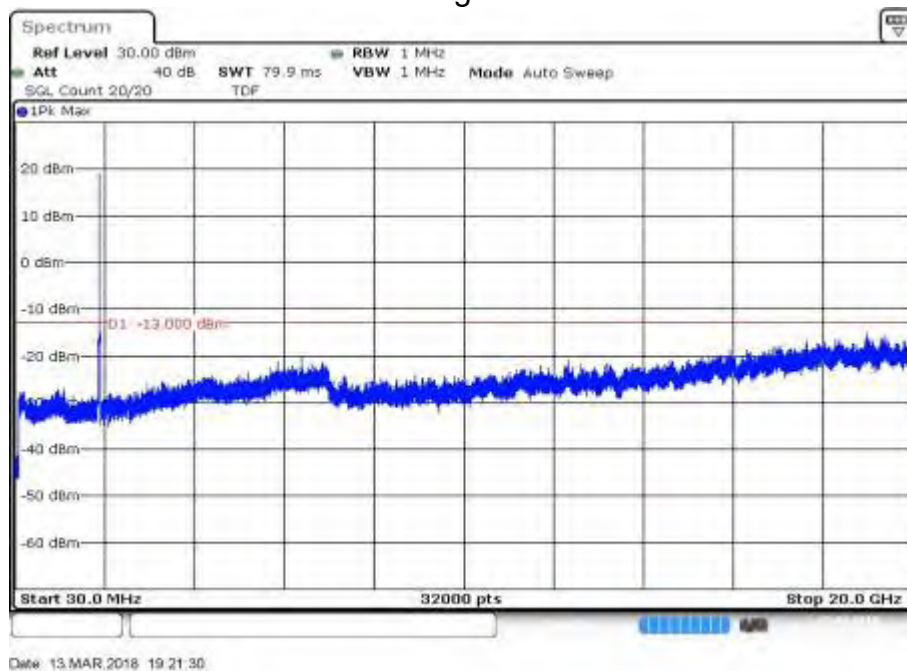


Fig.8

6 Band Edges Compliance

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1850.7	18607	1.4	1	0	Fig.1
				6	0	Fig.4



Fig.1



Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1909.3	19193	1.4	1	0	Fig.1
				6	0	Fig.4



Fig.1

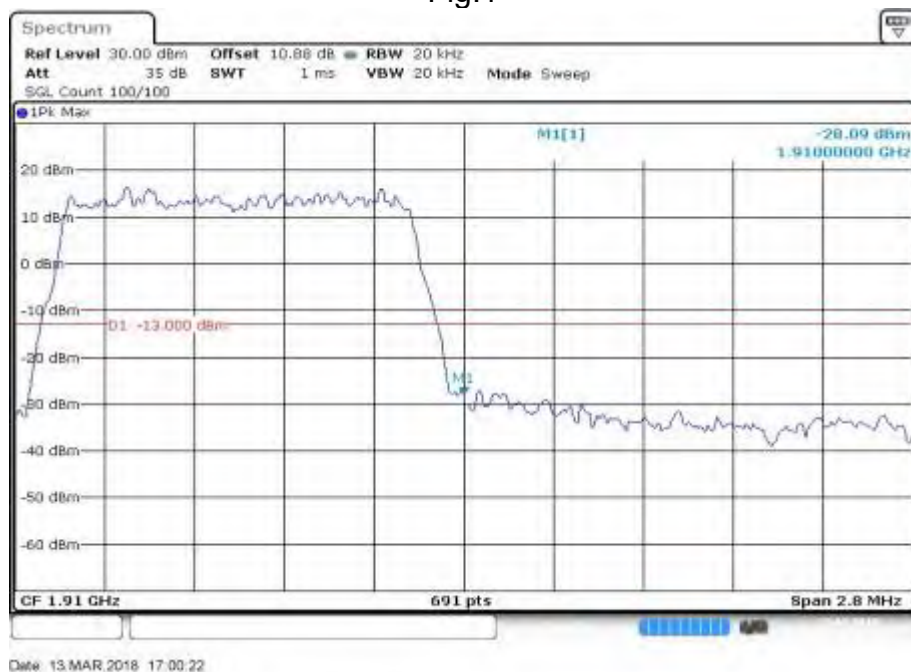


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1851.5	18615	3	1	0	Fig.1
				6	0	Fig.4



Fig.1

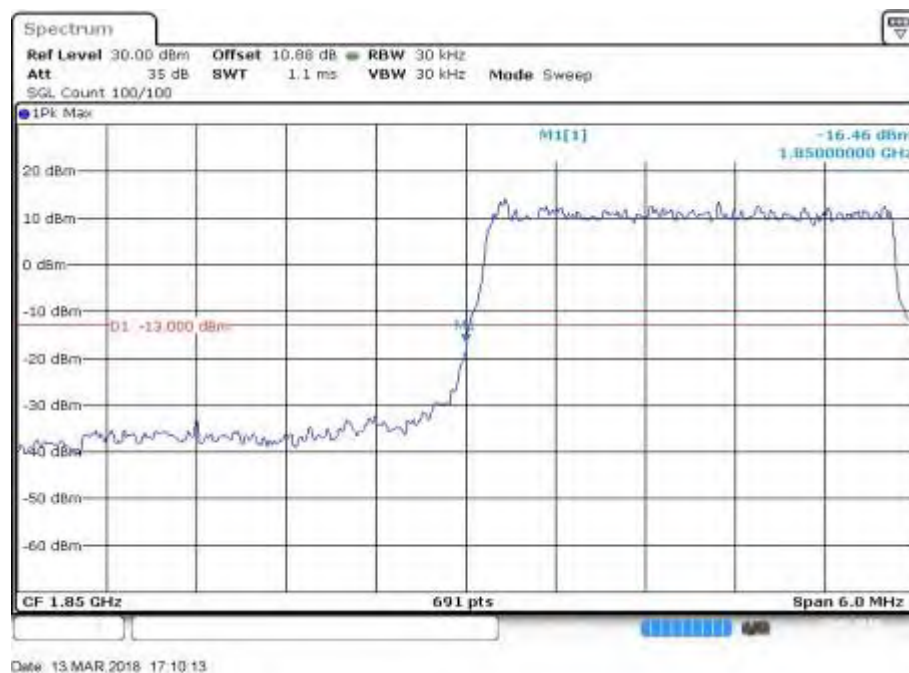


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1908.5	19185	3	1	0	Fig.1
				6	0	Fig.4

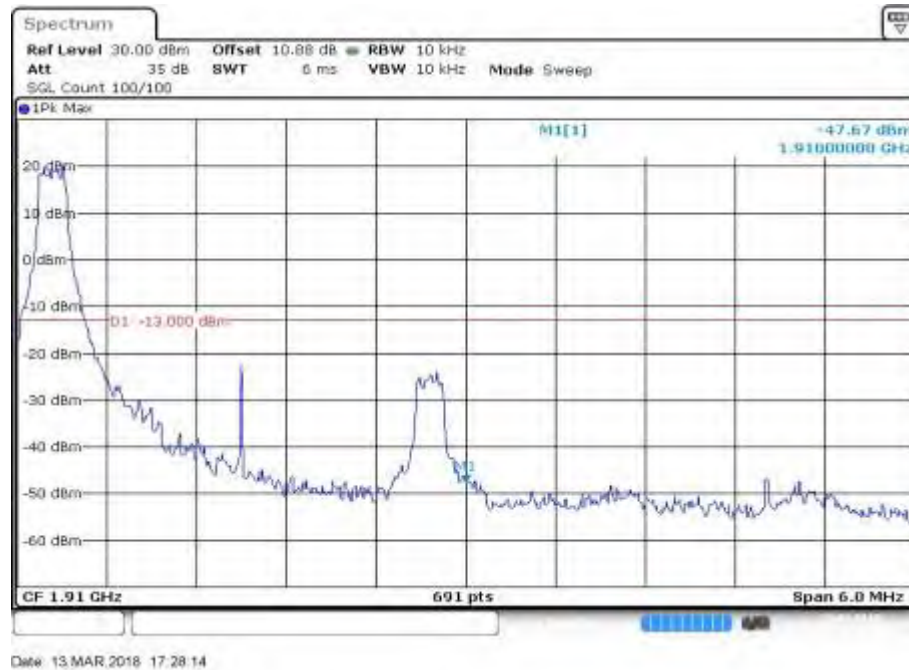


Fig.1

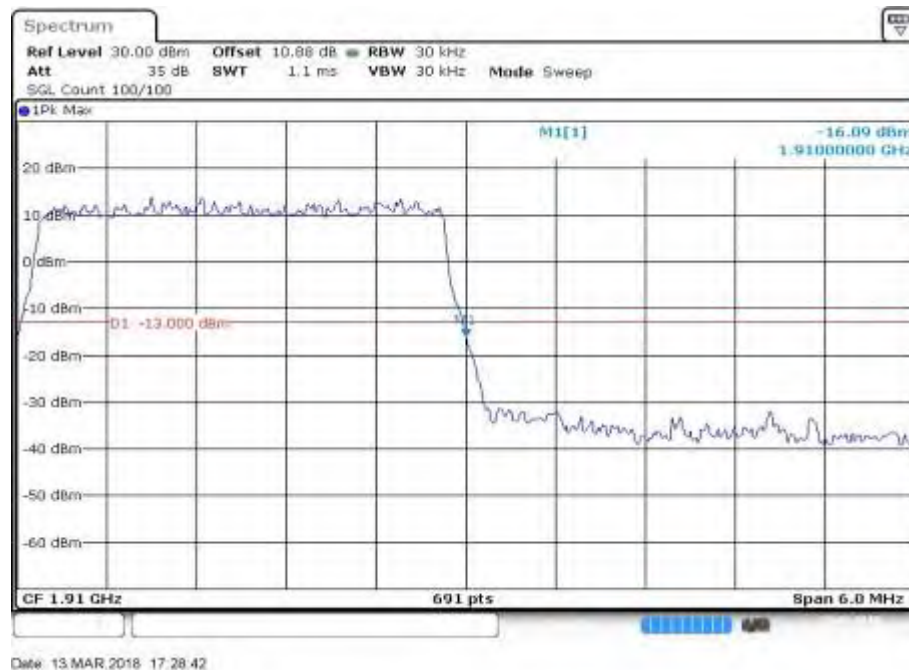


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1852.5	18625	5	1	0	Fig.1
				25	0	Fig.4

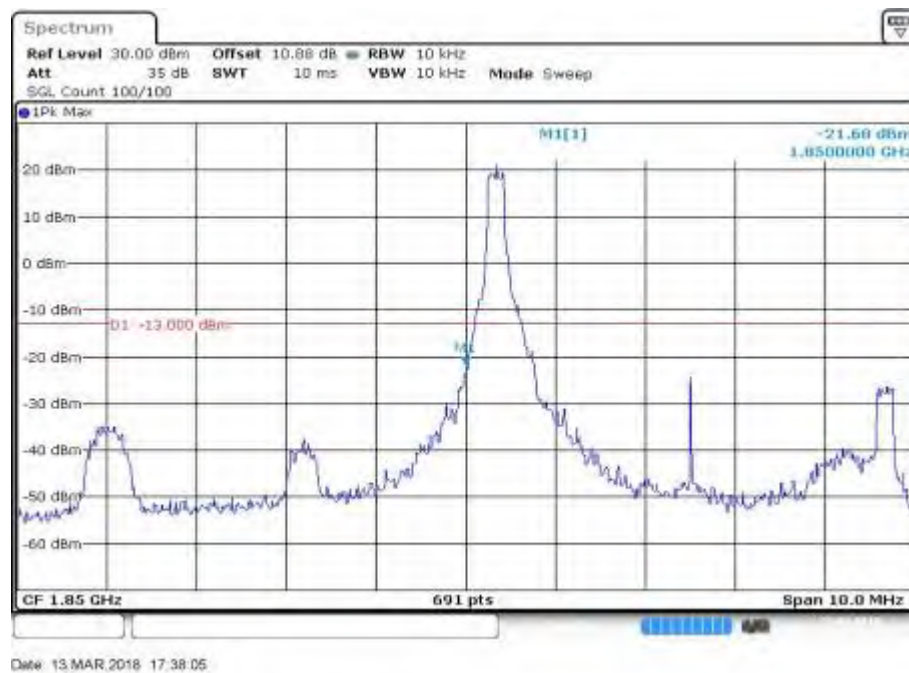


Fig.1

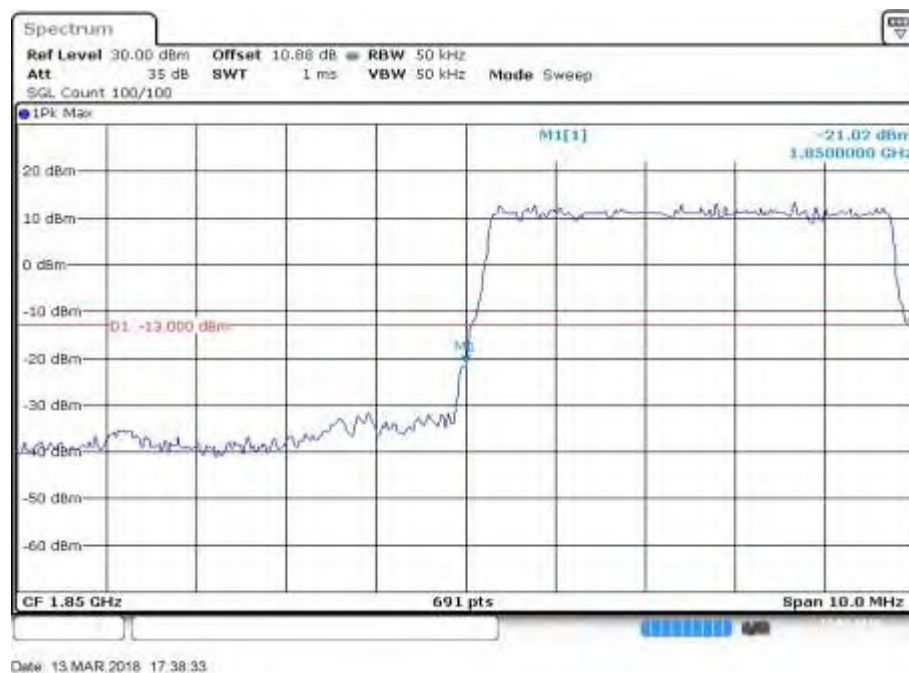


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1907.5	19175	5	1	0	Fig.1
				25	0	Fig.4



Fig.1

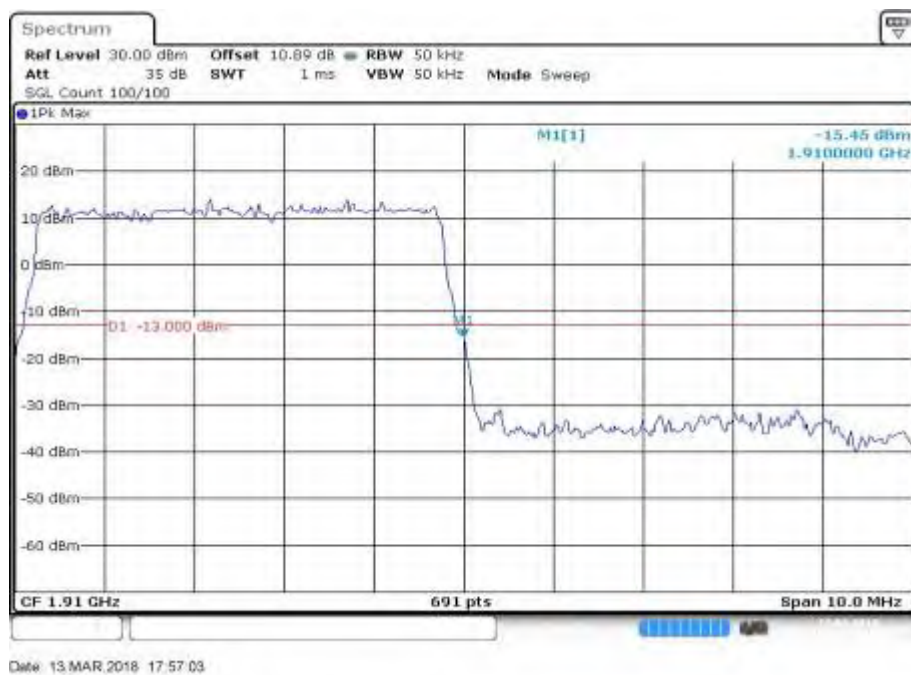


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1855	18650	10	1	0	Fig.1
				50	0	Fig.4

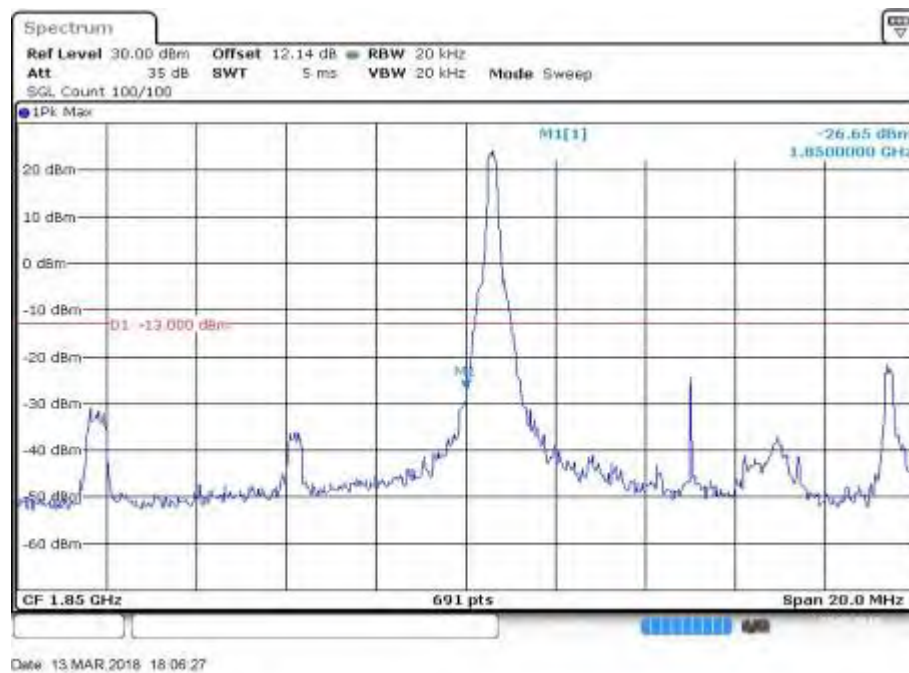


Fig.1

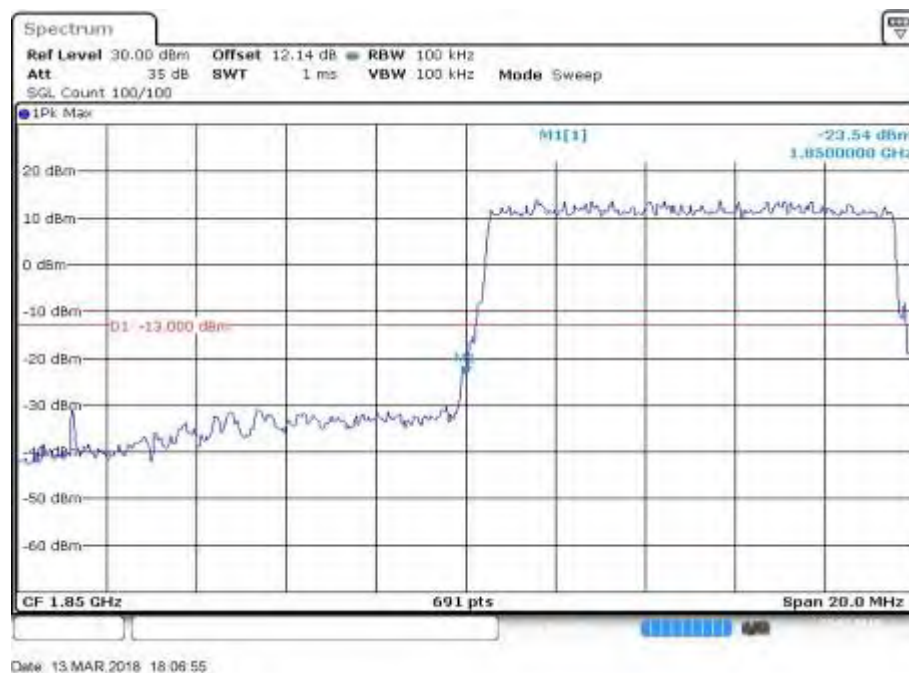


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1905	19150	10	1	0	Fig.1
				50	0	Fig.4

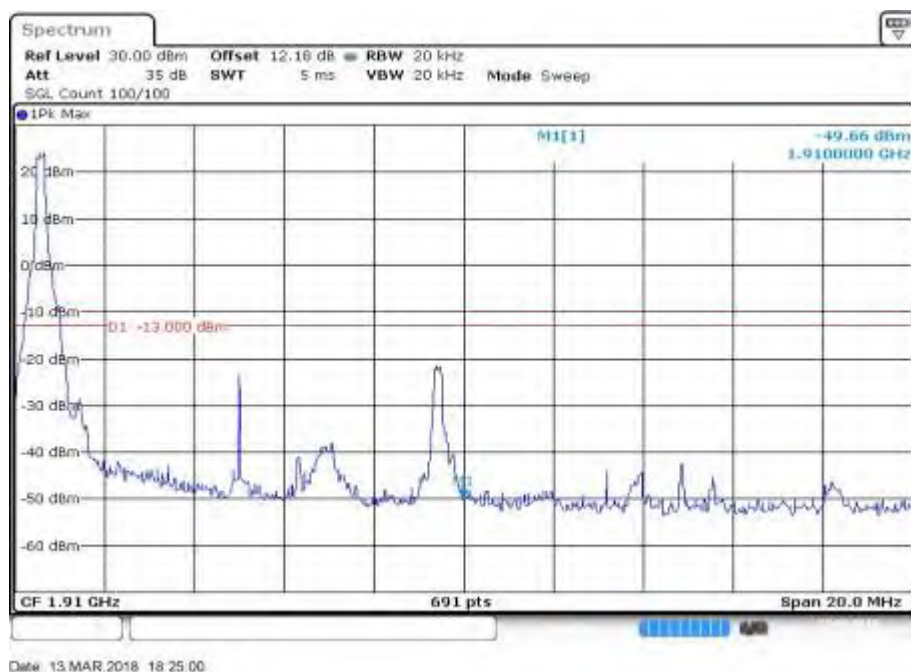


Fig.1

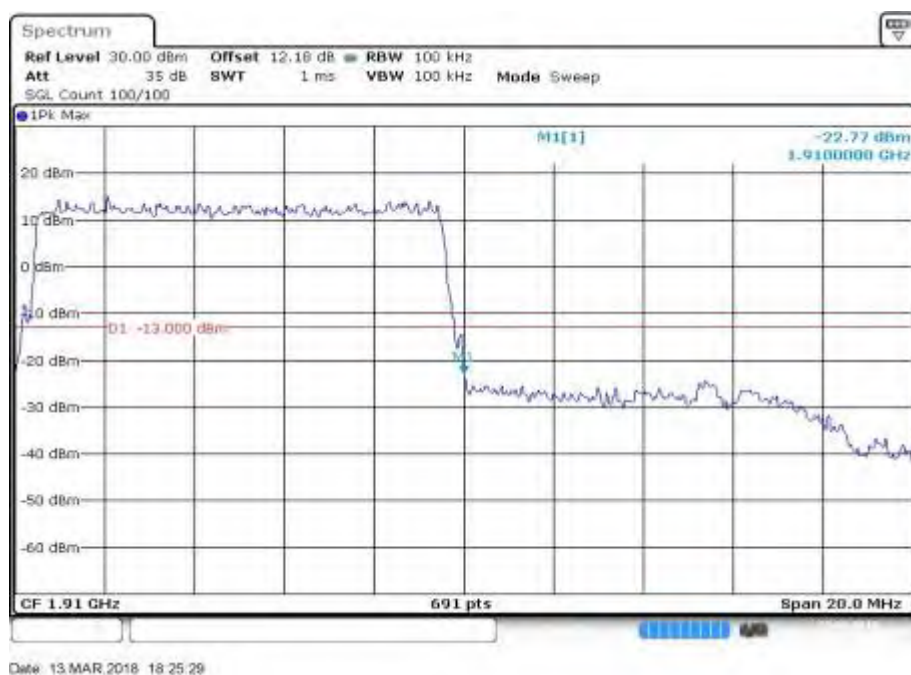


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1857.5	18675	15	1	0	Fig.1
				75	0	Fig.4

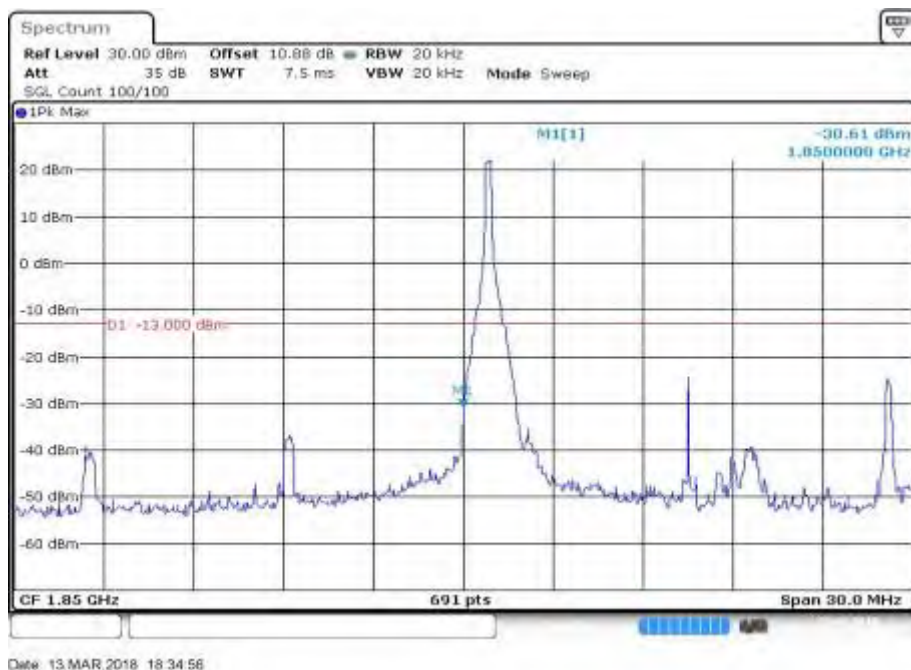


Fig.1

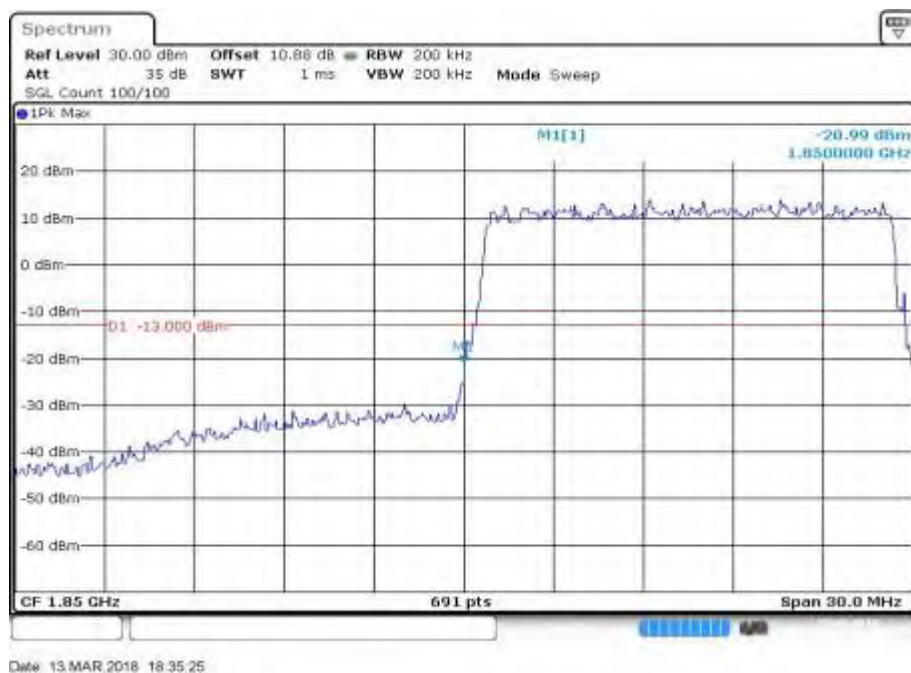


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1902.5	19125	15	1	0	Fig.1
				75	0	Fig.4

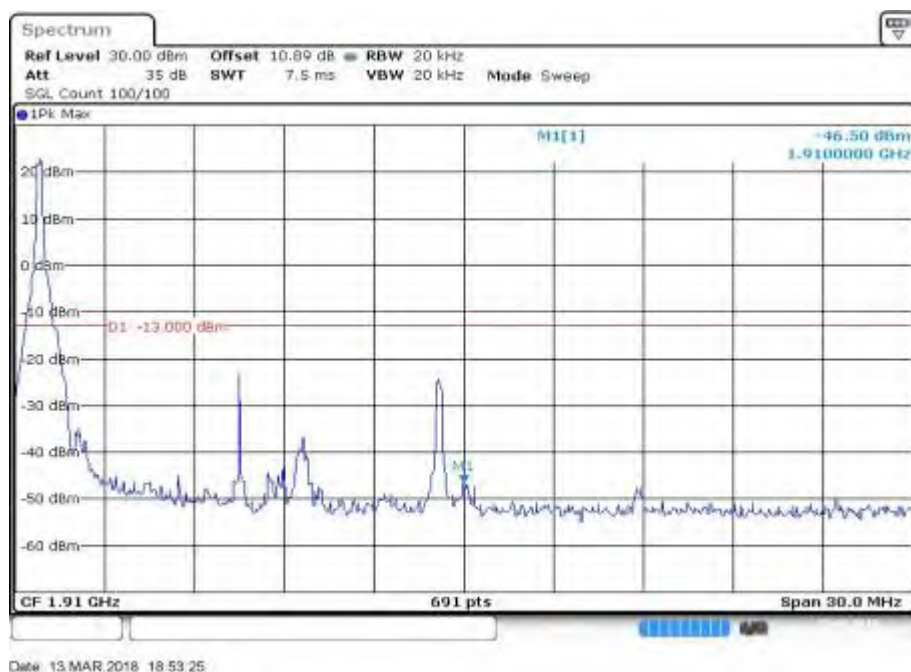


Fig.1



Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1860	18700	20	1	0	Fig.1
				100	0	Fig.4

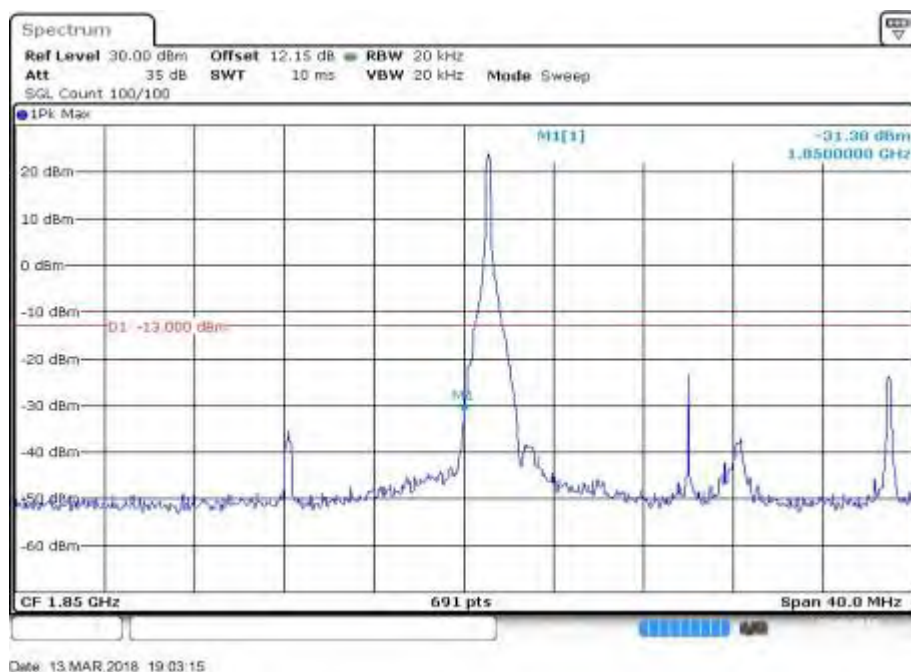


Fig.1

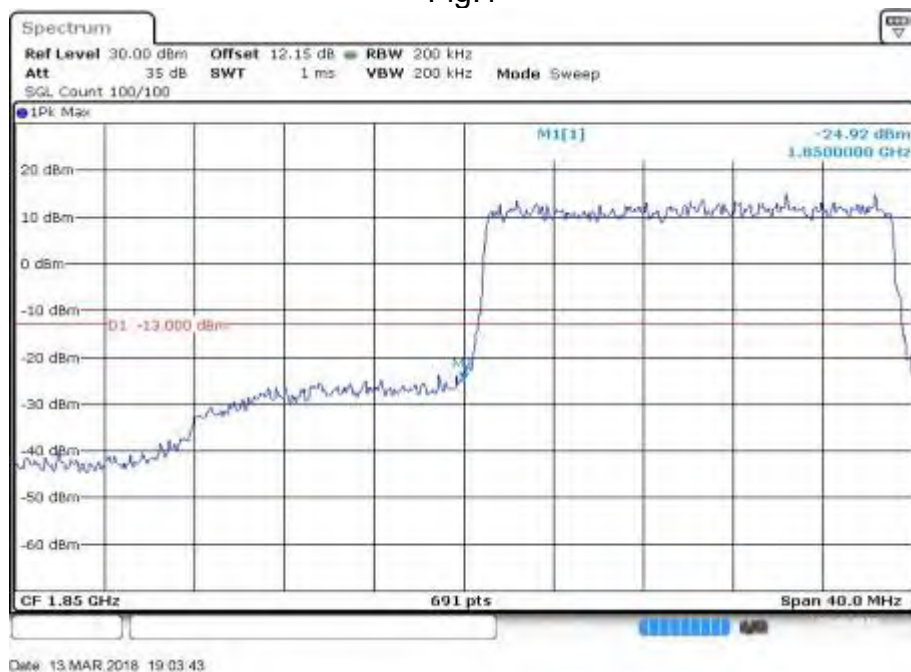


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
2	1900	19100	20	1	0	Fig.1
				100	0	Fig.4

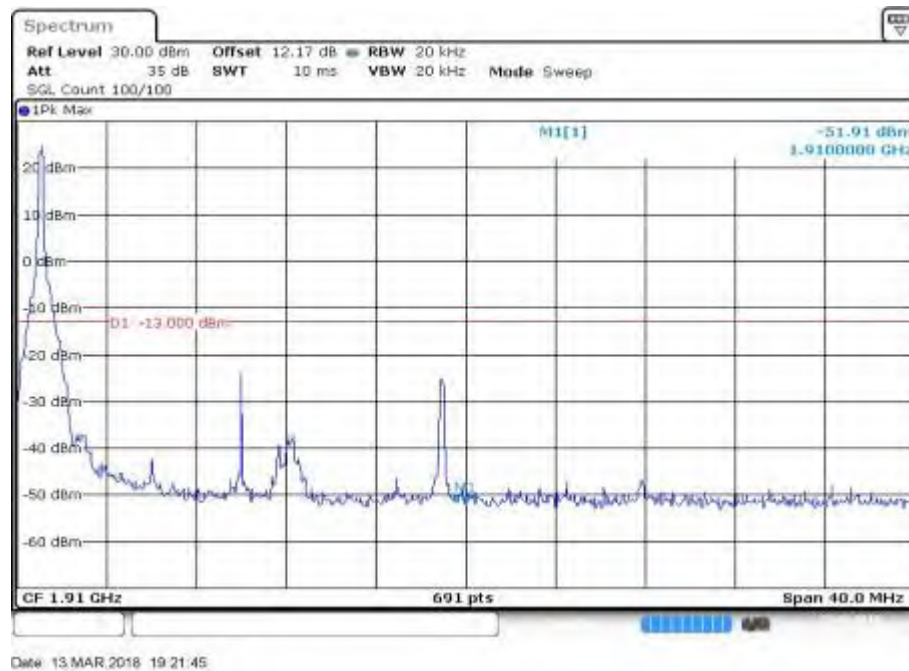


Fig.1

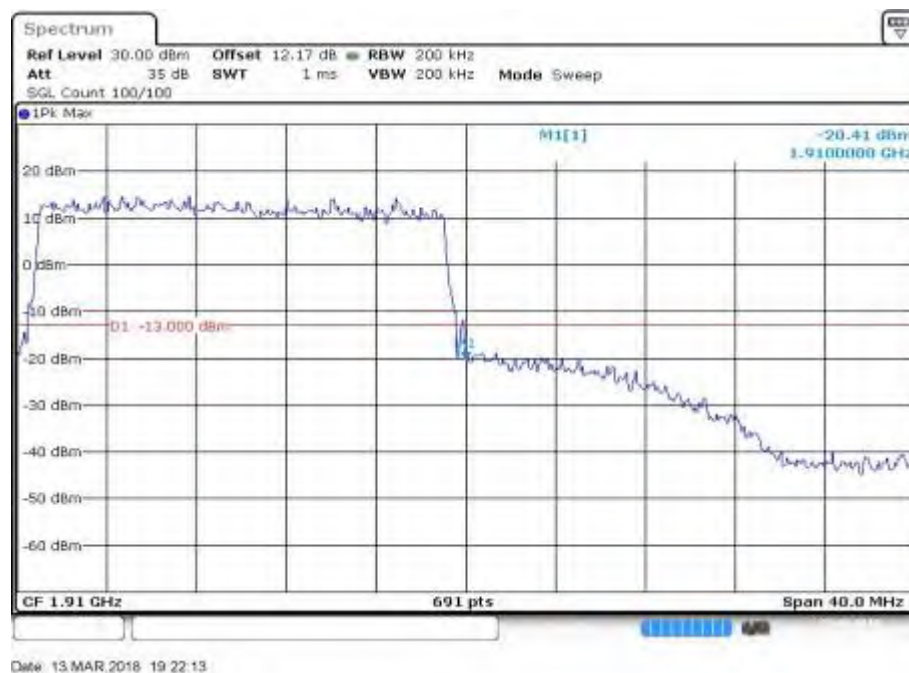


Fig.4

7 Frequency Stability

Test result:

Band	BW	Test Result (ppm)@NV		Test Result (ppm)@NT	
		Temperature(°C)		Voltage	
2	1.4	-30	-0.001	LV	-0.002
		-20	-0.004		
		-10	0.010		
		0	-0.003		
		10	0.014		
		20	-0.006	HV	-0.001
		30	0.008		
		40	0.011		
		50	0.001		
	3	-30	0.005	LV	0.009
		-20	0.006		
		-10	0.004		
		0	0.006		
		10	0.003		
		20	0.006	HV	0.006
		30	0.003		
		40	0.004		
		50	0.004		
	5	-30	0.008	LV	0.007
		-20	0.002		
		-10	0.006		
		0	0.004		
		10	0.006		
		20	0.006	HV	0.004
		30	0.004		
		40	0.003		
		50	0.002		
	10	-30	0.004	LV	0.005
		-20	0.005		
		-10	0.003		
		0	0.003		
		10	0.003		



		20	0.004	HV	0.007
		30	0.005		
		40	0.003		
		50	0.005		
	15	-30	0.004	LV	0.004
		-20	0.002		
		-10	0.001		
		0	0.005		
		10	0.003	HV	0.004
		20	0.004		
		30	0.004		
		40	0.006		
	20	50	0.002	LV	0.003
		-30	0.004		
		-20	0.006		
		-10	0.005		
		0	0.004	HV	0.007
		10	0.003		
		20	0.003		
		30	0.004		
		40	0.005		
		50	0.004		

LTE Band 4

1 RF Power Output

Test result:

Antenna Gain: 0.45dBi

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1710.7	19957	1.4	1	0	20.6	21.1
				1	5	20.5	21.0
				3	2	20.5	21.0
				6	0	19.5	20.0
	1732.5	20175		1	0	20.4	20.9
				1	5	20.4	20.9
				3	2	20.4	20.9
				6	0	19.4	19.9
	1754.3	20393		1	0	20.8	21.3
				1	5	20.8	21.3
				3	2	17.7	18.2
				6	0	19.7	20.2

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1710.7	19957	1.4	1	0	19.6	20.1
				1	5	19.6	20.1
				3	2	19.8	20.3
				6	0	18.6	19.1
	1732.5	20175		1	0	19.5	20.0
				1	5	19.5	20.0
				3	2	19.4	19.9
				6	0	18.4	18.9
	1754.3	20393		1	0	19.8	20.3
				1	5	19.8	20.3
				3	2	19.9	20.4
				6	0	18.8	19.3

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1711.5	19965	3	1	0	20.7	21.2
				1	14	20.6	21.1
				8	4	19.6	20.1
				15	0	19.6	20.1
	1732.5	20175		1	0	20.6	21.1
				1	14	20.5	21.0
				8	4	19.7	20.2
				15	0	19.7	20.2
	1753.5	20385		1	0	20.5	21.0
				1	14	20.5	21.0
				8	4	19.5	20.0
				15	0	19.5	20.0

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1711.5	19965	3	1	0	19.9	20.4
				1	14	19.8	20.3
				8	4	18.6	19.1
				15	0	18.7	19.2
	1732.5	20175		1	0	20.2	20.7
				1	14	20.2	20.7
				8	4	18.8	19.3
				15	0	18.7	19.2
	1753.5	20385		1	0	19.6	20.1
				1	14	19.6	20.1
				8	4	18.4	18.9
				15	0	18.4	18.9

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1712.5	19975	5	1	0	20.7	21.2
				1	24	20.6	21.1
				12	6	19.6	20.1
				25	0	19.6	20.1
	1732.5	20175		1	0	20.6	21.1
				1	24	20.4	20.9
				12	6	19.5	20.0
				25	0	19.5	20.0
	1752.5	20375		1	0	18.1	18.6
				1	24	17.7	18.2
				12	6	19.7	20.2
				25	0	19.7	20.2

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1712.5	19975	5	1	0	19.6	20.1
				1	24	19.6	20.1
				12	6	18.6	19.1
				25	0	18.7	19.2
	1732.5	20175		1	0	19.8	20.3
				1	24	19.7	20.2
				12	6	18.6	19.1
				25	0	18.5	19.0
	1752.5	20375		1	0	19.9	20.4
				1	24	19.8	20.3
				12	6	18.6	19.1
				25	0	18.8	19.3

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1715	20000	10	1	0	20.7	21.2
				1	49	20.6	21.1
				24	12	19.7	20.2
				50	0	19.7	20.2
	1732.5	20175		1	0	20.6	21.1
				1	49	20.4	20.9
				24	12	19.4	19.9
				50	0	19.5	20.0
	1750	20350		1	0	20.9	21.4
				1	49	20.8	21.3
				24	12	19.7	20.2
				50	0	19.7	20.2

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1715	20000	10	1	0	20.3	20.8
				1	49	20.2	20.7
				24	12	18.7	19.2
				50	0	18.6	19.1
	1732.5	20175		1	0	19.6	20.1
				1	49	19.6	20.1
				24	12	18.5	19.0
				50	0	18.5	19.0
	1750	20350		1	0	19.9	20.4
				1	49	19.9	20.4
				24	12	18.7	19.2
				50	0	18.7	19.2

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1717.5	20025	15	1	0	20.9	21.4
				1	74	20.8	21.3
				40	18	19.8	20.3
				75	0	19.8	20.3
	1732.5	20175		1	0	20.8	21.3
				1	74	20.6	21.1
				40	18	19.6	20.1
				75	0	19.7	20.2
	1747.5	20325		1	0	20.8	21.3
				1	74	20.5	21.0
				40	18	19.5	20.0
				75	0	19.6	20.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1717.5	20025	15	1	0	20.5	21.0
				1	74	20.3	20.8
				40	18	18.9	19.4
				75	0	18.8	19.3
	1732.5	20175		1	0	20.4	20.9
				1	74	20.2	20.7
				40	18	18.7	19.2
				75	0	18.6	19.1
	1747.5	20325		1	0	19.9	20.4
				1	74	19.7	20.2
				40	18	18.6	19.1
				75	0	18.6	19.1



Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1720	20050	20	1	0	21.0	21.5
				1	99	20.8	21.3
				50	25	19.8	20.3
				100	0	19.9	20.4
	1732.5	20175		1	0	20.9	21.4
				1	99	20.7	21.2
				50	25	19.6	20.1
				100	0	19.7	20.2
	1745	20300		1	0	20.7	21.2
				1	99	20.5	21.0
				50	25	19.5	20.0
				100	0	19.6	20.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1720	20050	20	1	0	20.2	20.7
				1	99	20.1	20.6
				50	25	18.7	19.2
				100	0	18.8	19.3
	1732.5	20175		1	0	20.1	20.6
				1	99	19.9	20.4
				50	25	18.6	19.1
				100	0	18.7	19.2
	1745	20300		1	0	20.3	20.8
				1	99	20.1	20.6
				50	25	18.5	19.0
				100	0	18.6	19.1

2 Occupied Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1710.7	19957	1.4	6	0	1.106	Fig.4	1.094	Fig.8

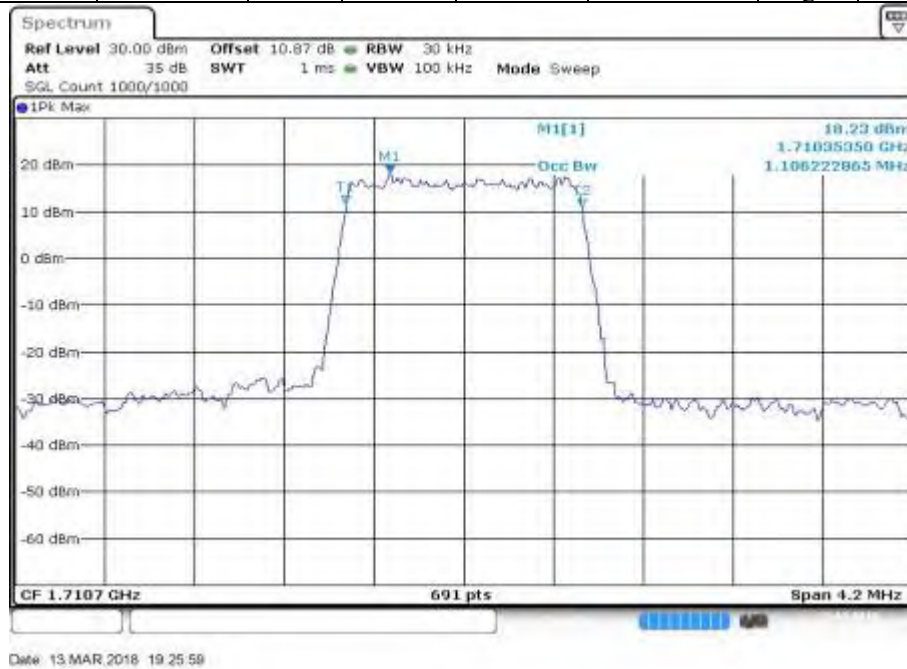


Fig.4

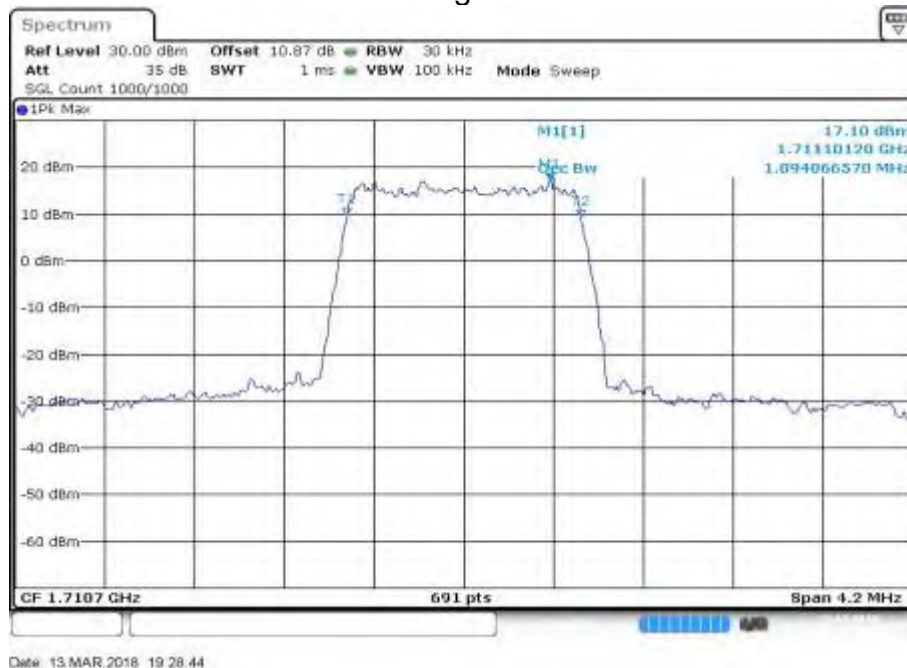


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	1.4	6	0	1.094	Fig.4	1.100	Fig.8

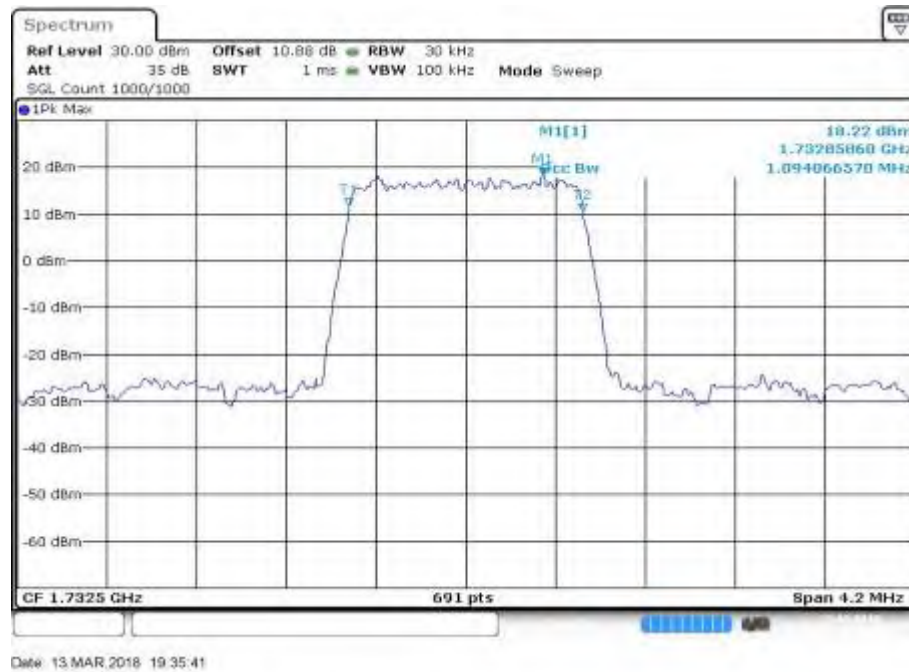


Fig.4

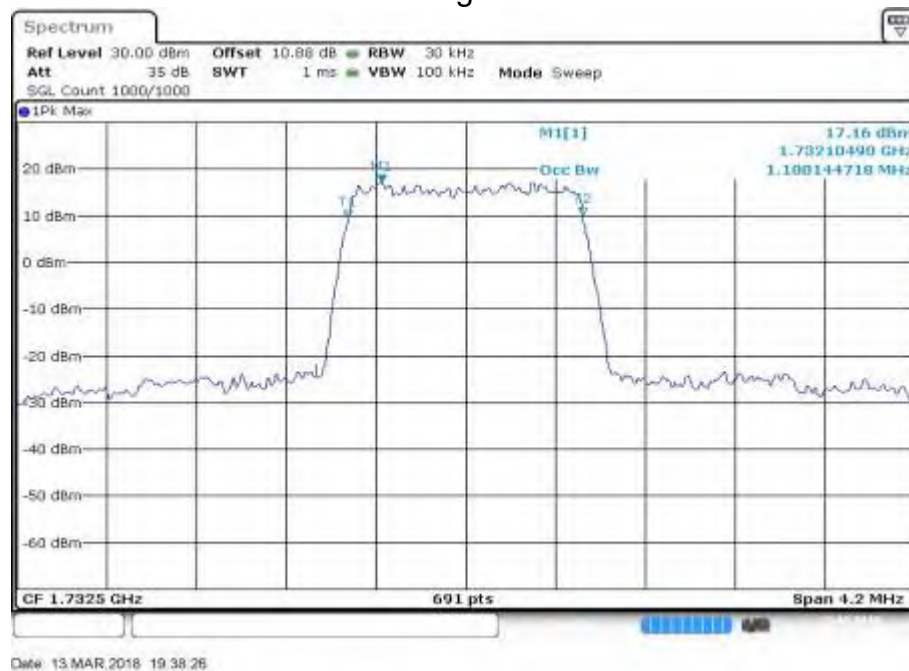


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1754.3	20393	1.4	6	0	1.094	Fig.4	1.100	Fig.8

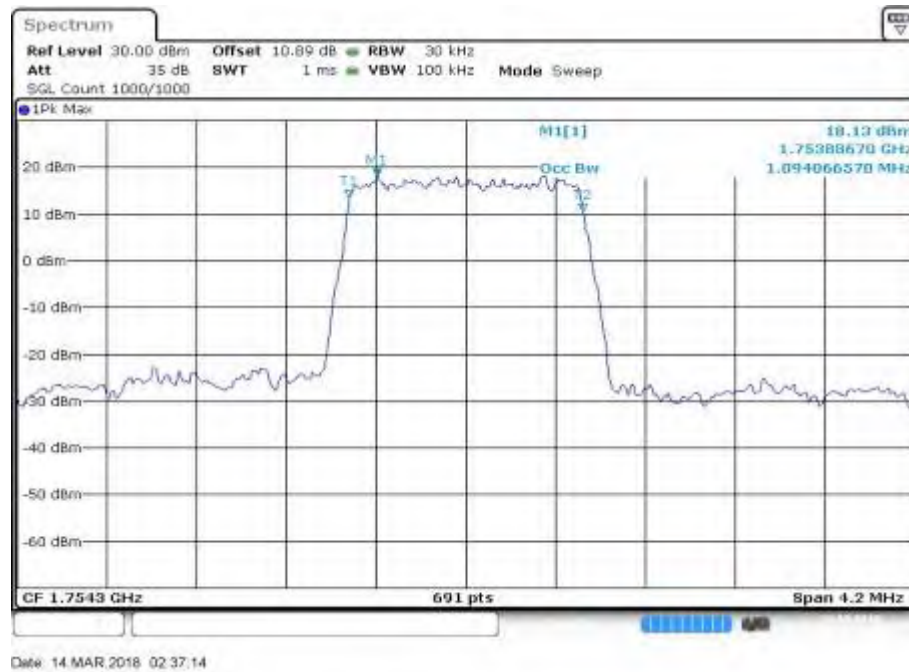


Fig.4

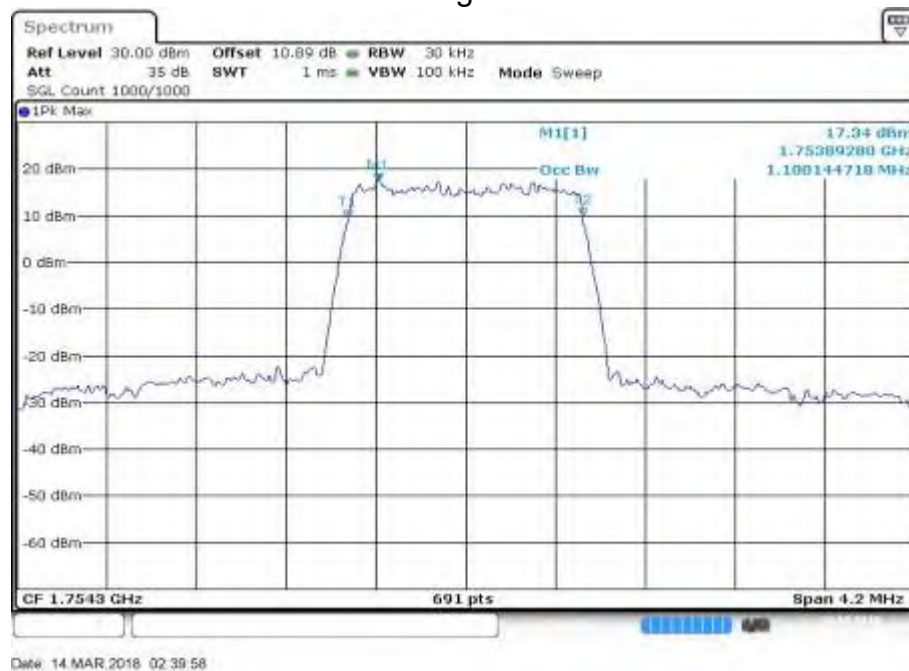


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1711.5	19965	3	15	0	2.735	Fig.4	2.748	Fig.8

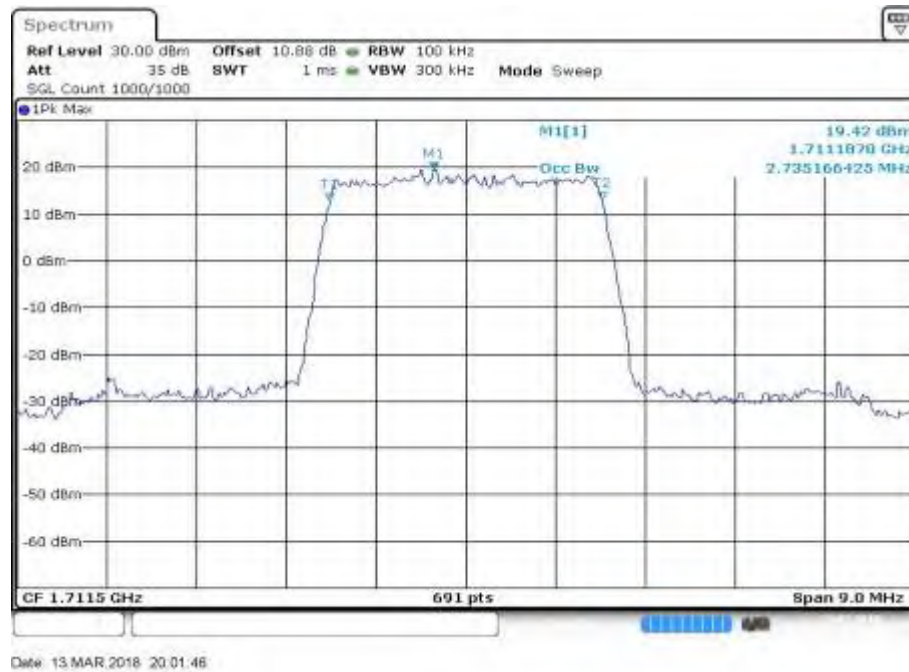


Fig.4

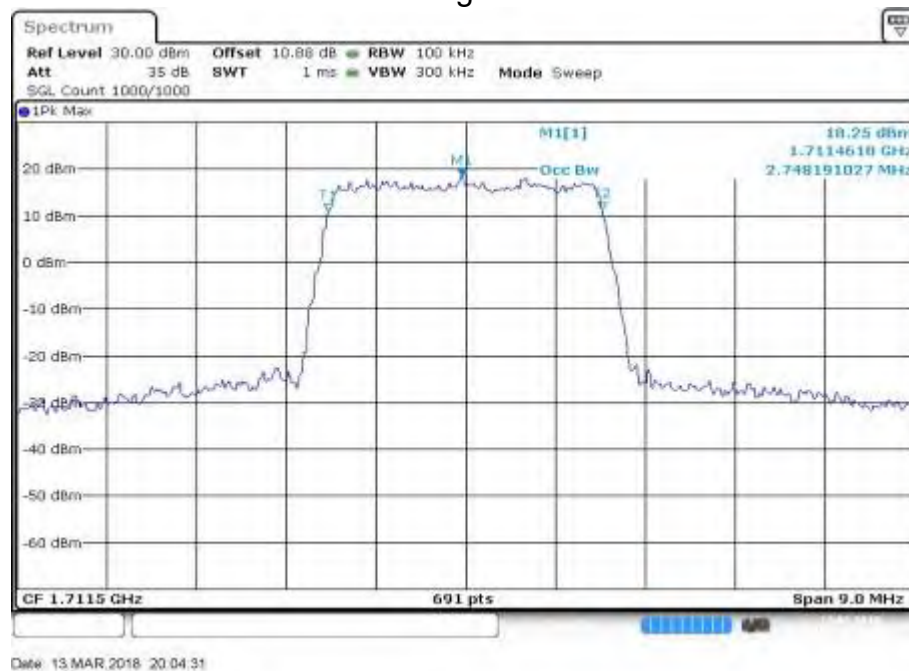


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	3	15	0	2.735	Fig.4	2.735	Fig.8

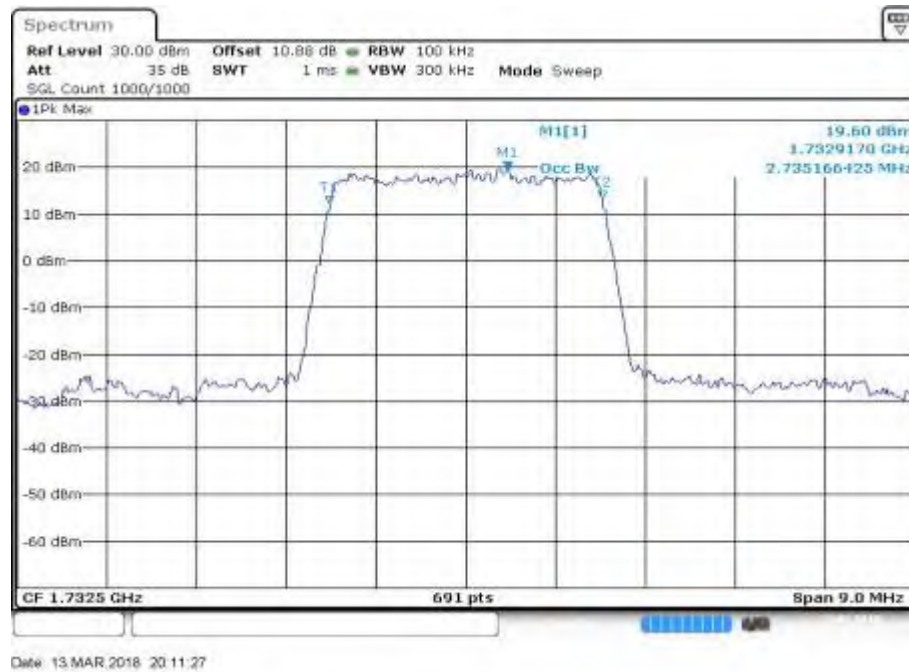


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1753.5	20385	3	15	0	2.748	Fig.4	2.735	Fig.8

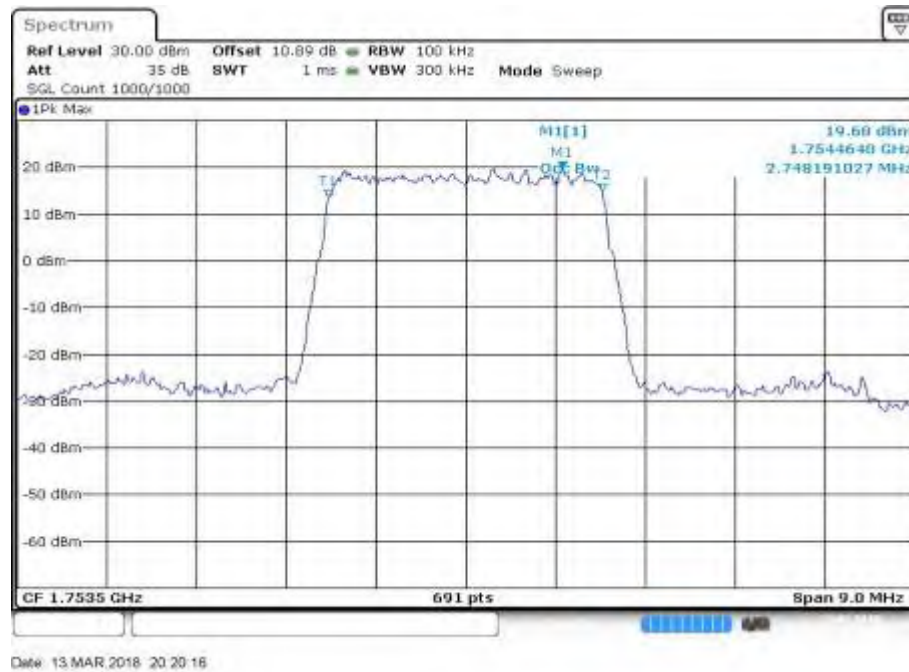


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1712.5	19975	5	25	0	4.515	Fig.4	4.515	Fig.8

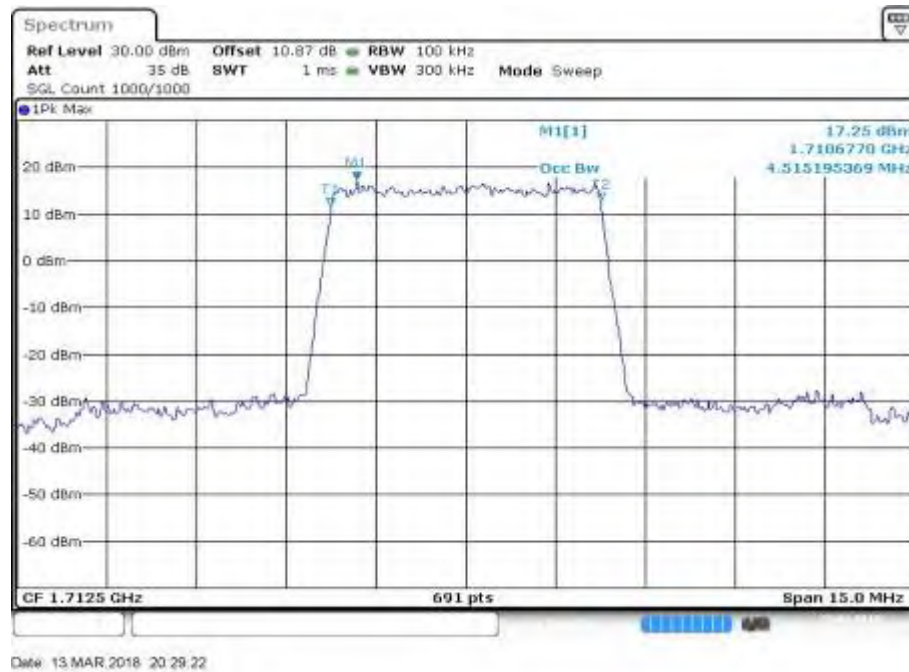


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	5	25	0	4.537	Fig.4	4.515	Fig.8

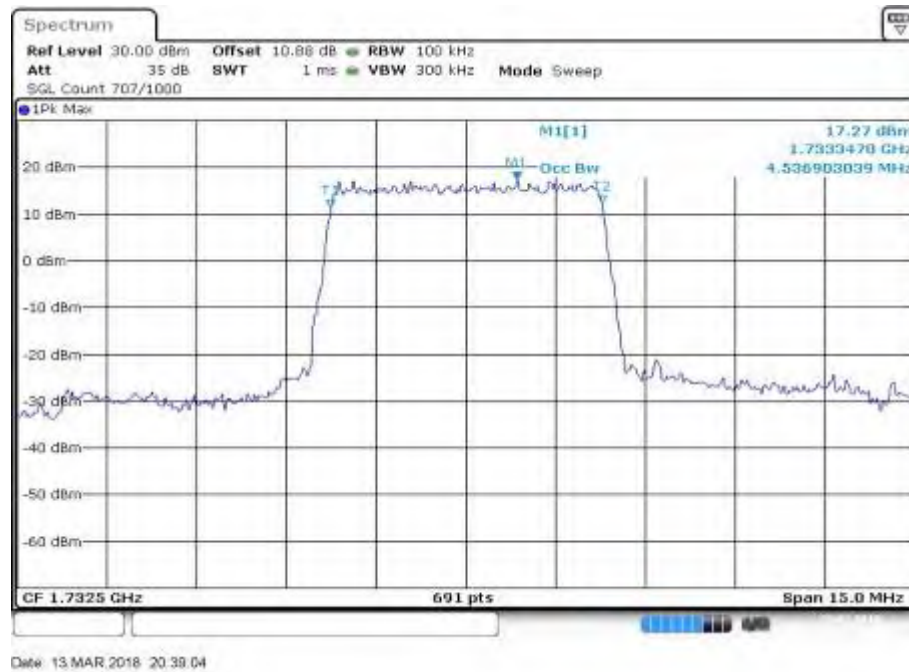


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1752.5	20375	5	25	0	4.515	Fig.4	4.515	Fig.8

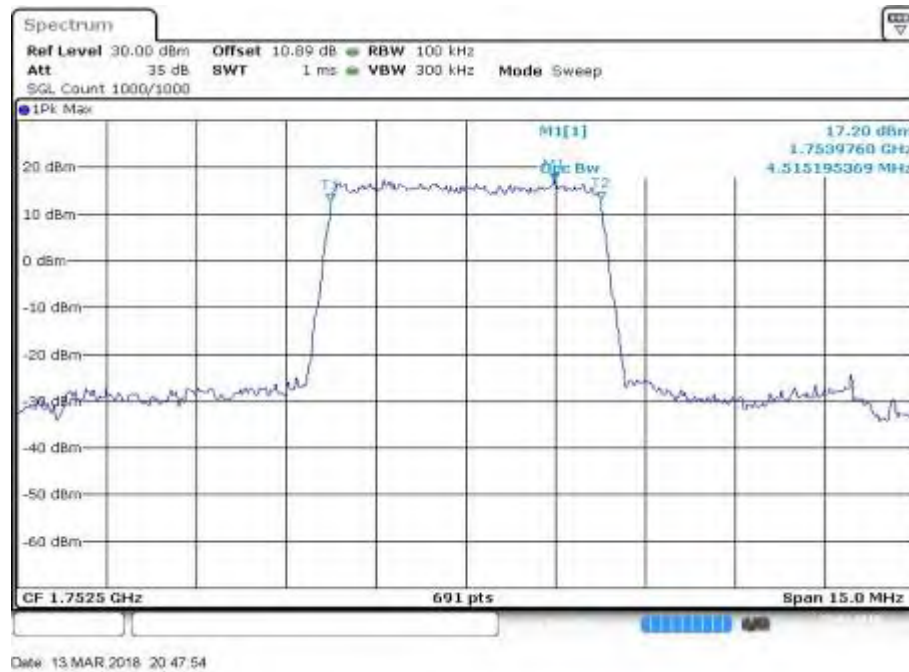


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1715	20000	10	50	0	9.074	Fig.4	9.074	Fig.8

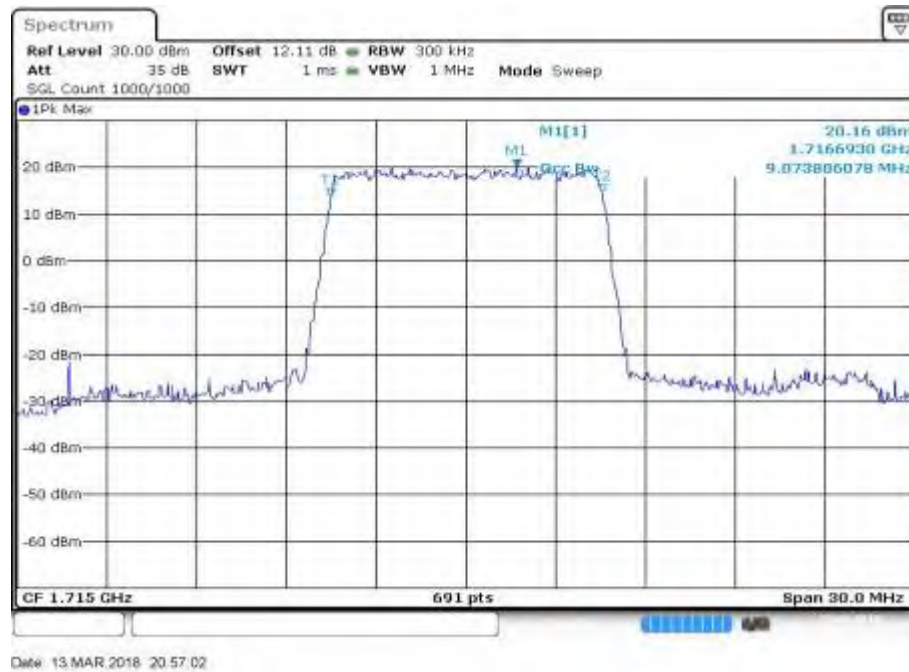


Fig.4

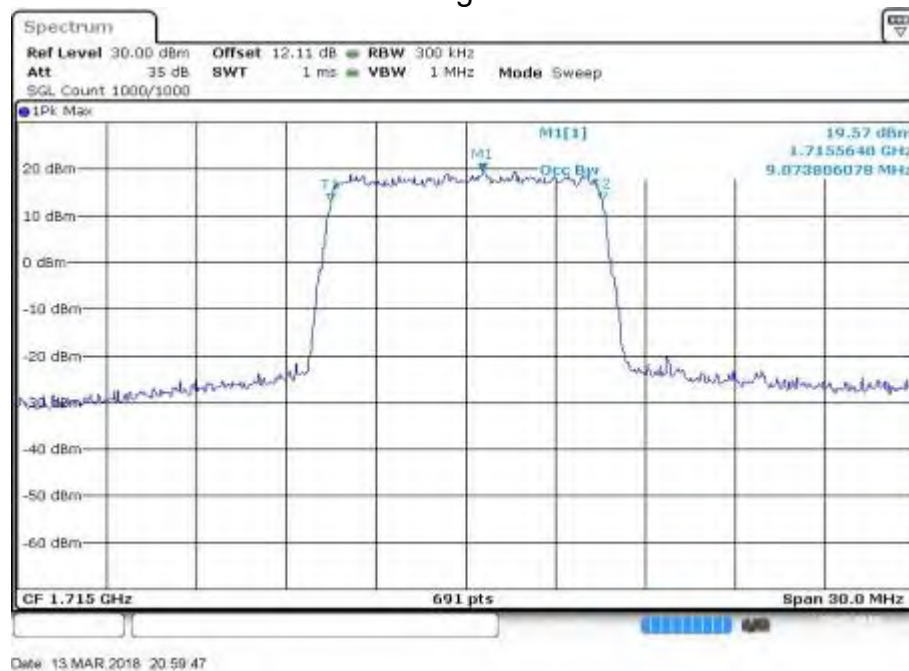


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	10	50	0	9.030	Fig.4	9.030	Fig.8

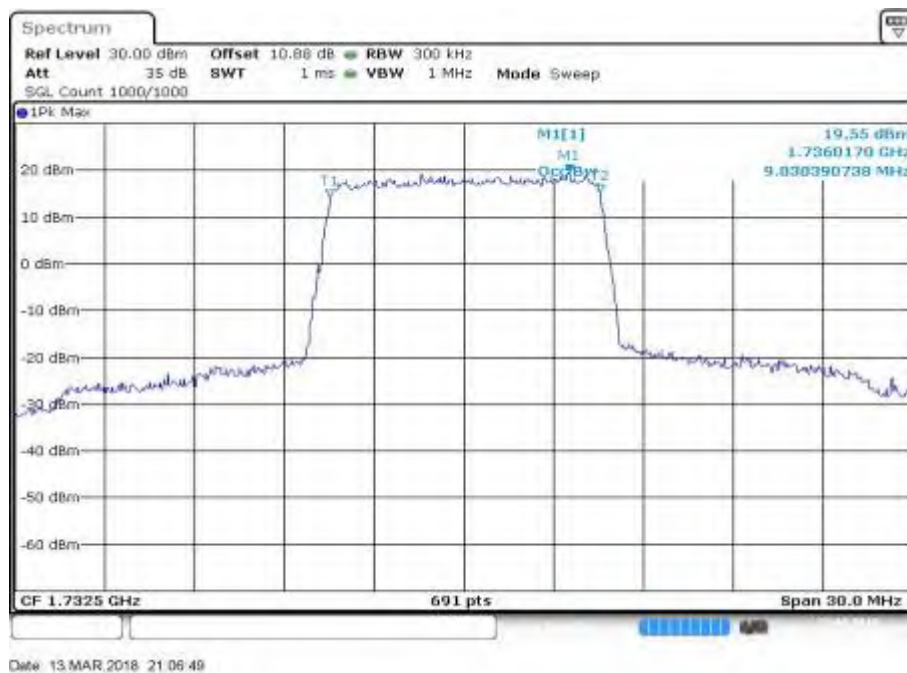


Fig.4

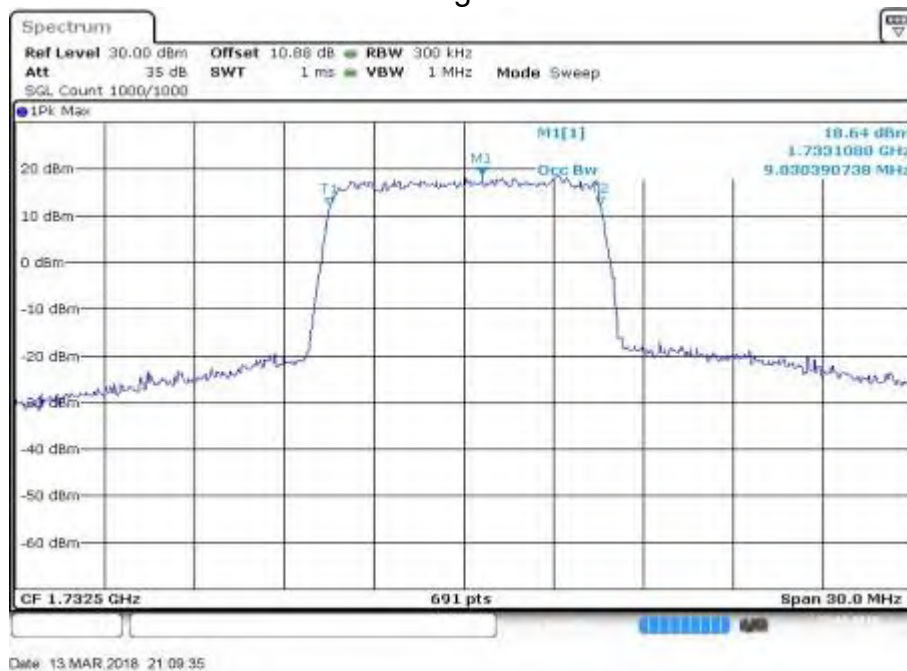


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1750	20350	10	50	0	9.030	Fig.4	9.074	Fig.8

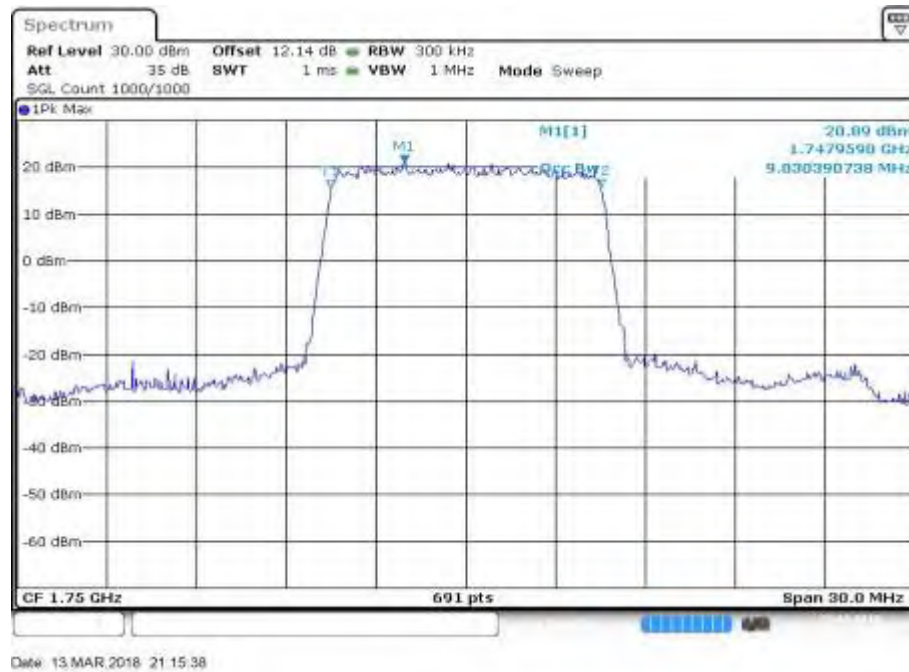


Fig.4

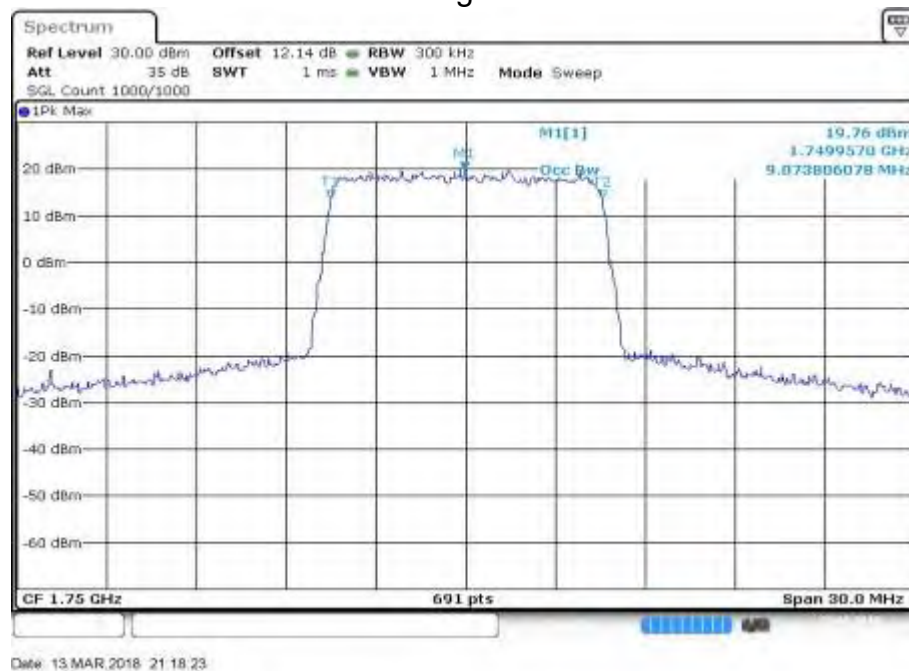


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1717.5	20025	15	75	0	13.480	Fig.4	13.480	Fig.8

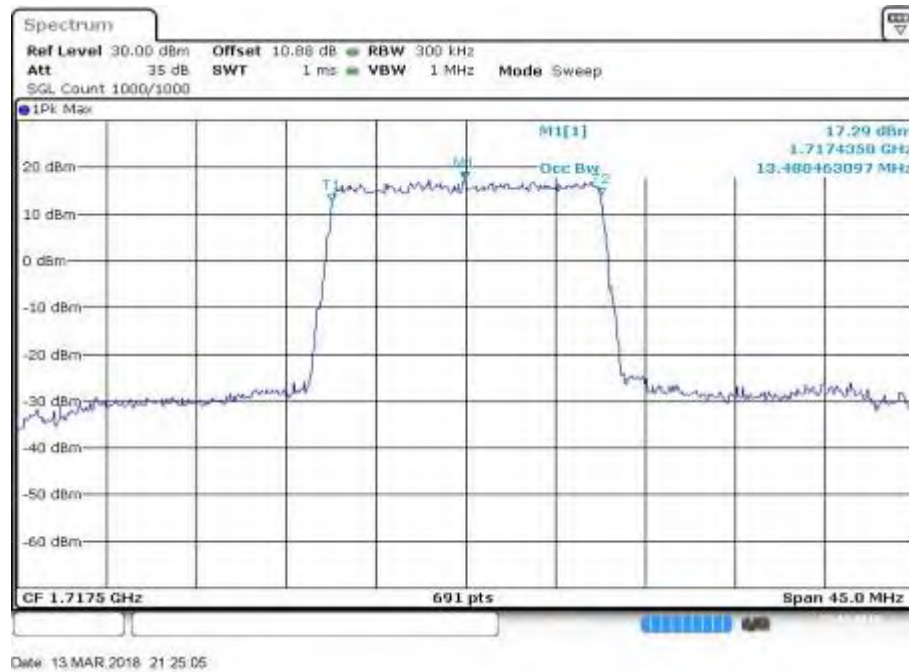


Fig.4

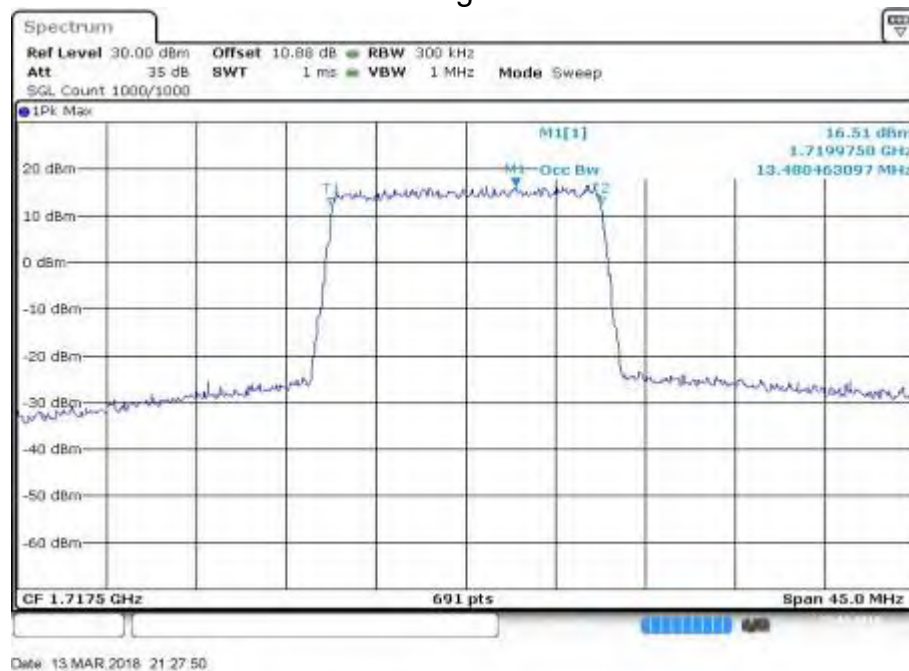


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	15	75	0	13.480	Fig.4	13.546	Fig.8

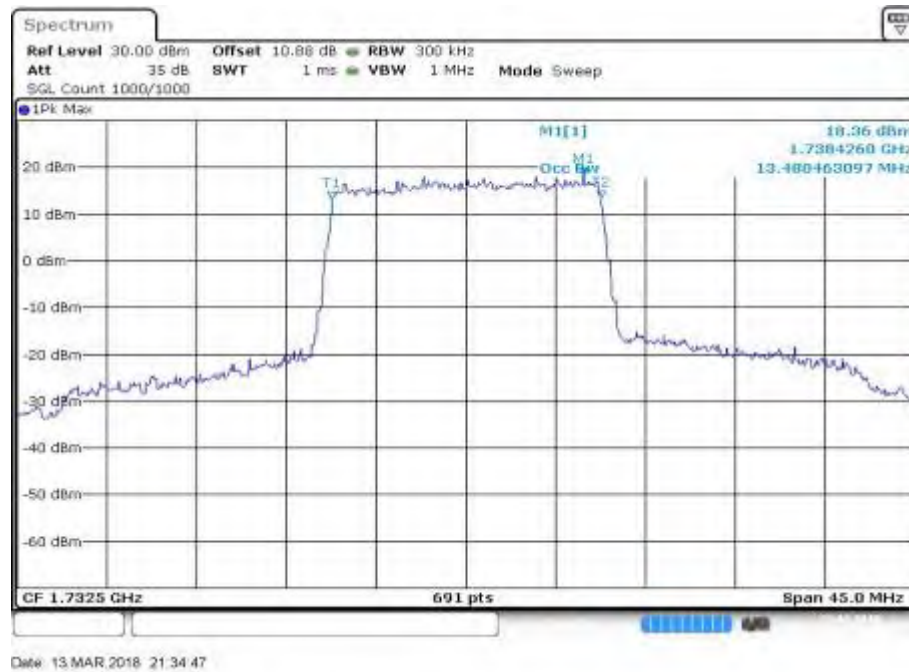


Fig.4

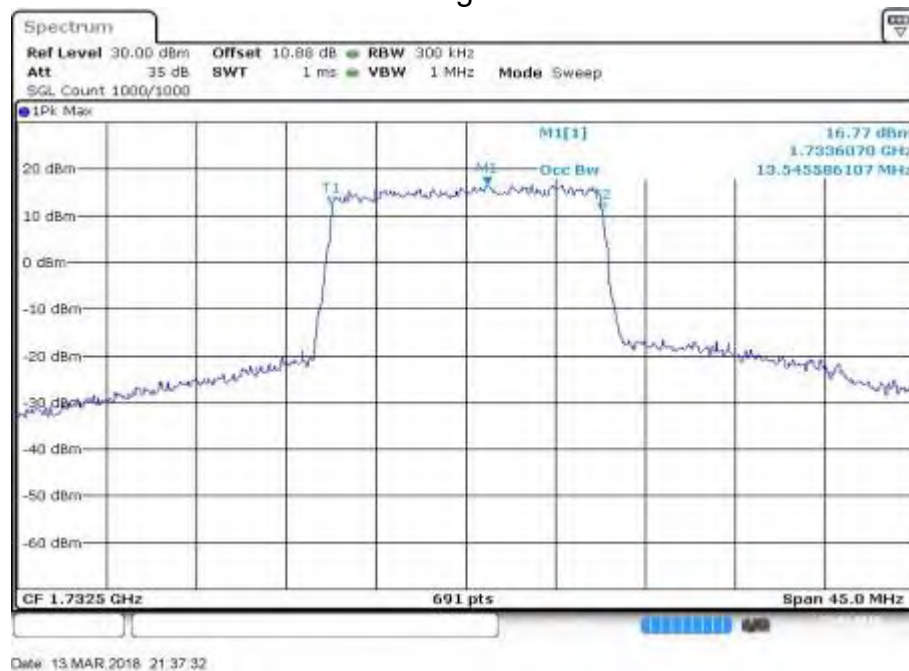


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1747.5	20325	15	75	0	13.415	Fig.4	13.480	Fig.8

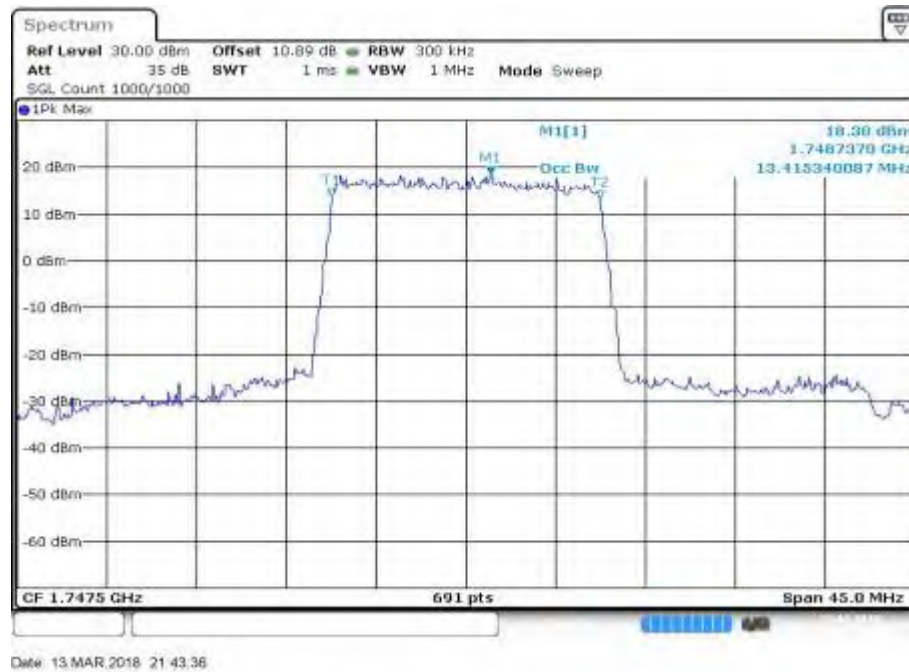


Fig.4

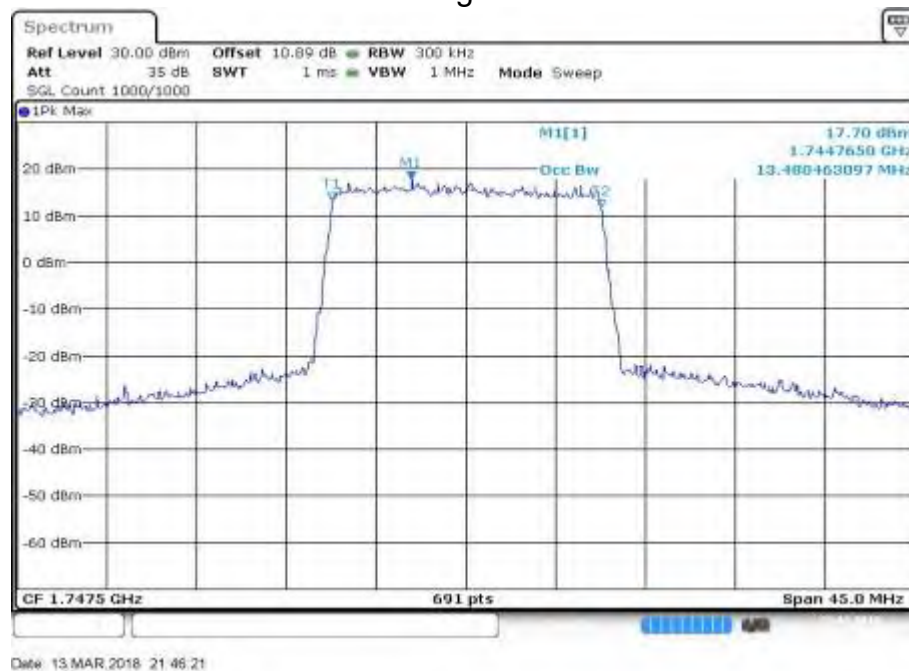


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1720	20050	20	100	0	17.887	Fig.4	17.974	Fig.8

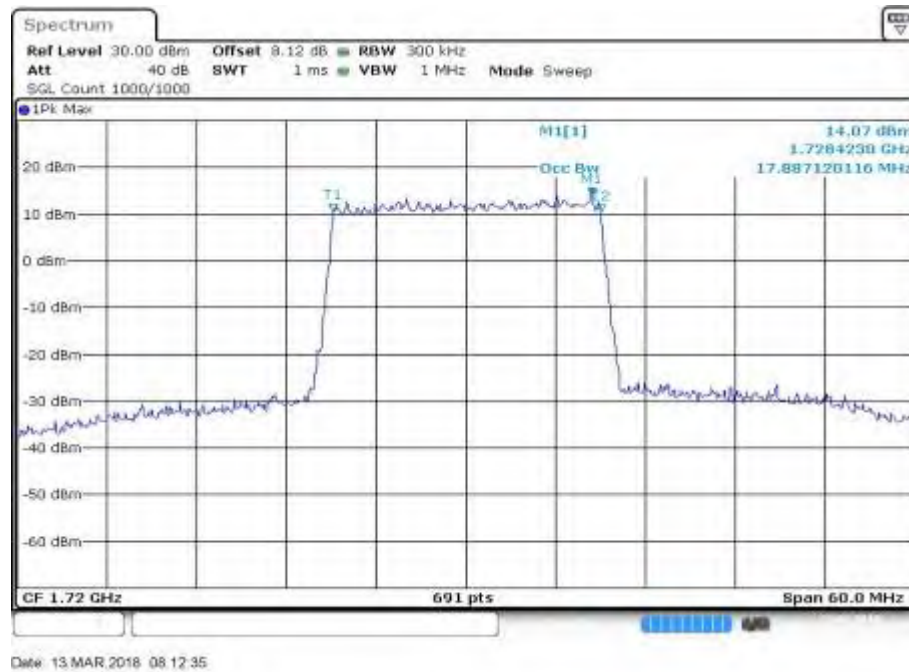


Fig.4

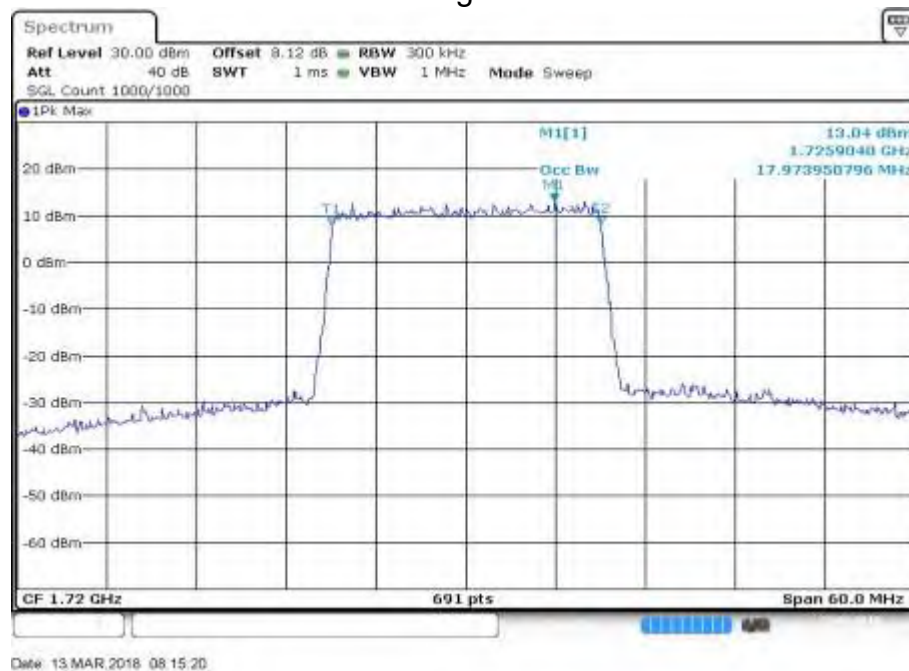


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	20	100	0	17.887	Fig.4	17.887	Fig.8

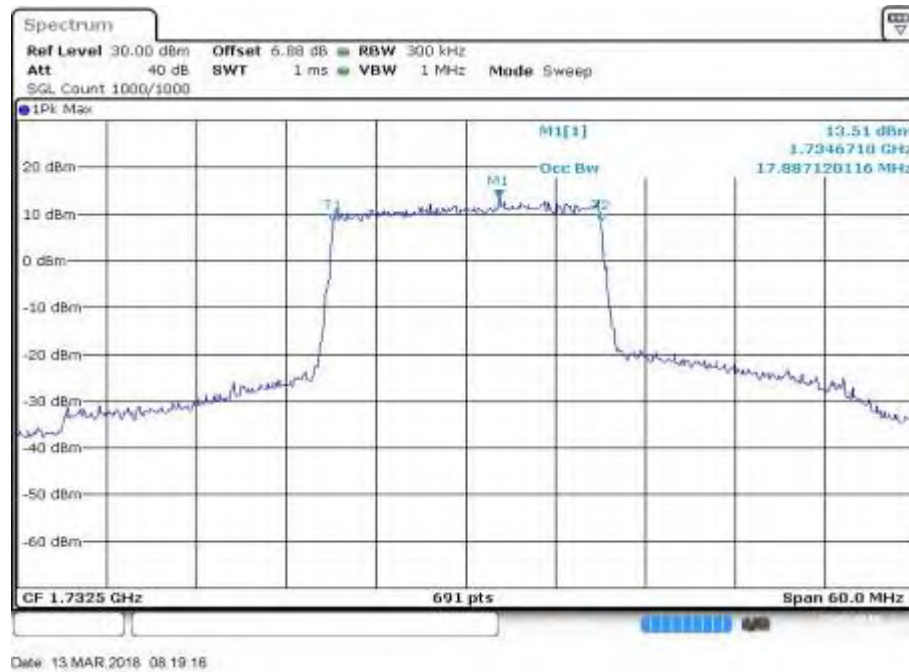


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
4	1745	20300	20	100	0	17.887	Fig.4	17.887	Fig.8

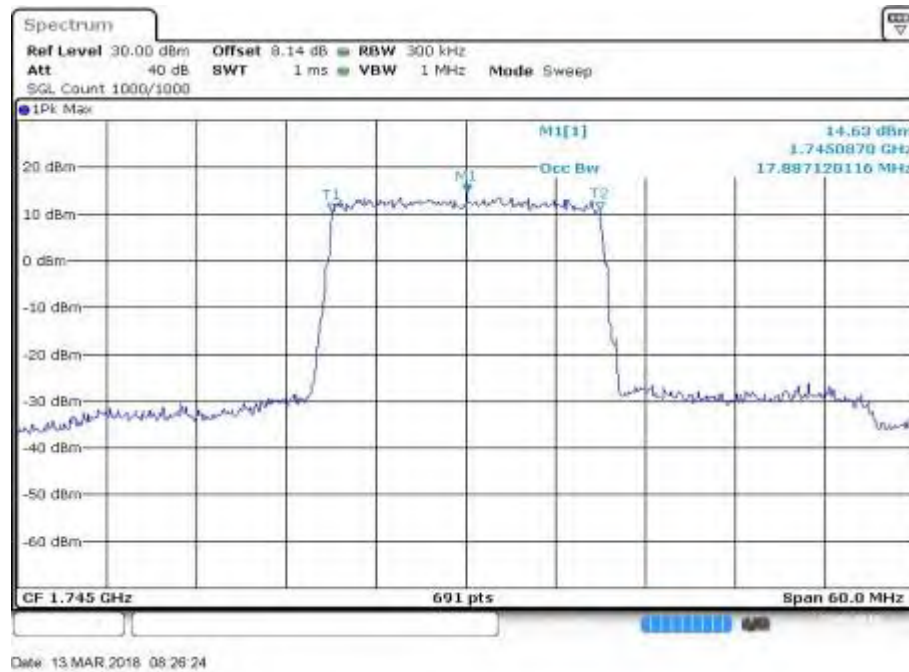


Fig.4

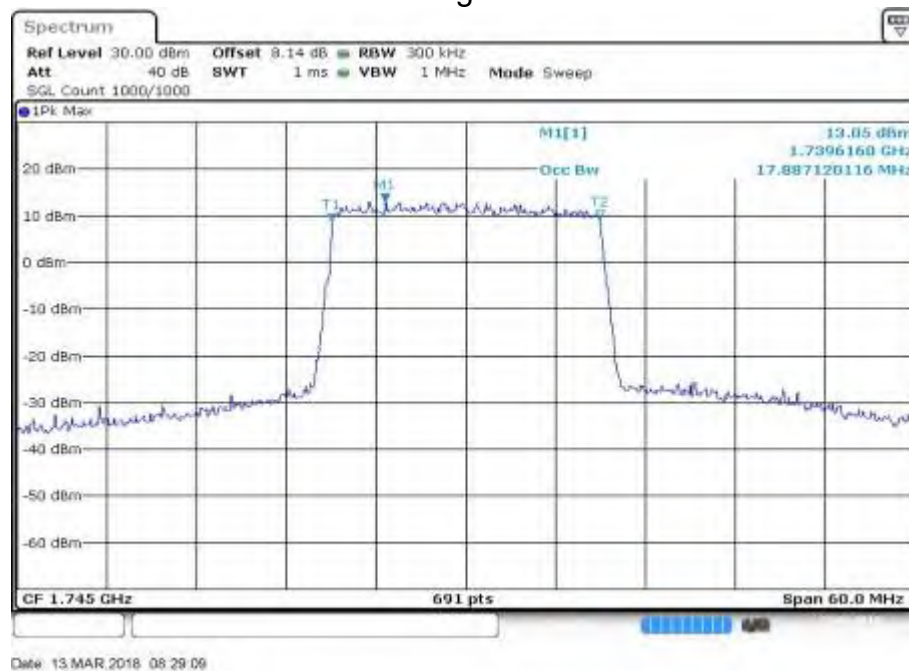


Fig.8

3 Emission Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1710.7	19957	1.4	6	0	1.240	Fig.4	1.246	Fig.8

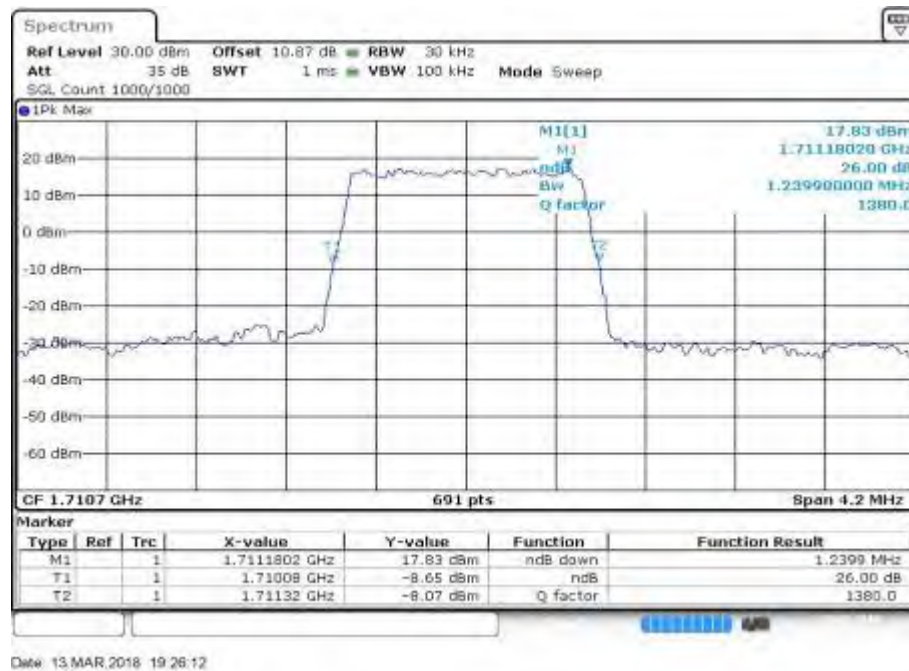


Fig.4

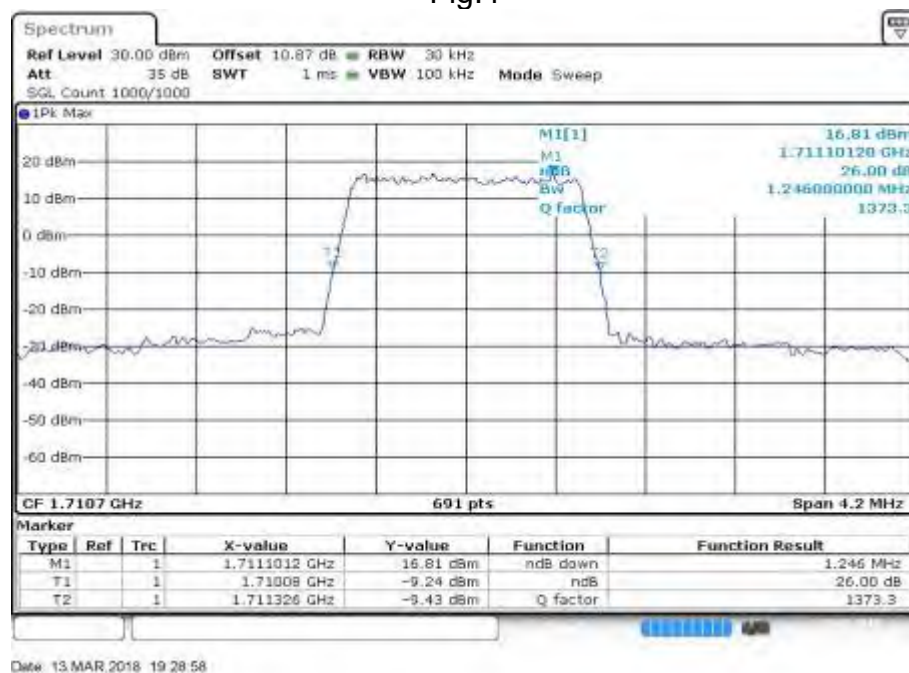


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	1.4	6	0	1.240	Fig.4	1.252	Fig.8

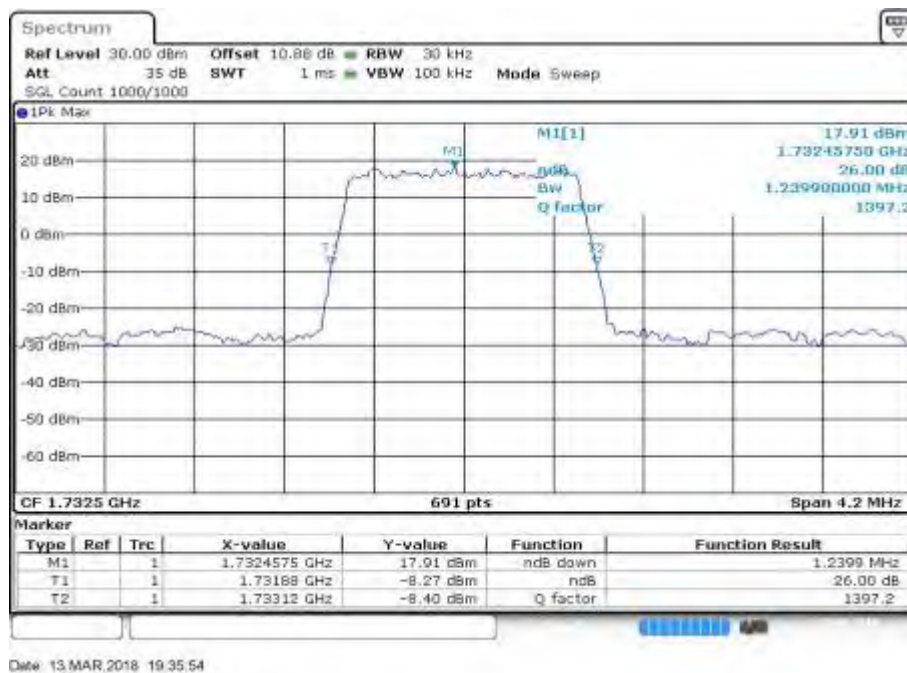


Fig.4

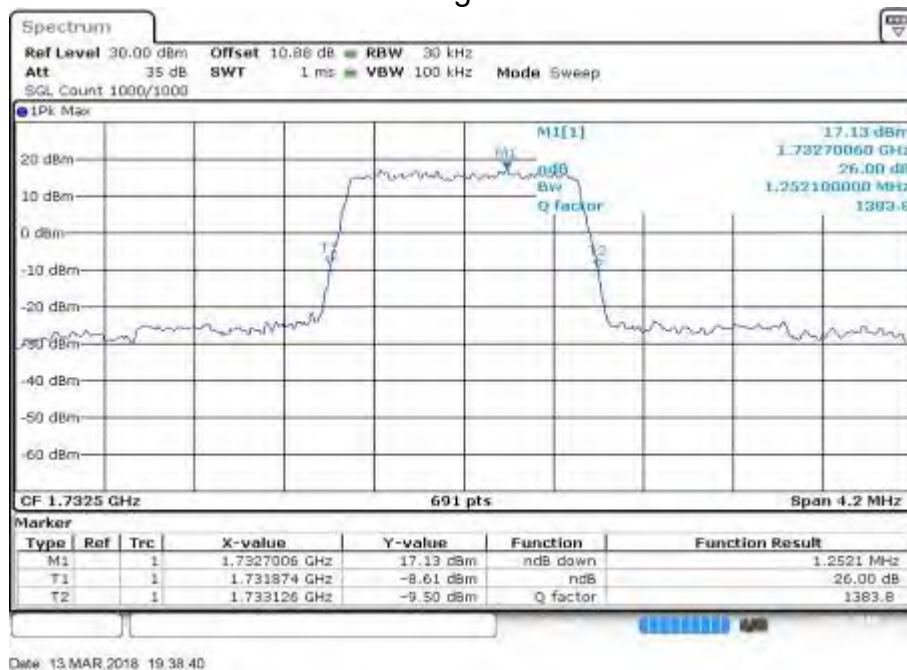


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1754.3	20393	1.4	6	0	1.240	Fig.4	1.252	Fig.8

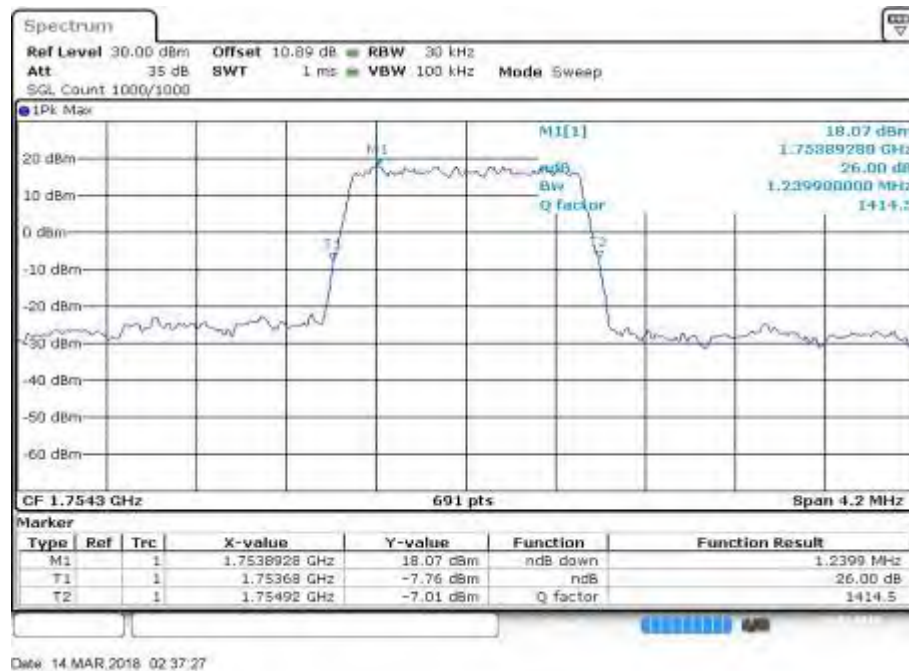


Fig.4

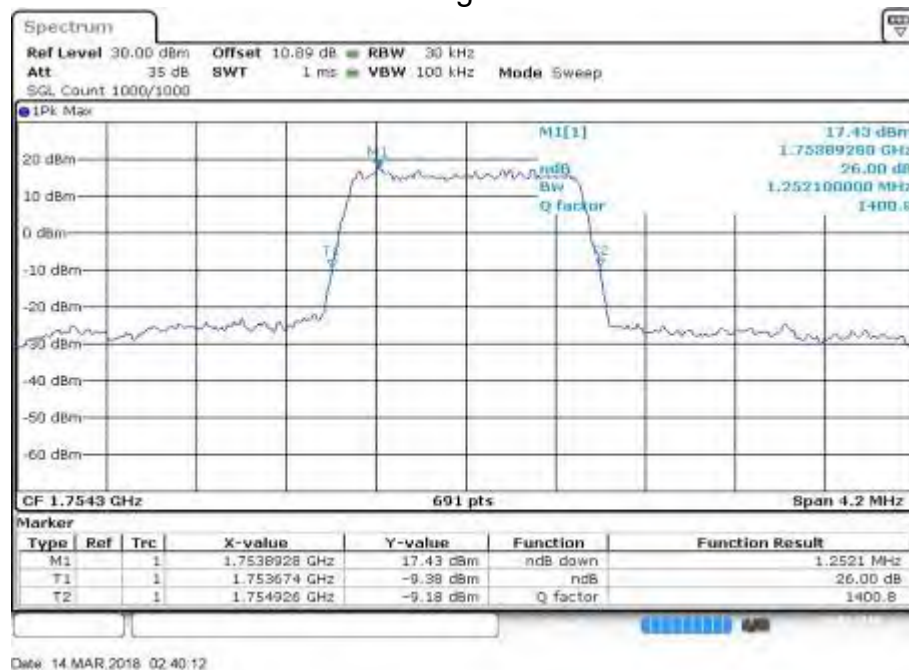


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1711.5	19965	3	15	0	2.774	Fig.4	2.774	Fig.8

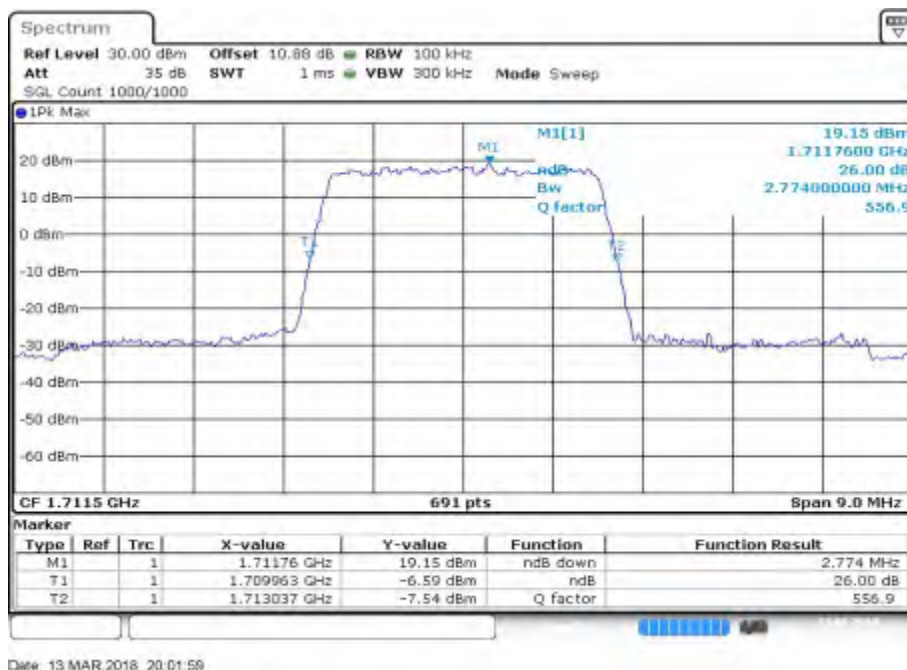


Fig.4

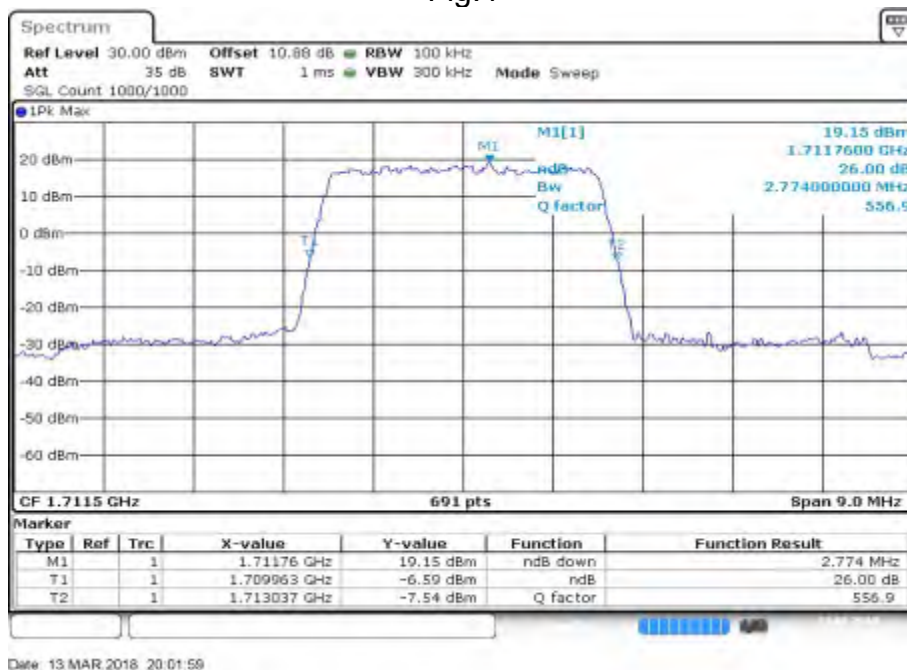


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	3	15	0	2.061	Fig.4	2.061	Fig.8

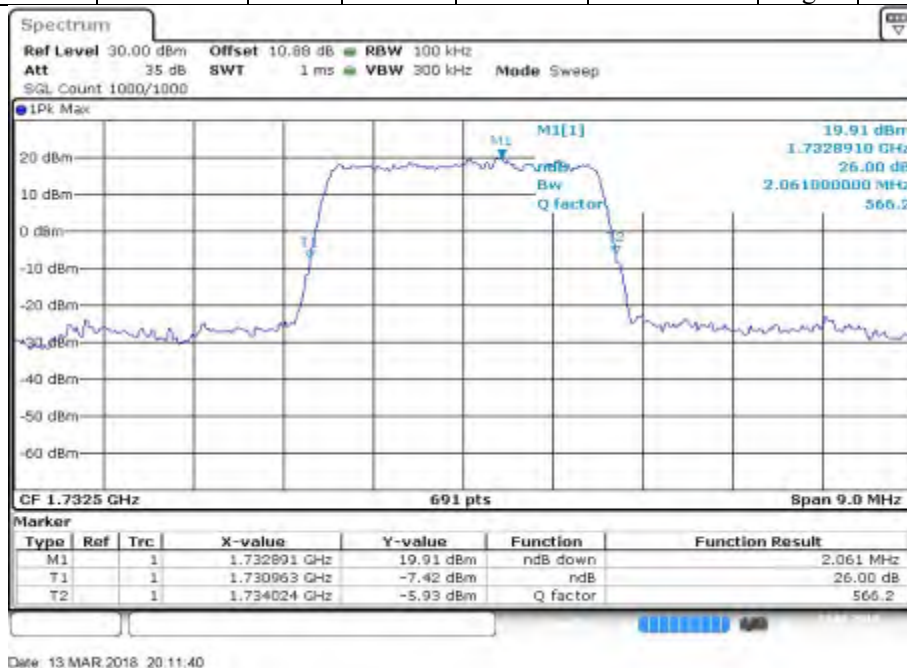


Fig.4

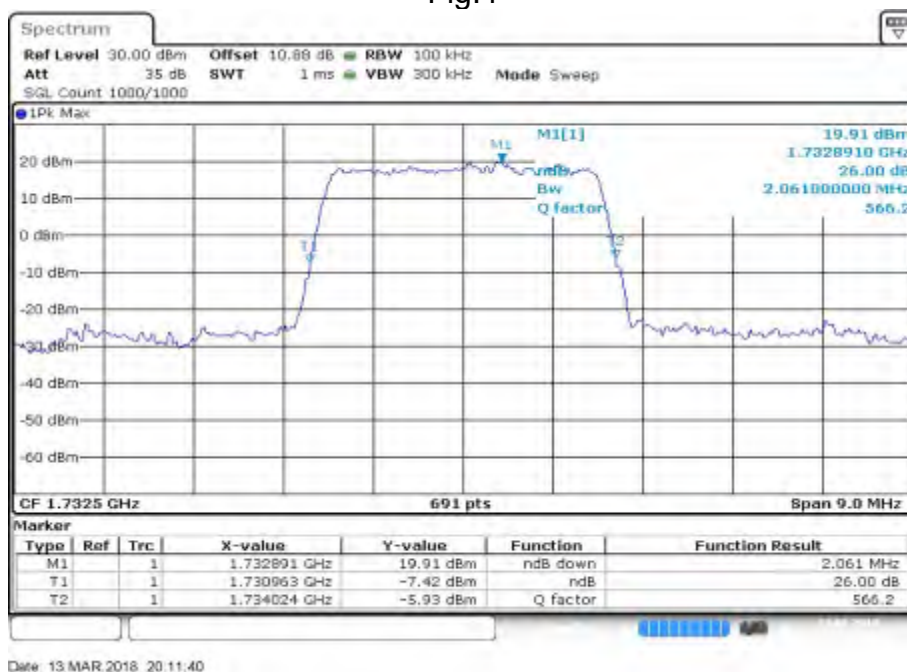


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1753.5	20385	3	15	0	3.074	Fig.4	3.074	Fig.8

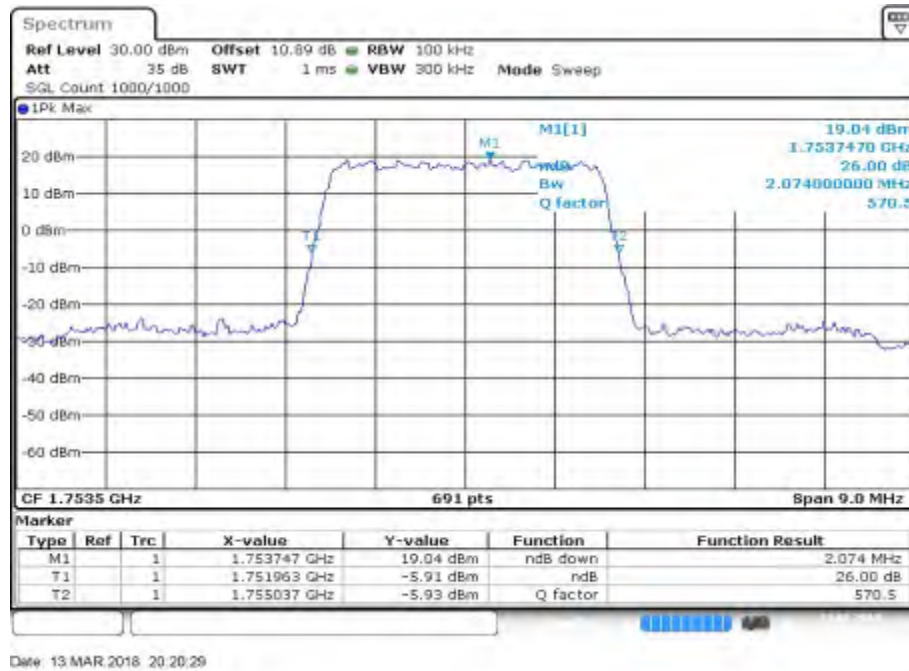


Fig.4

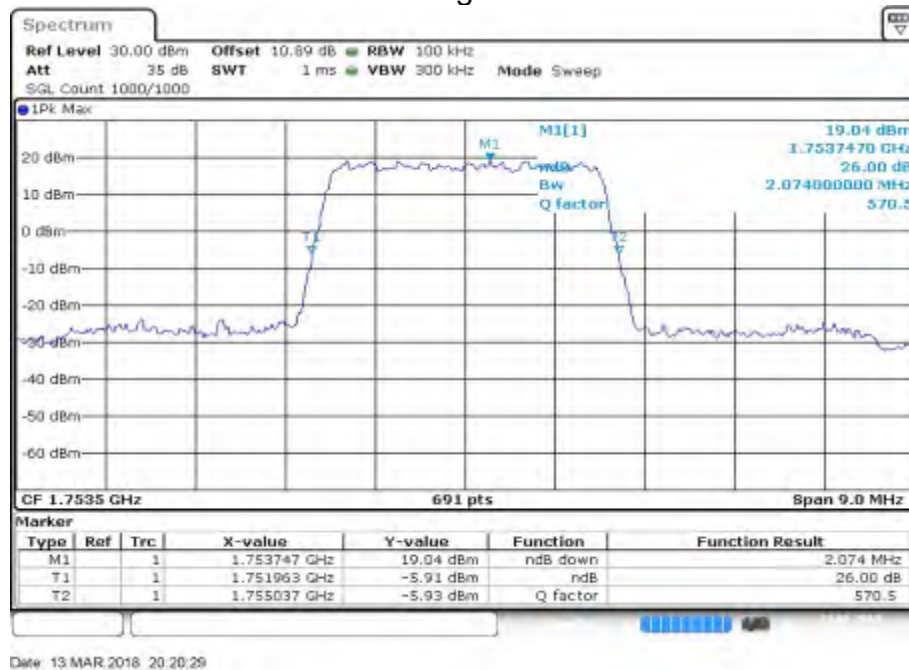


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1712.5	19975	5	25	0	4.971	Fig.4	4.993	Fig.8

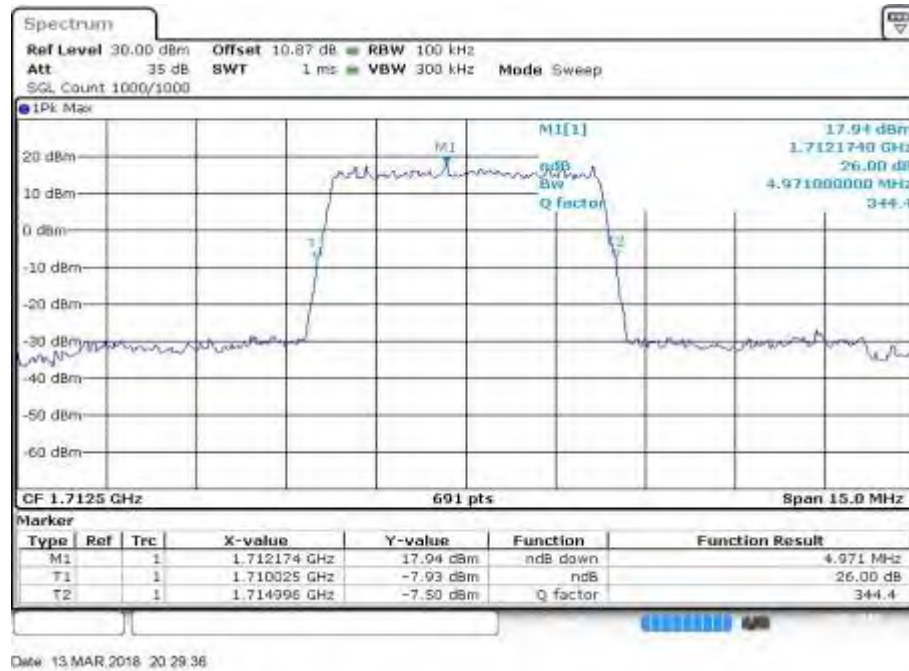


Fig.4

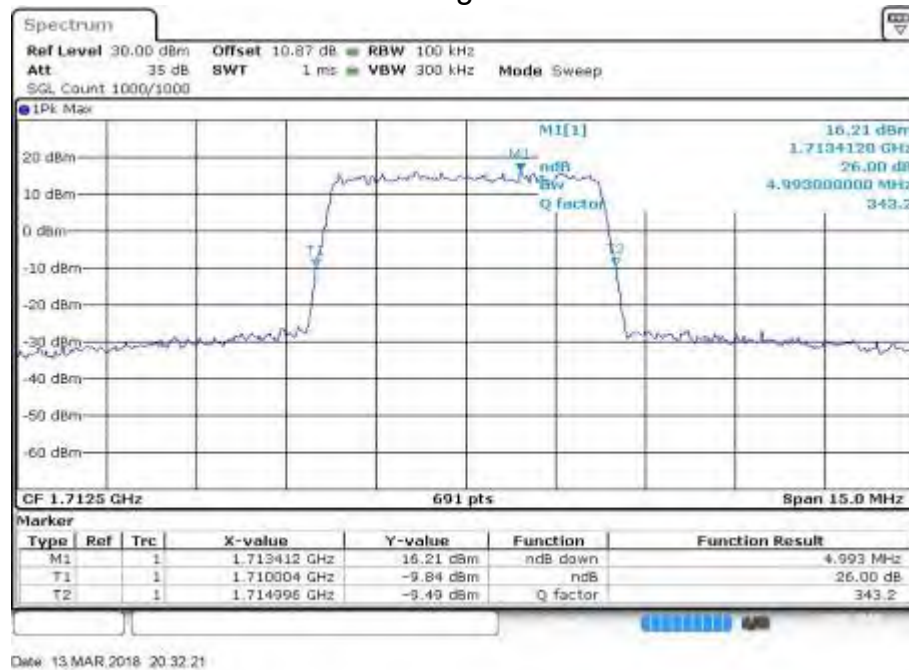


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	5	25	0	4.971	Fig.4	4.993	Fig.8

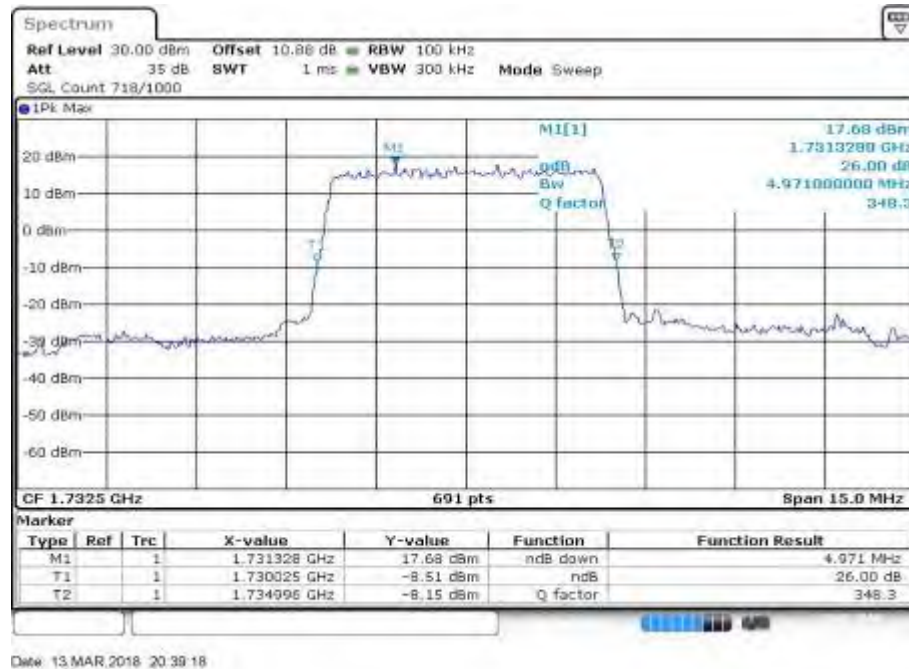


Fig.4

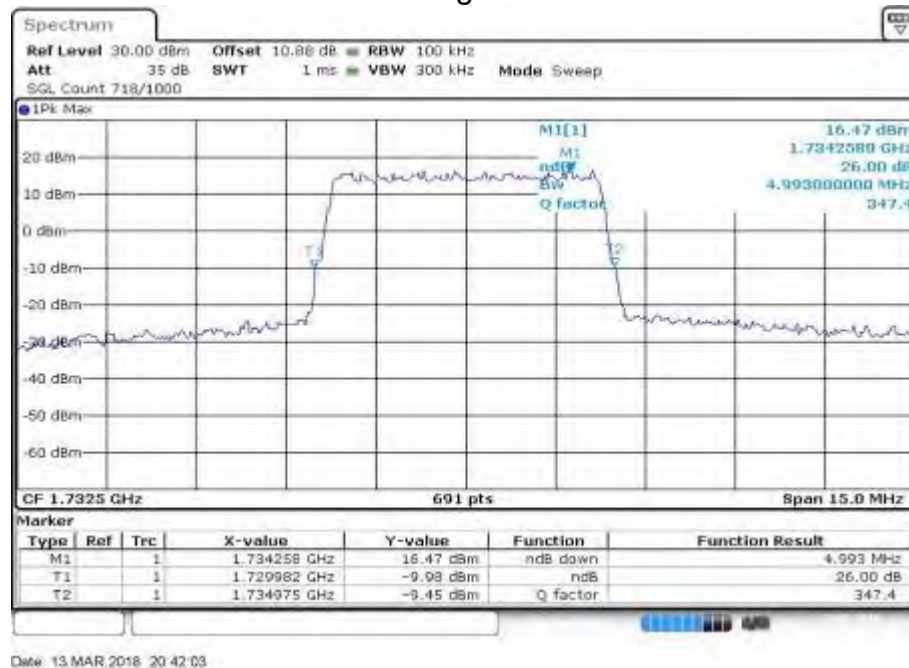


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1752.5	20375	5	25	0	4.971	Fig.4	4.971	Fig.8

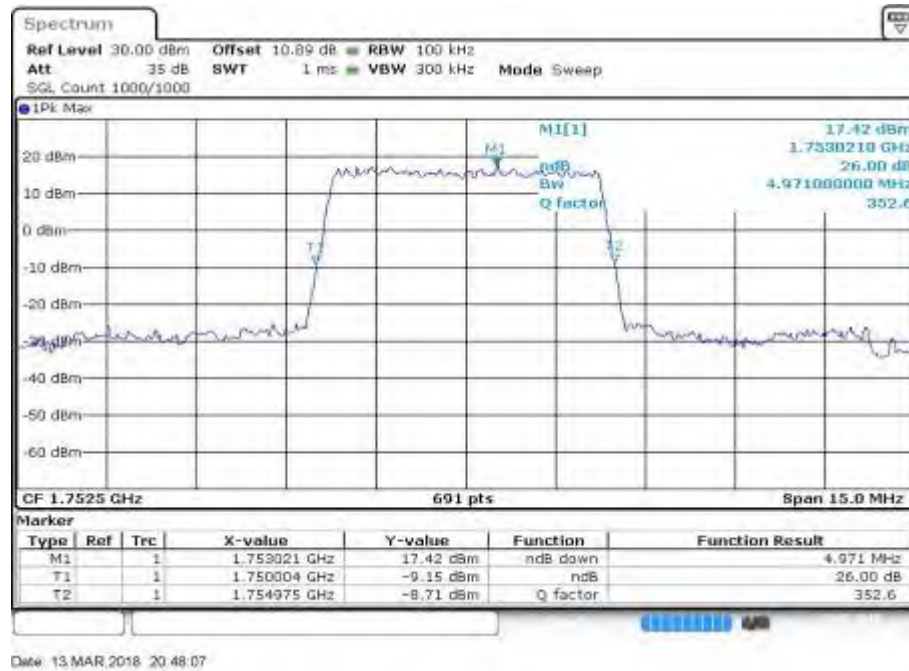


Fig.4

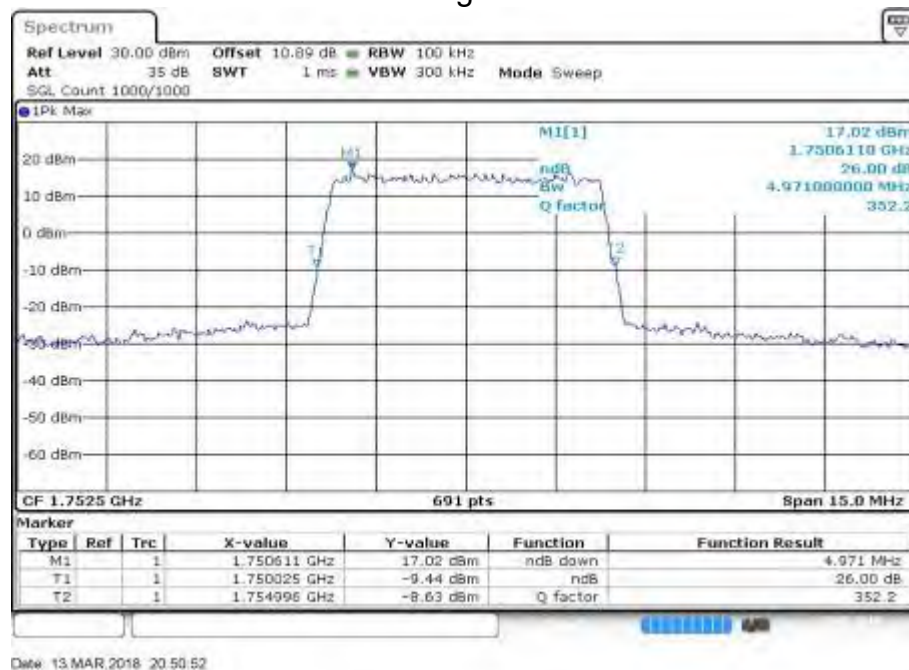


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1715	20000	10	50	0	10.072	Fig.4	10.029	Fig.8

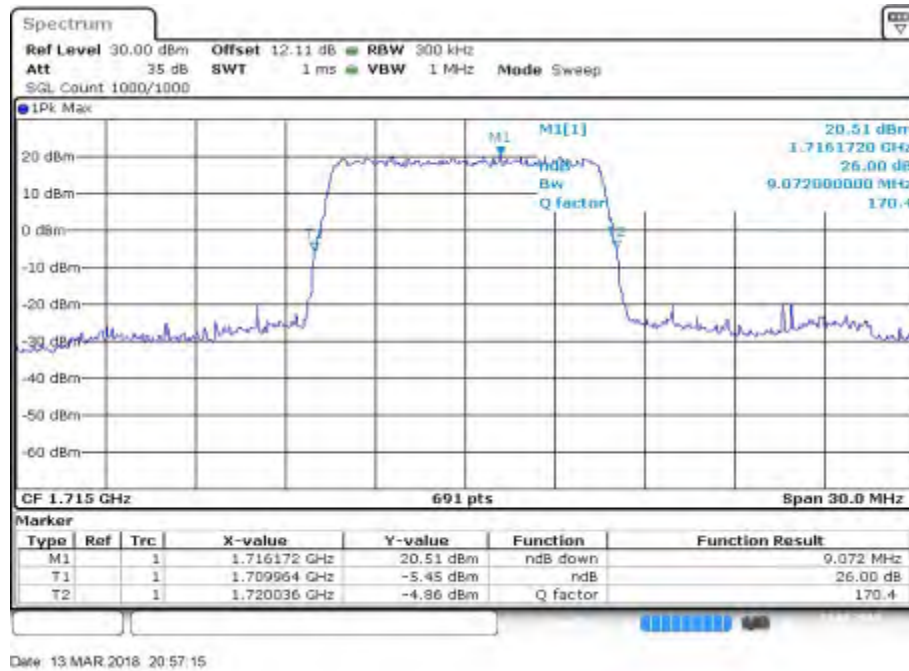


Fig.4

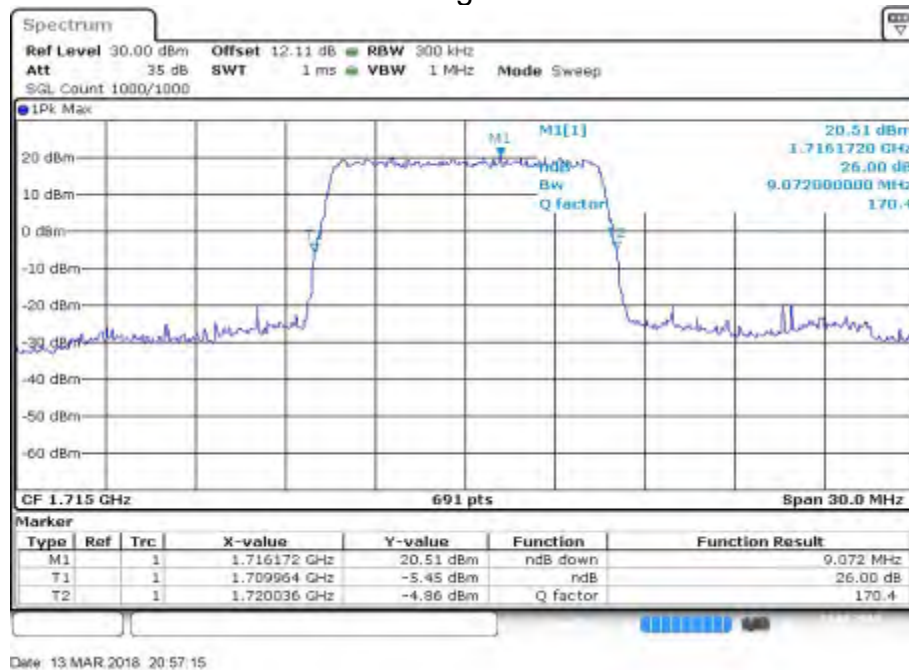


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	10	50	0	9.986	Fig.4	9.986	Fig.8

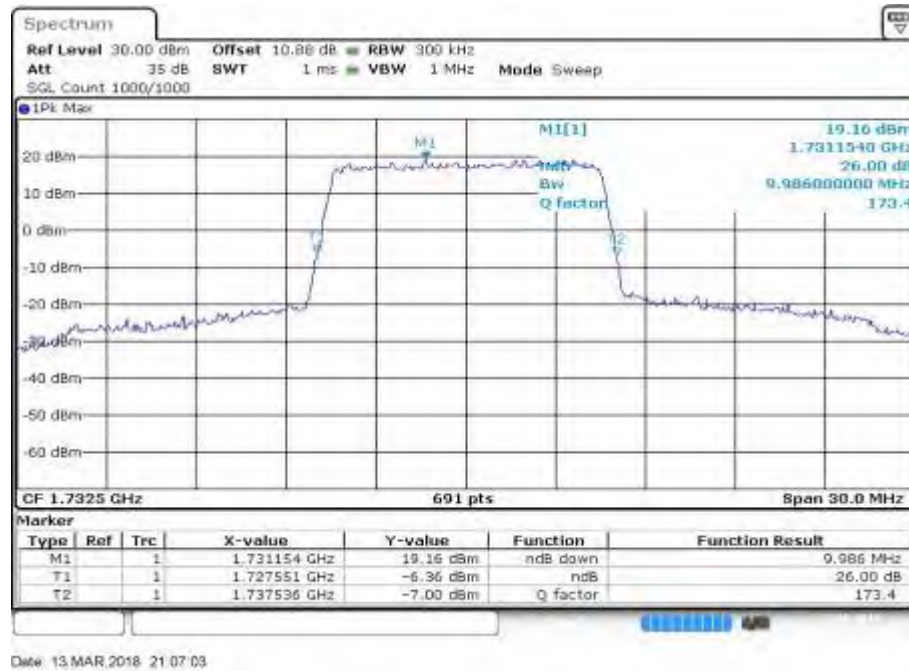


Fig.4

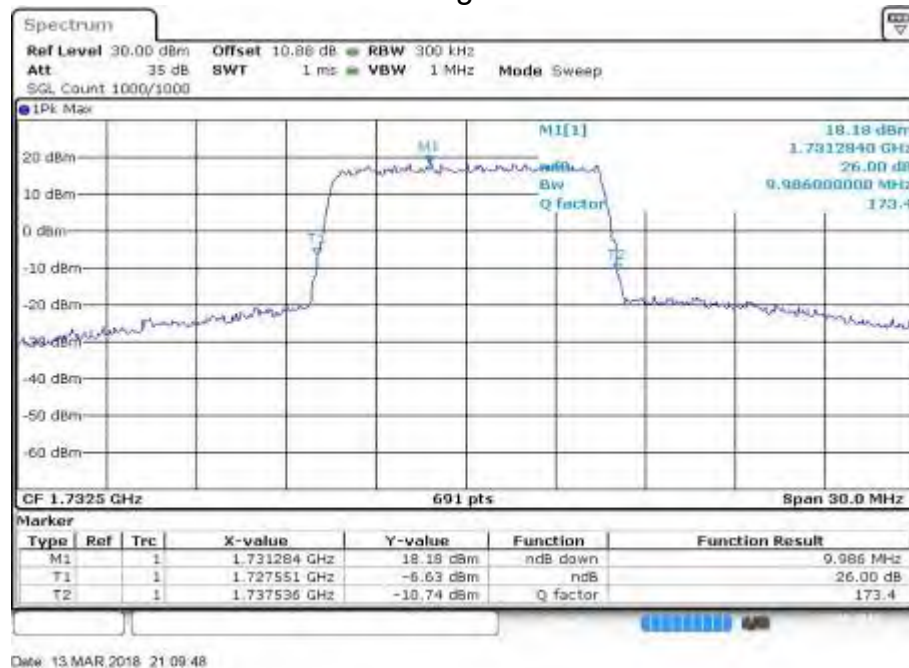


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1750	20350	10	50	0	9.986	Fig.4	9.942	Fig.8

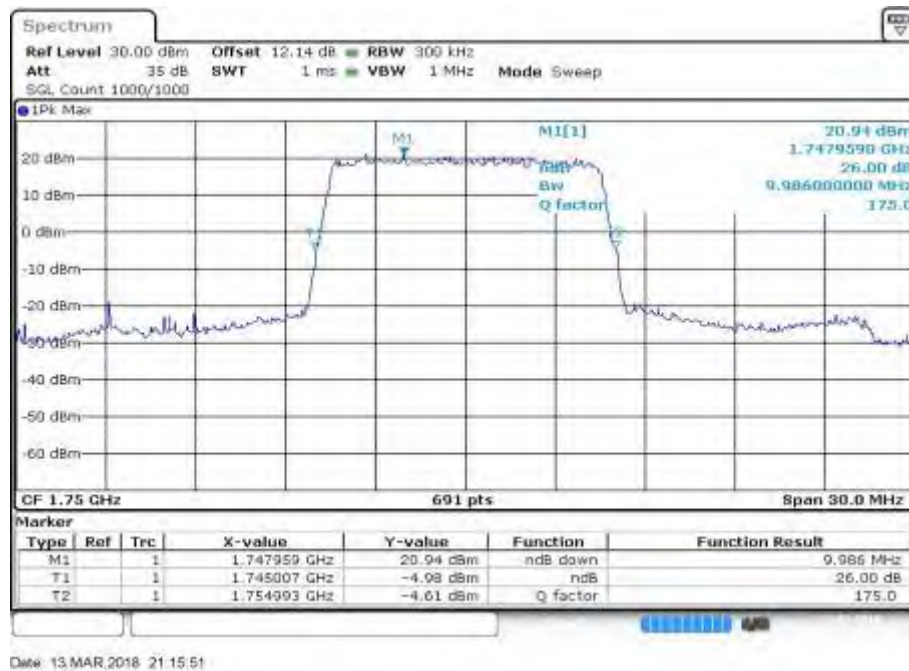


Fig.4

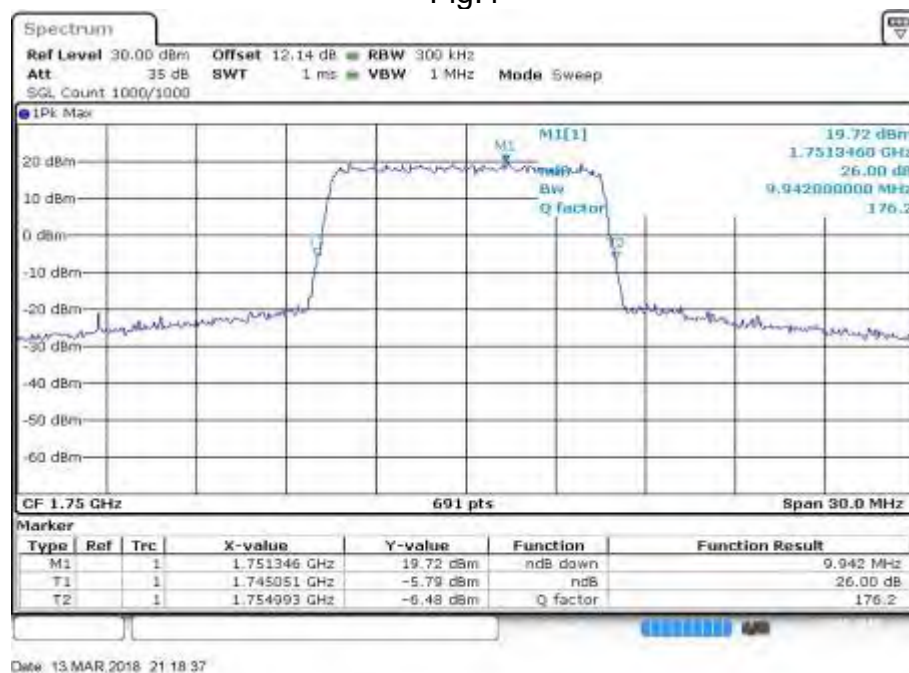


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1717.5	20025	15	75	0	14.783	Fig.4	14.718	Fig.8

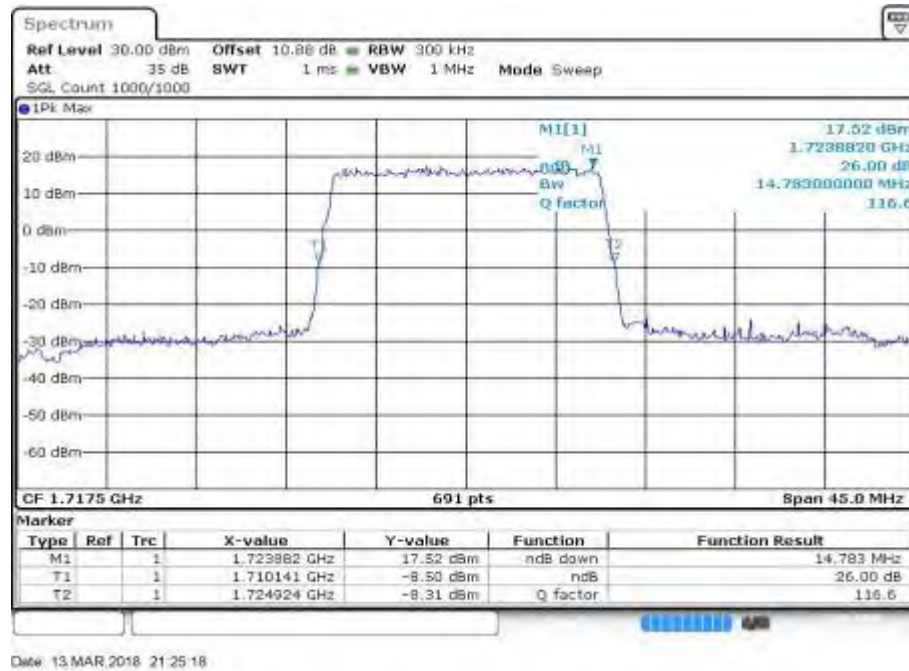


Fig.4

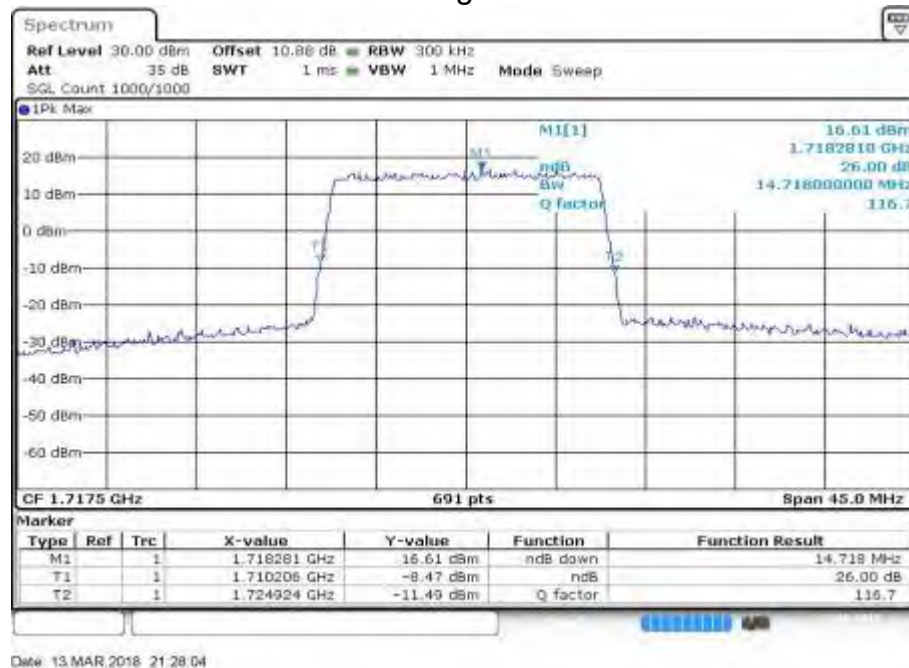


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	15	75	0	14.653	Fig.4	14.718	Fig.8

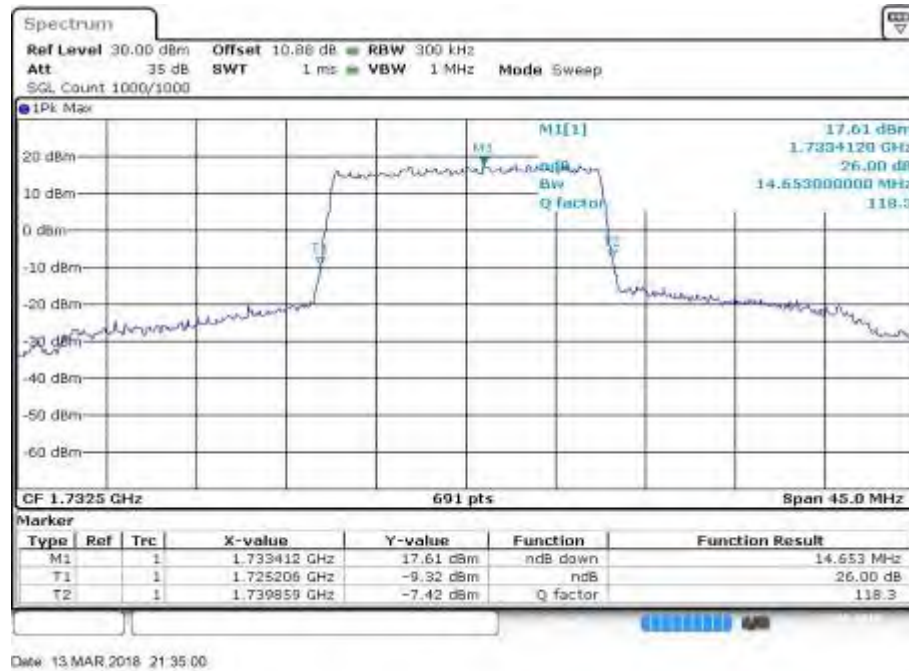


Fig.4

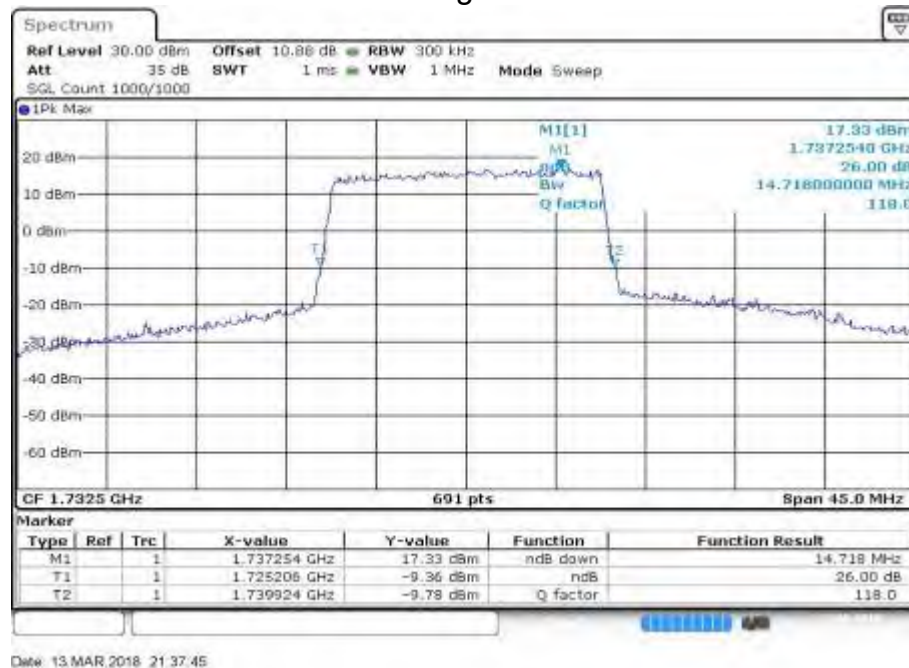


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1747.5	20325	15	75	0	14.718	Fig.4	14.653	Fig.8

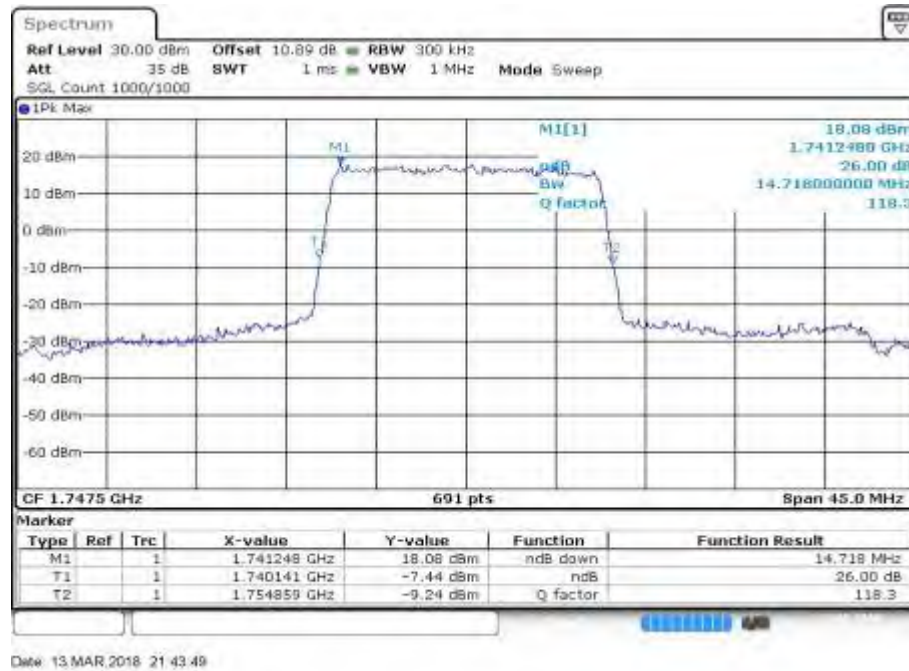


Fig.4

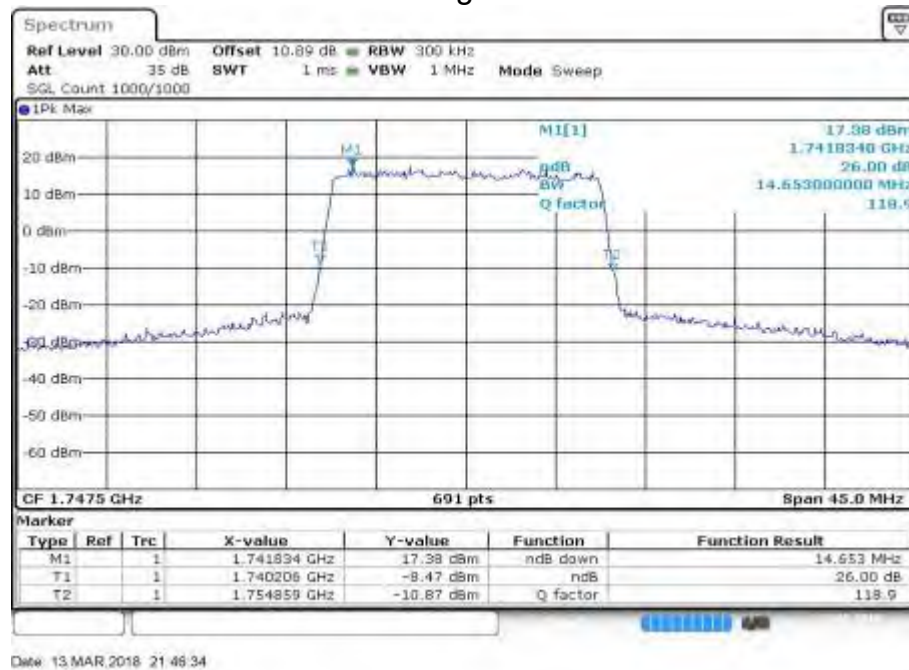


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1720	20050	20	100	0	19.276	Fig.4	19.363	Fig.8

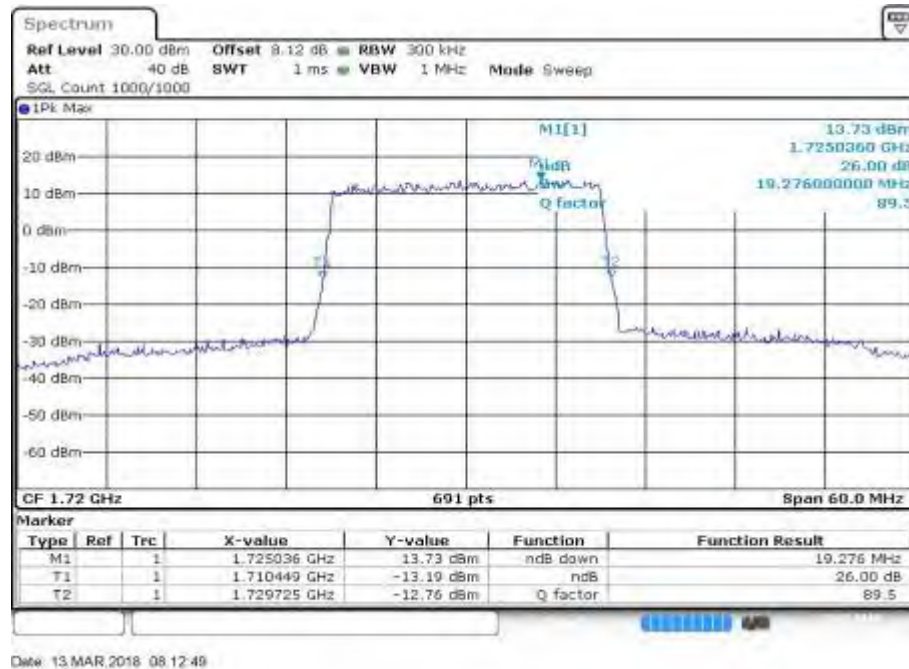


Fig.4

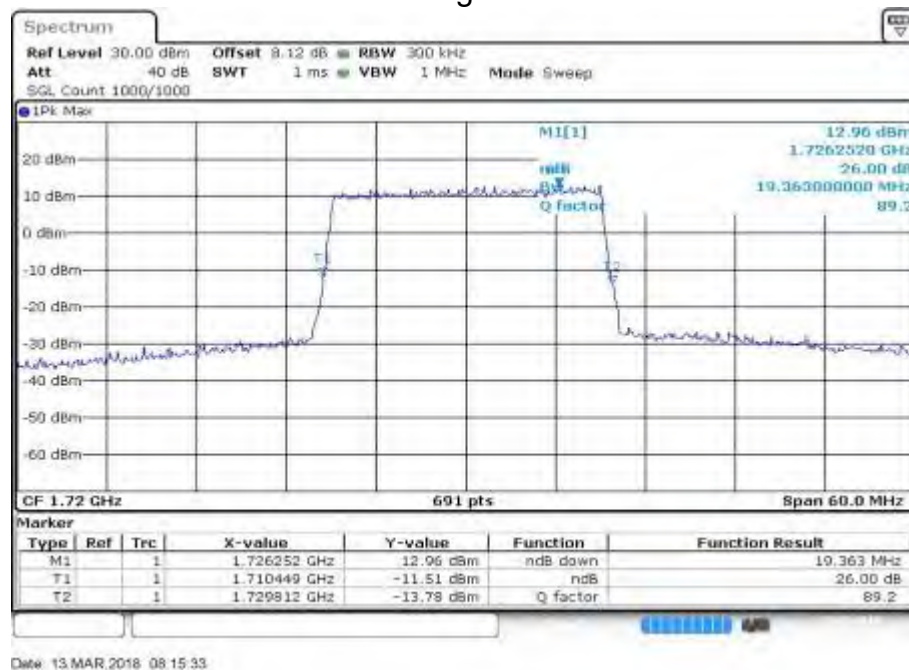


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1732.5	20175	20	100	0	19.190	Fig.4	19.276	Fig.8

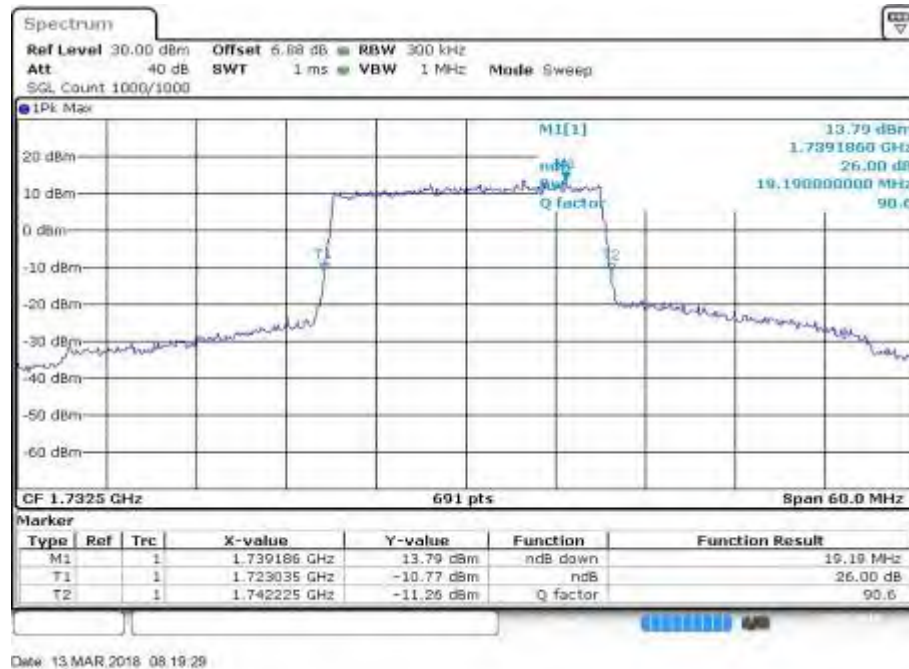


Fig.4

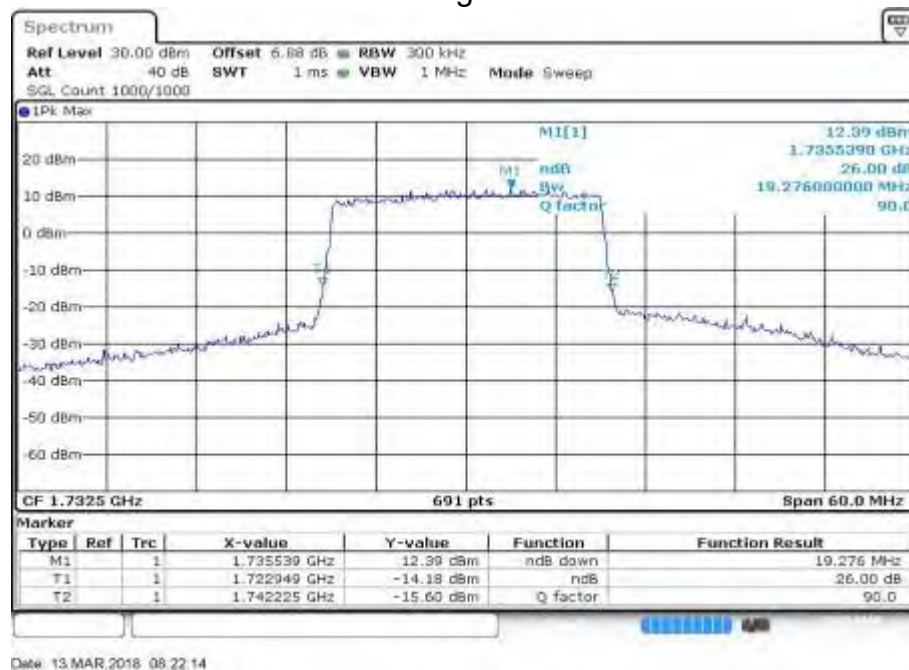


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
4	1745	20300	20	100	0	19.276	Fig.4	19.363	Fig.8

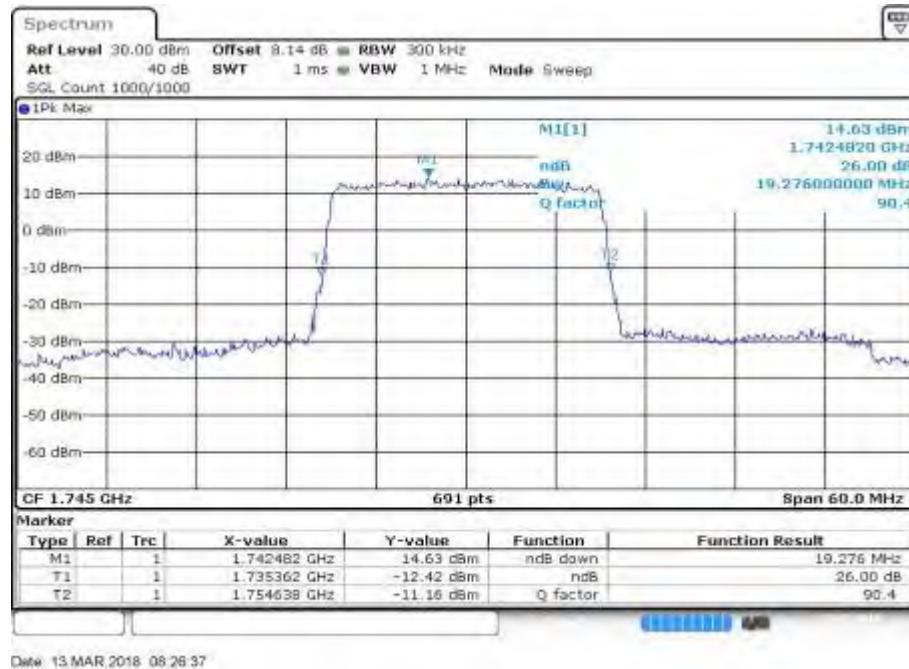


Fig.4

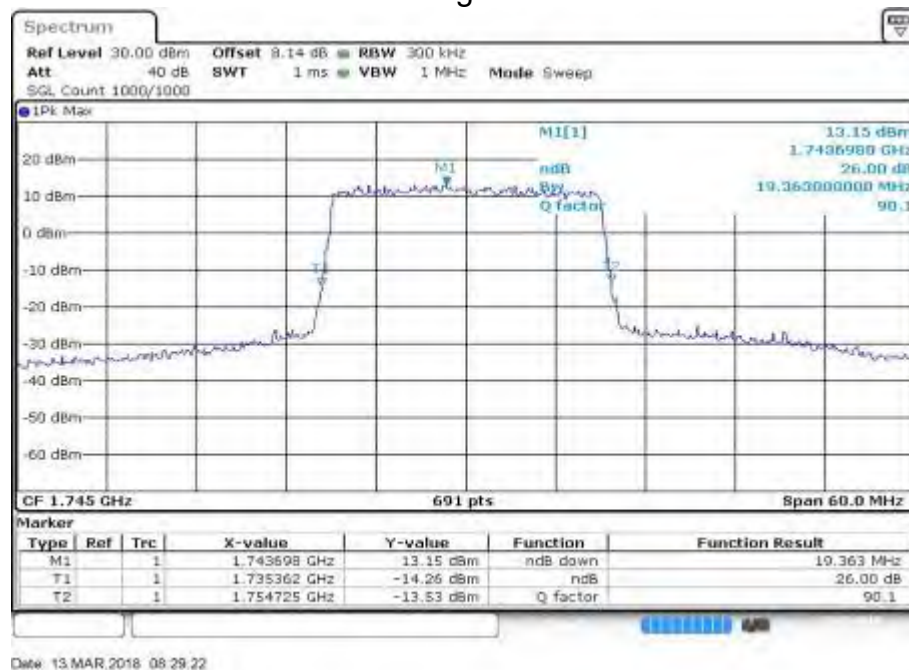
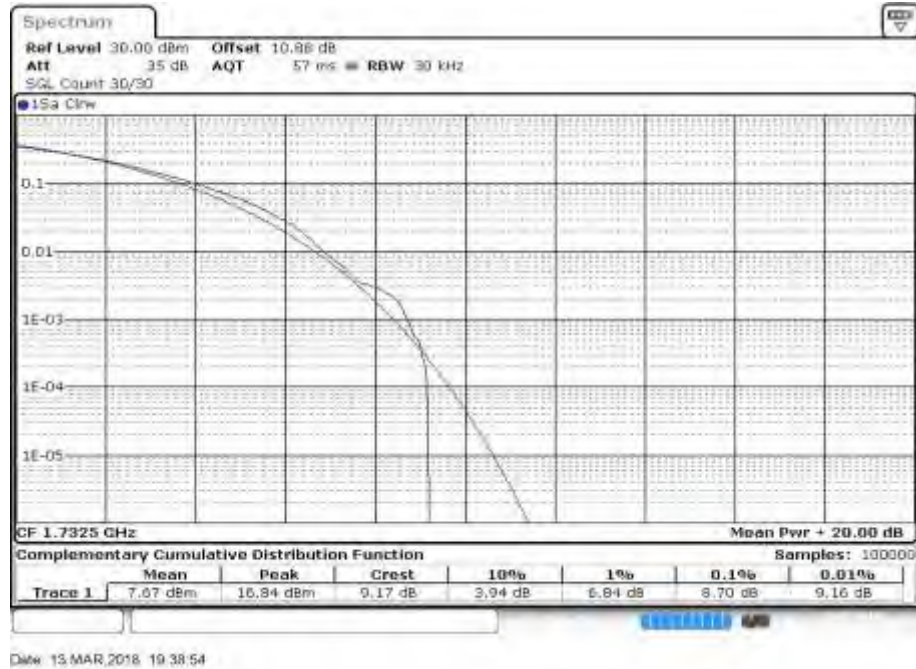


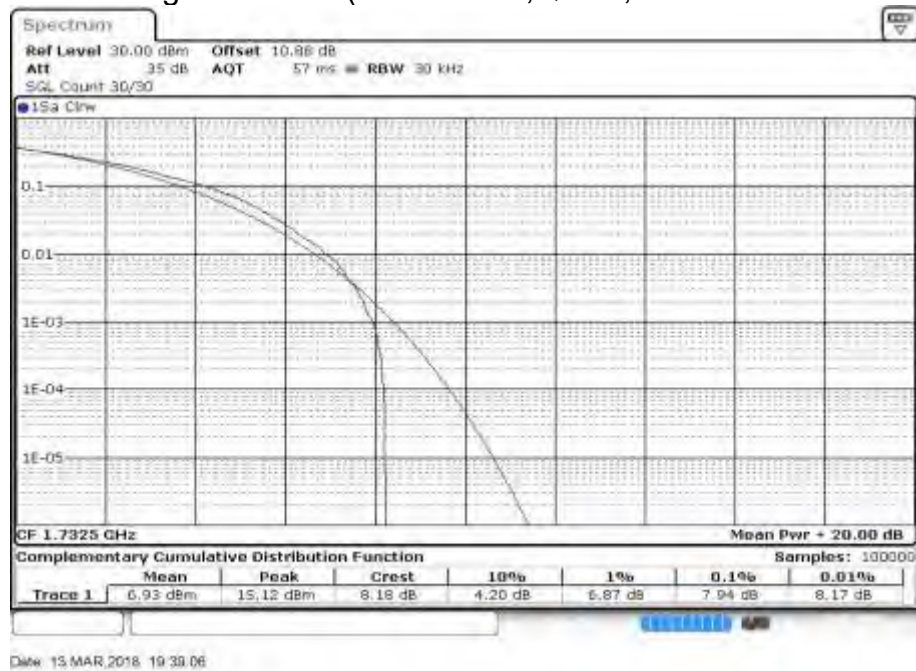
Fig.8

4 Peak-Average Ratio

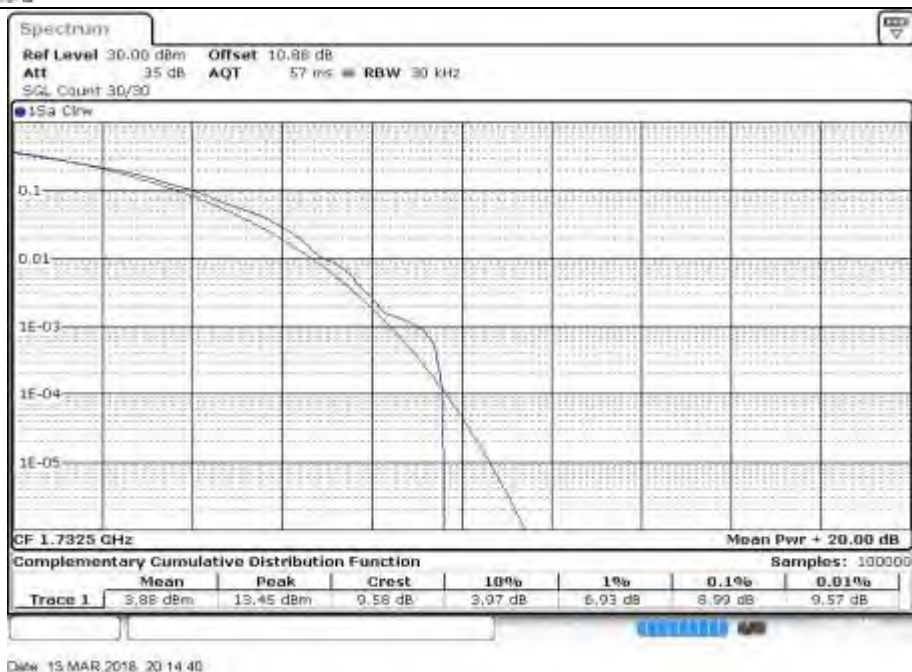
Test result:



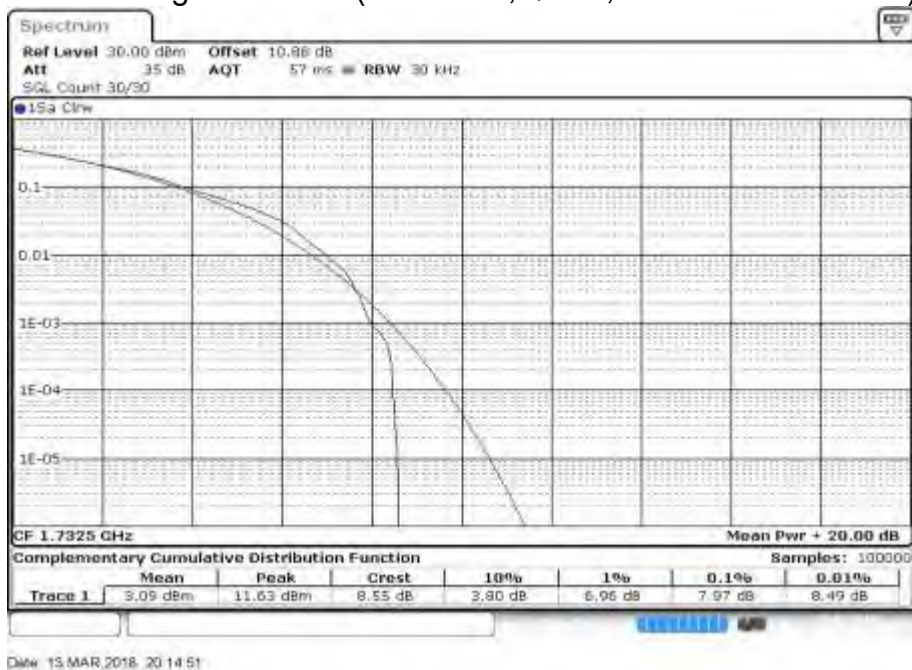
Peak-Average Ratio Plot(1.4MHz BW,QPSK,Band 4-mid Channel)



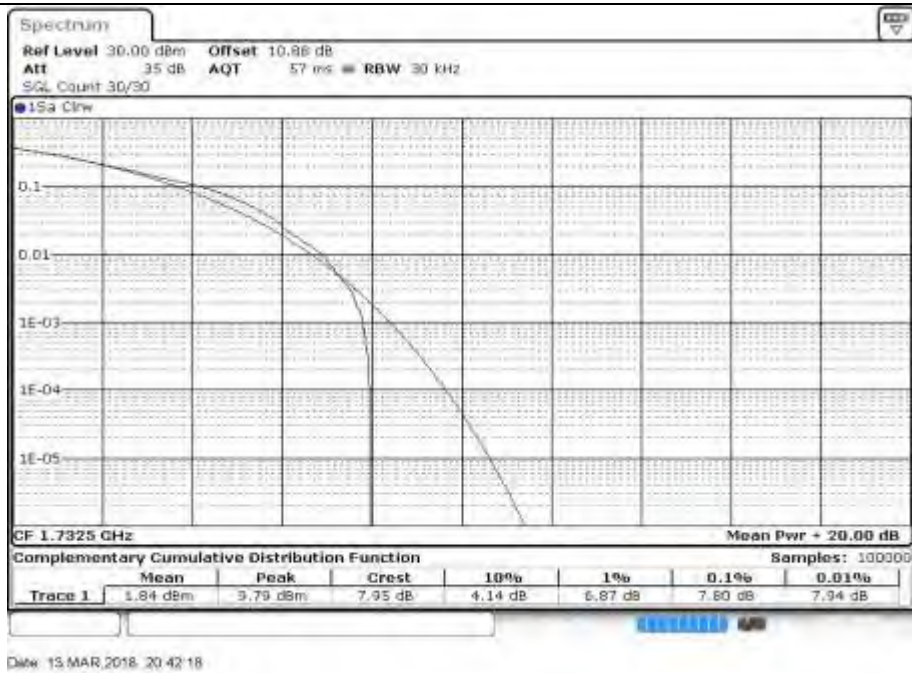
Peak-Average Ratio Plot(1.4MHz BW,16QAM,Band 4-mid Channel)



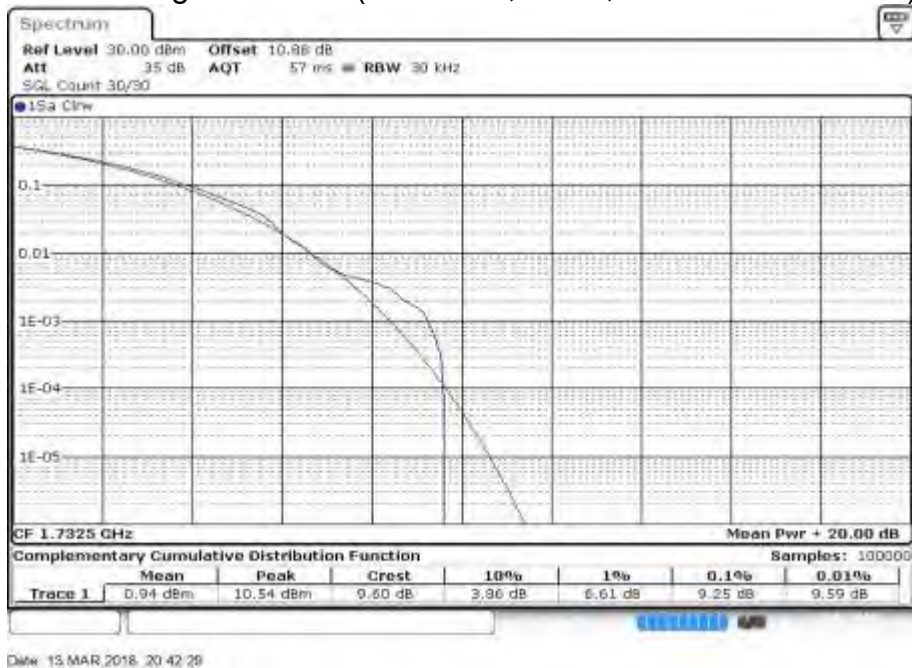
Peak-Average Ratio Plot(3MHz BW,QPSK,Band 4-mid Channel)



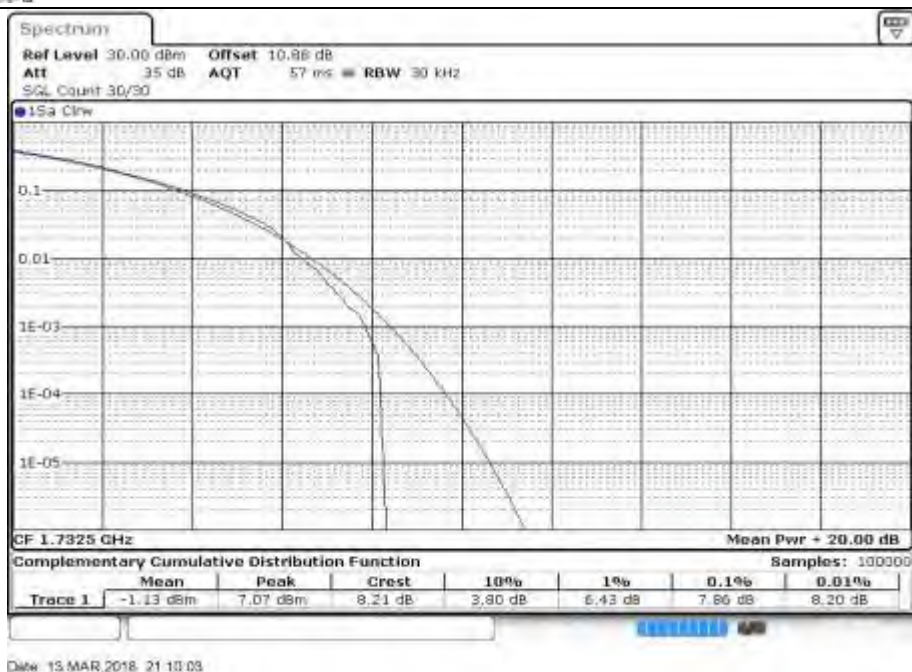
Peak-Average Ratio Plot(3MHz BW,16QAM,Band 4-mid Channel)



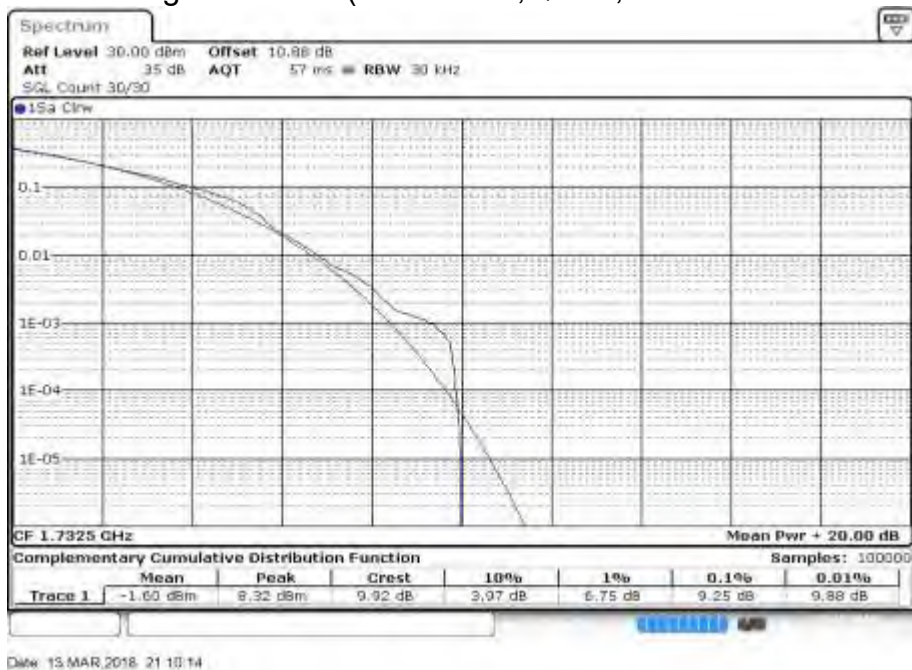
Peak-Average Ratio Plot(5MHz BW,QPSK,Band 4-mid Channel)



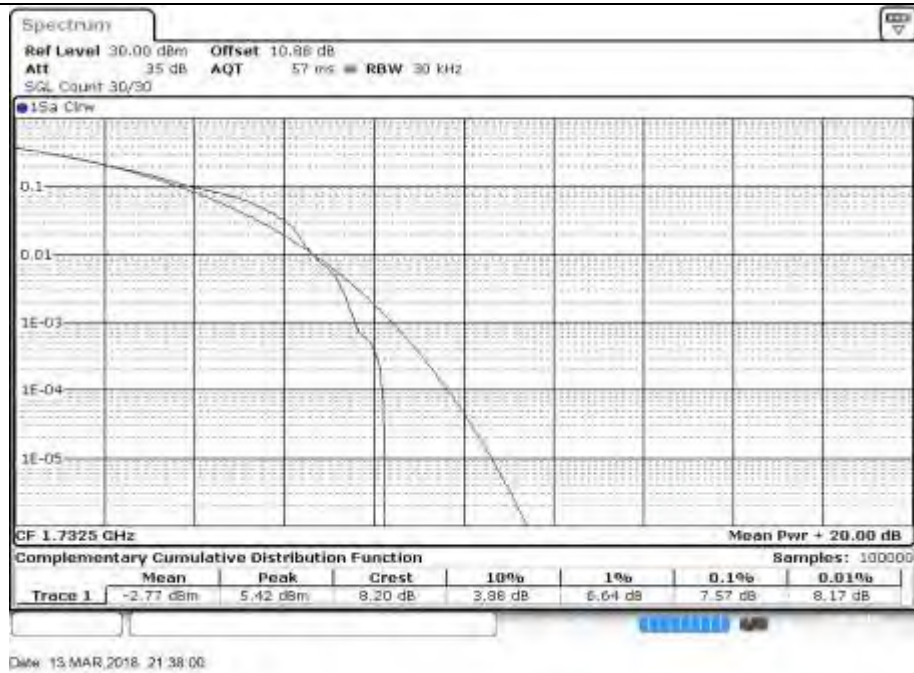
Peak-Average Ratio Plot(5MHz BW,16QAM,Band 4-mid Channel)



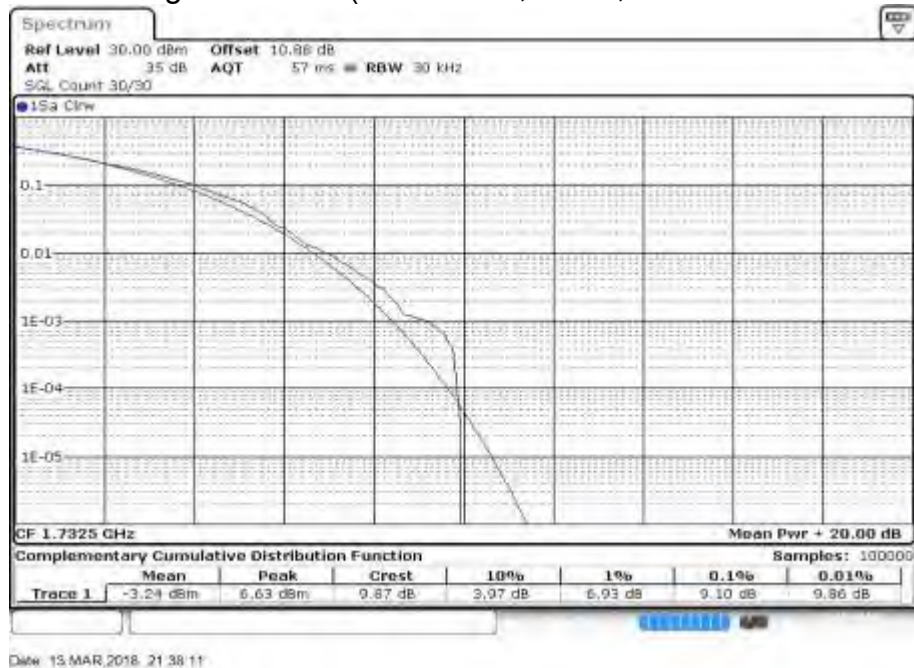
Peak-Average Ratio Plot(10MHz BW,QPSK,Band 4-mid Channel)



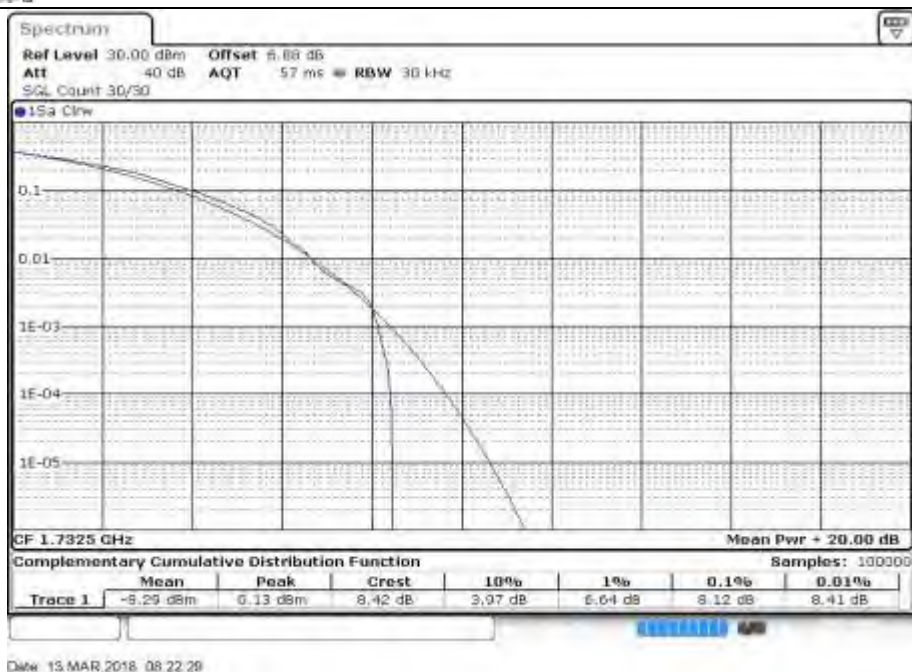
Peak-Average Ratio Plot(10MHz BW,16QAM,Band 4-mid Channel)



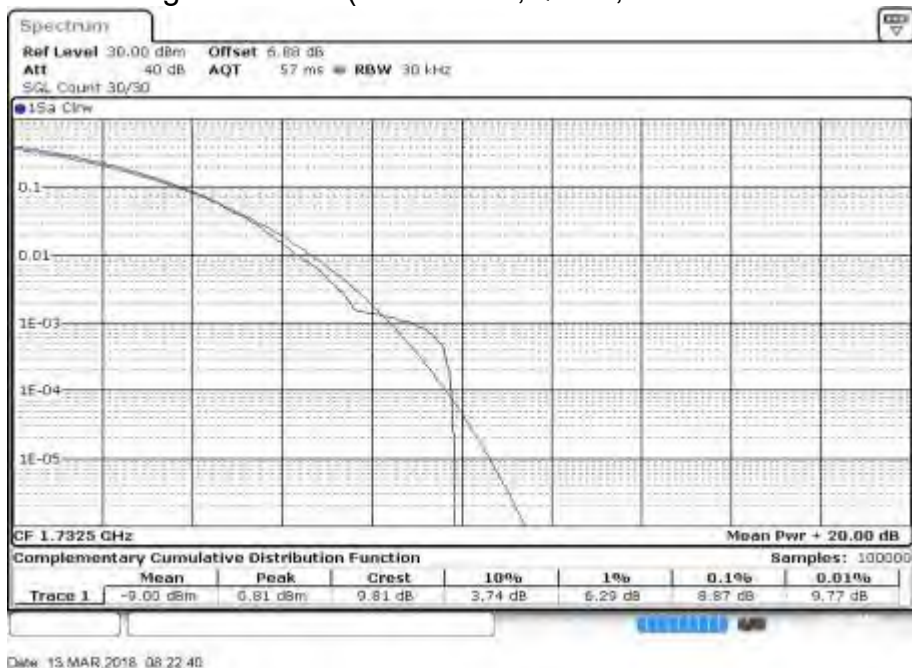
Peak-Average Ratio Plot(15MHz BW,QPSK,Band 4-mid Channel)



Peak-Average Ratio Plot(15MHz BW,16QAM,Band 4-mid Channel)



Peak-Average Ratio Plot(20MHz BW,QPSK,Band 4-mid Channel)



Peak-Average Ratio Plot(20MHz BW,16QAM,Band 4-mid Channel)

5 Spurious Emissions at antenna terminal

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
4	1720	20050	20	100	0	Fig.4	Fig.8

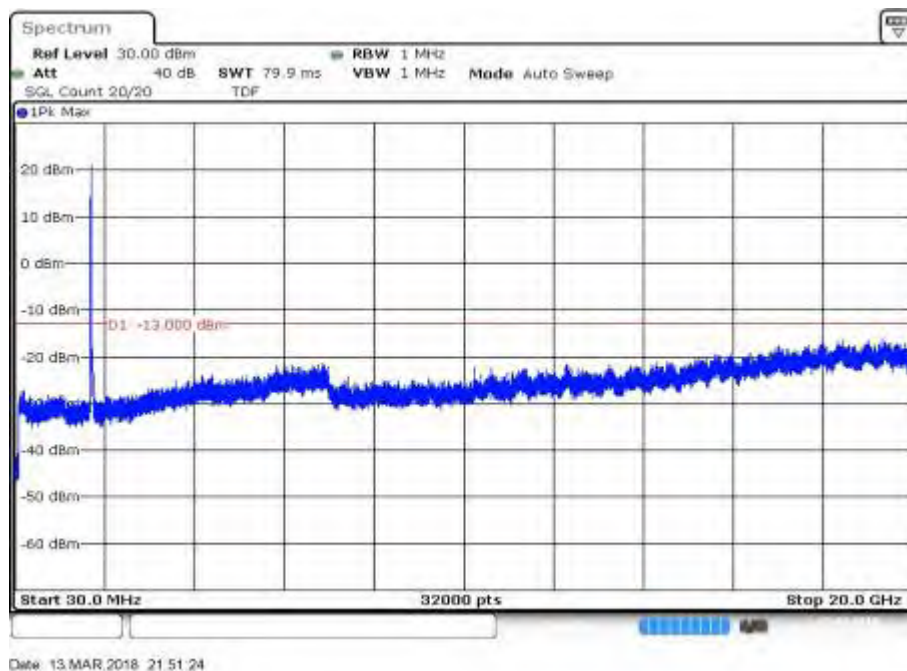


Fig.4

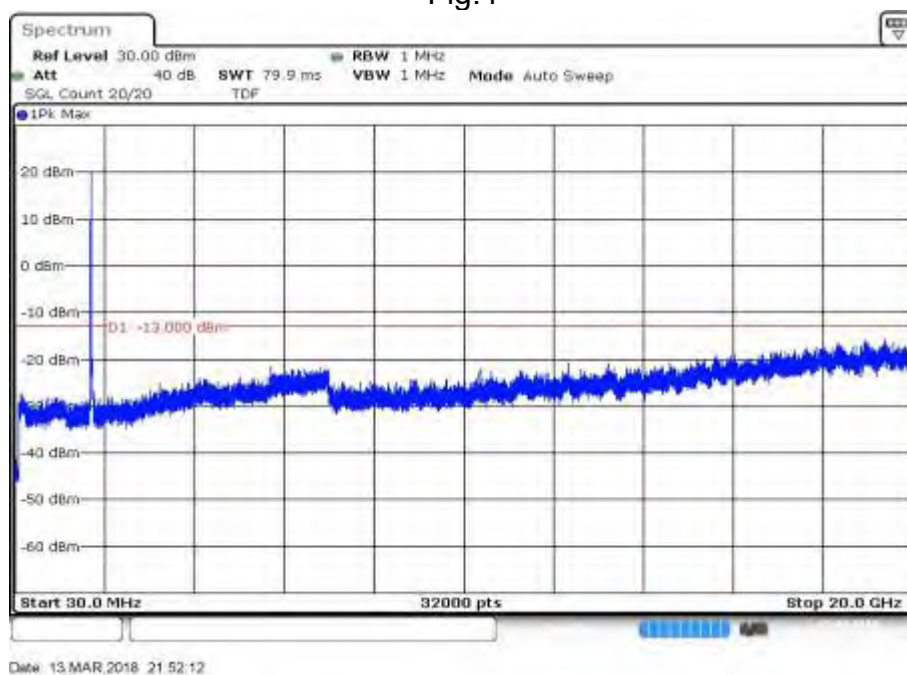


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
4	1732.5	20175	20	100	0	Fig.4	Fig.8

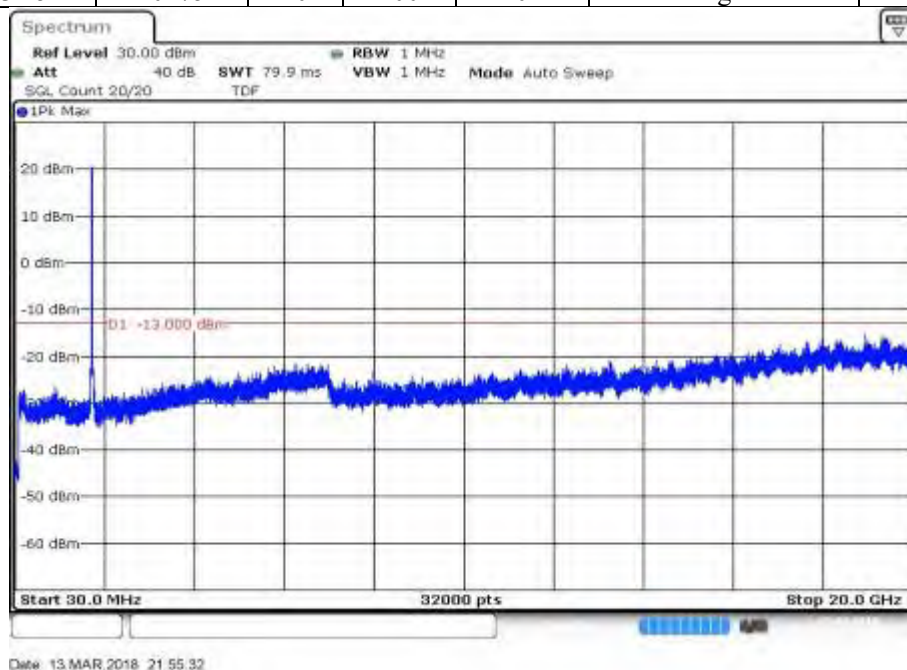


Fig.4

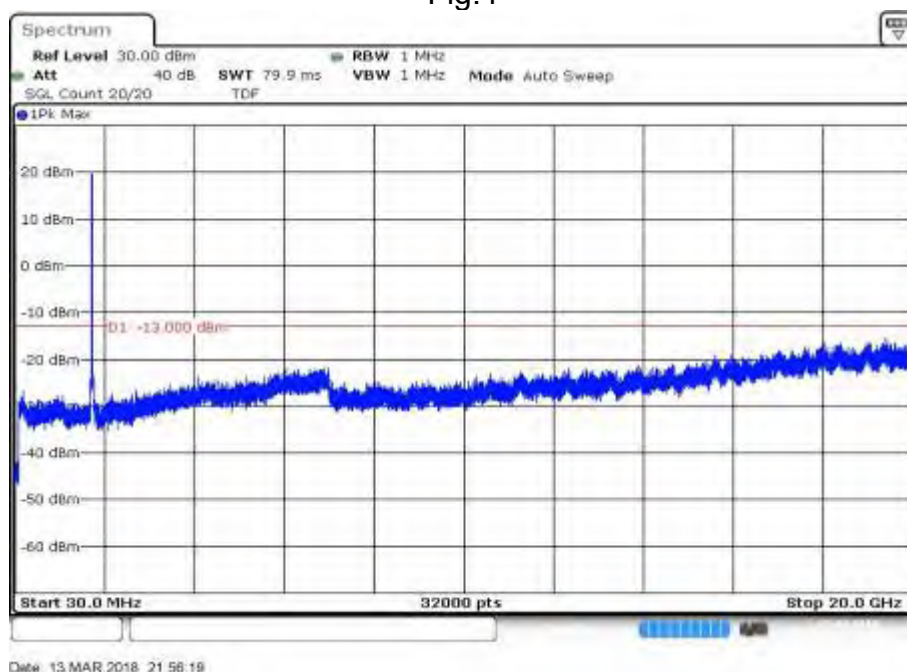


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
4	1745	20300	20	100	0	Fig.4	Fig.8

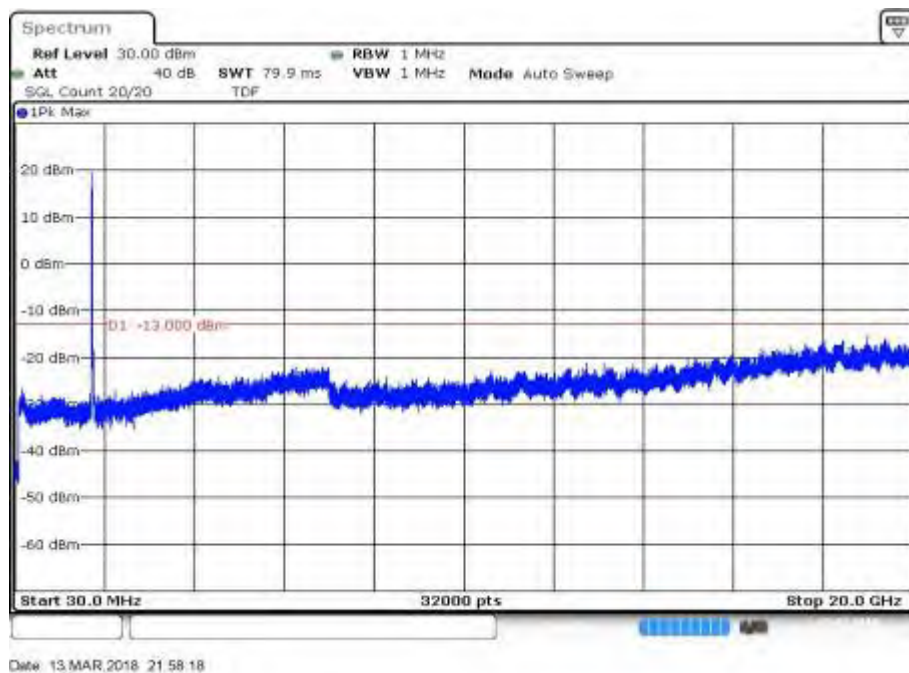


Fig.4

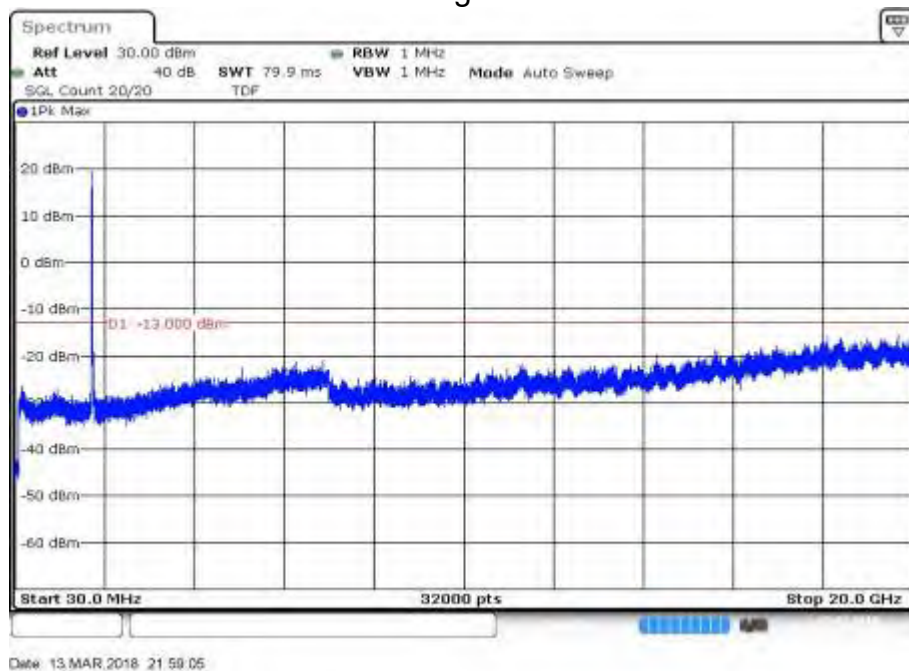


Fig.8

6 Band Edges Compliance

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1710.7	19957	1.4	1	0	Fig.1
				6	0	Fig.4

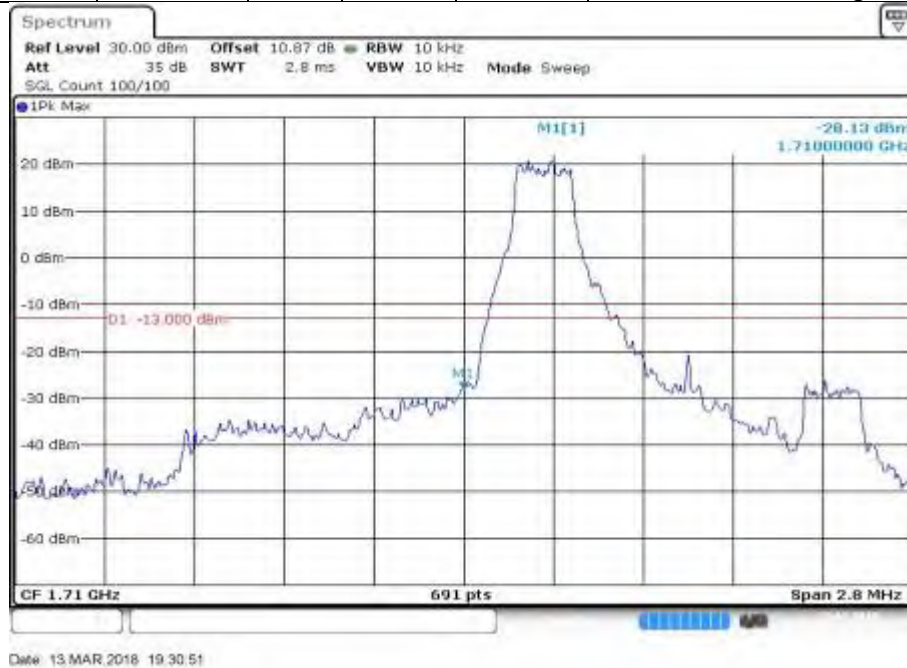


Fig.1

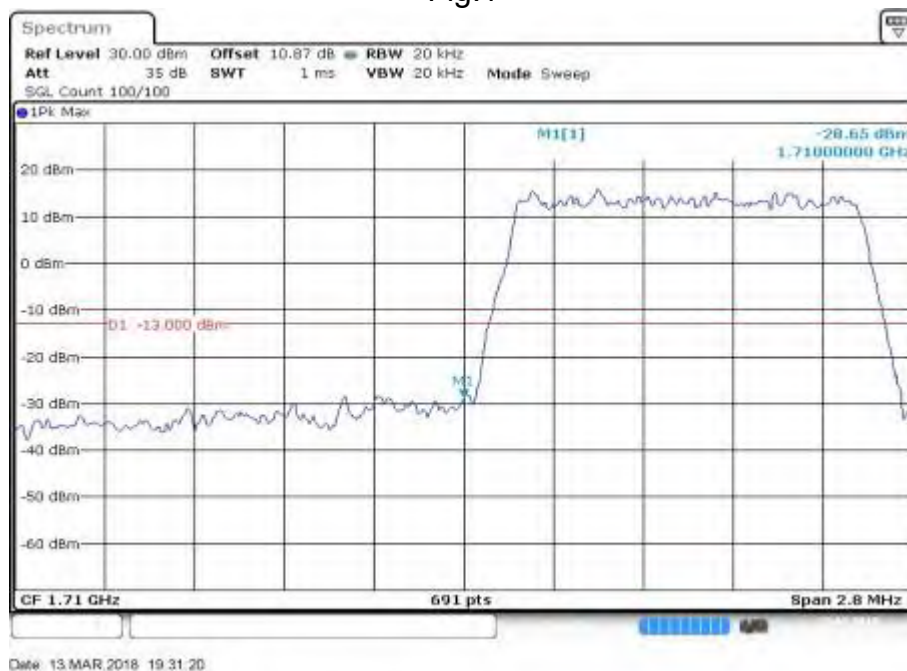


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1754.3	20393	1.4	1	0	Fig.1
				6	0	Fig.4



Fig.1

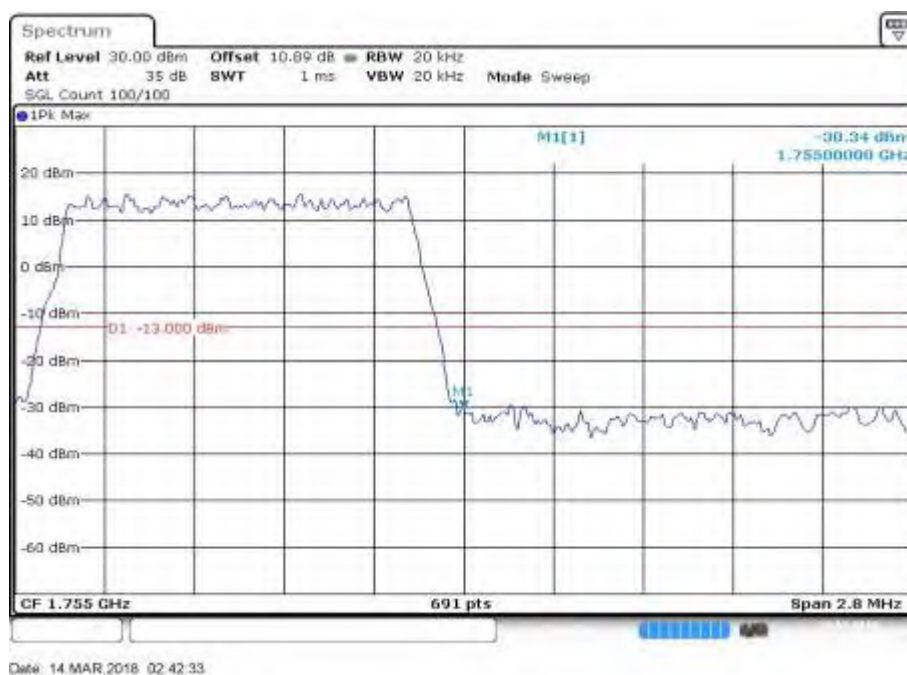


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1711.5	19965	3	1	0	Fig.1
				6	0	Fig.4

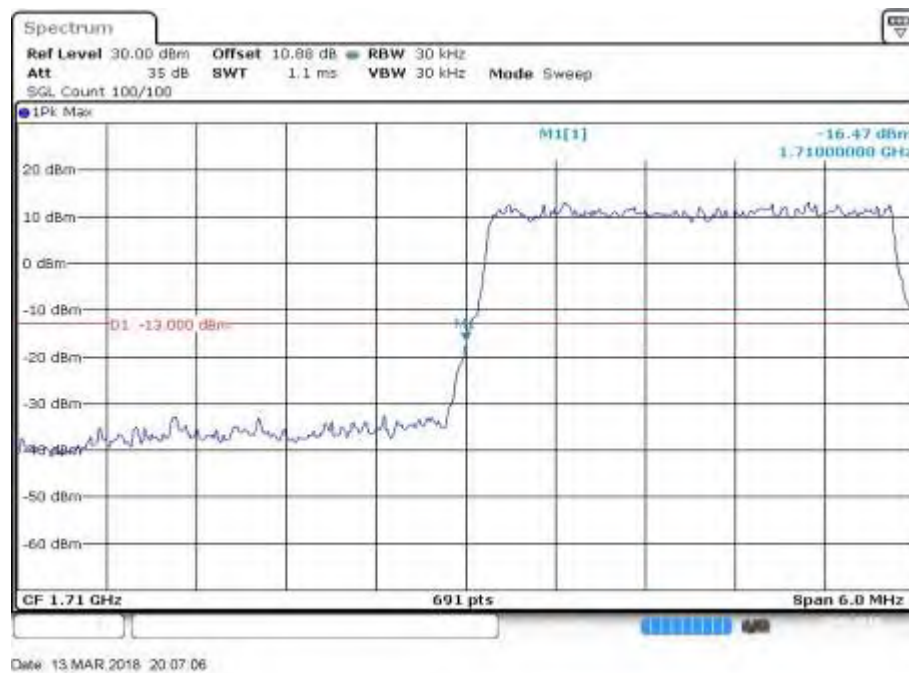


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1753.5	20385	3	1	0	Fig.1
				6	0	Fig.4

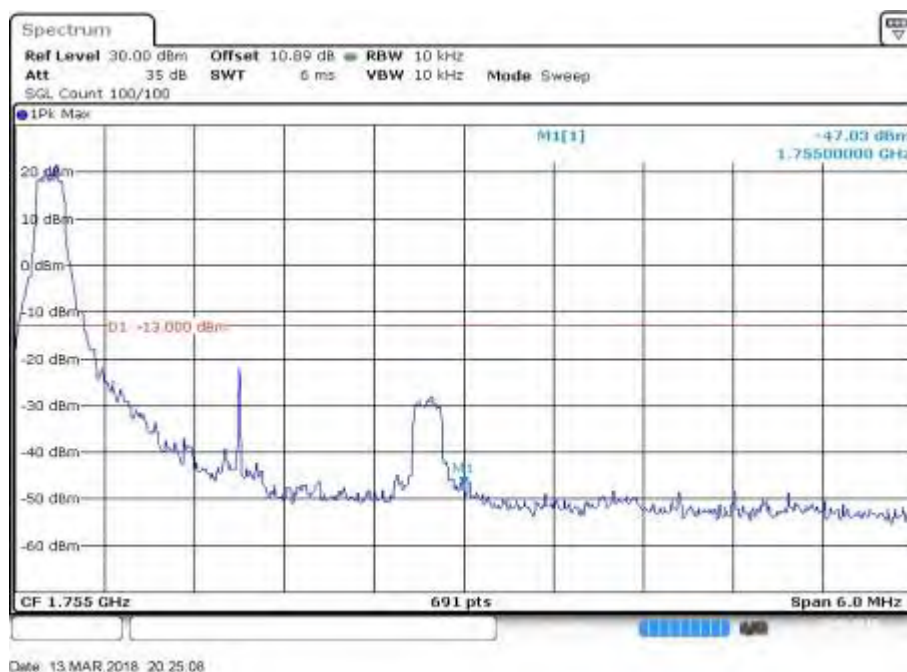


Fig.1

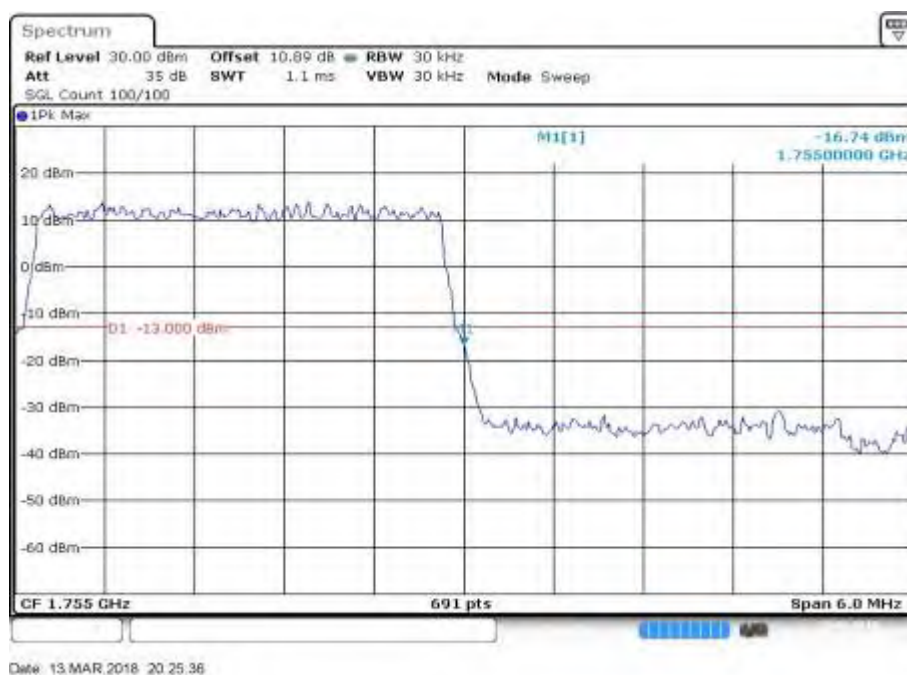


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1712.5	19975	5	1	0	Fig.1
				25	0	Fig.4

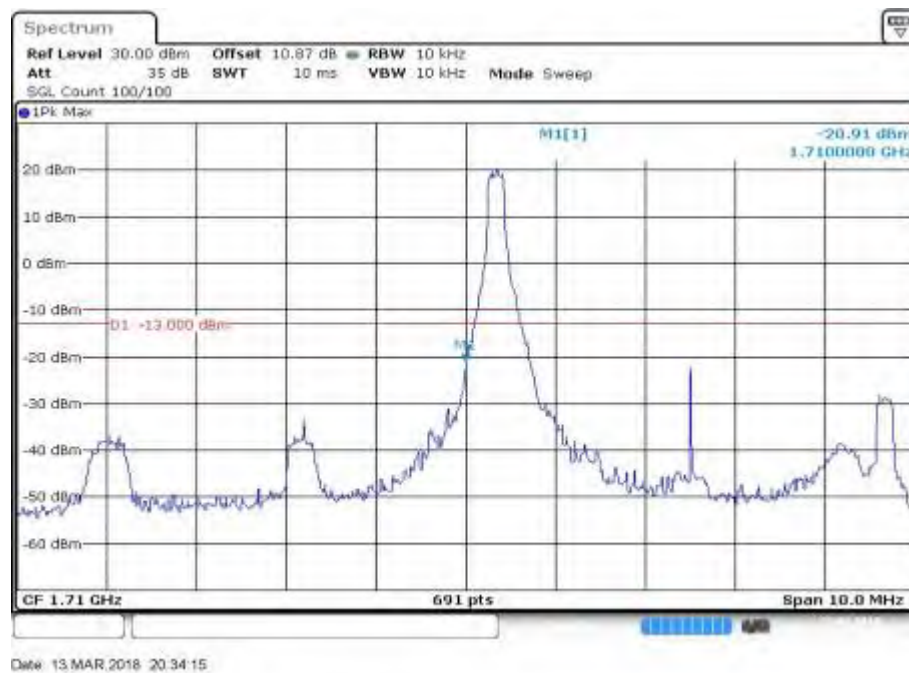


Fig.1

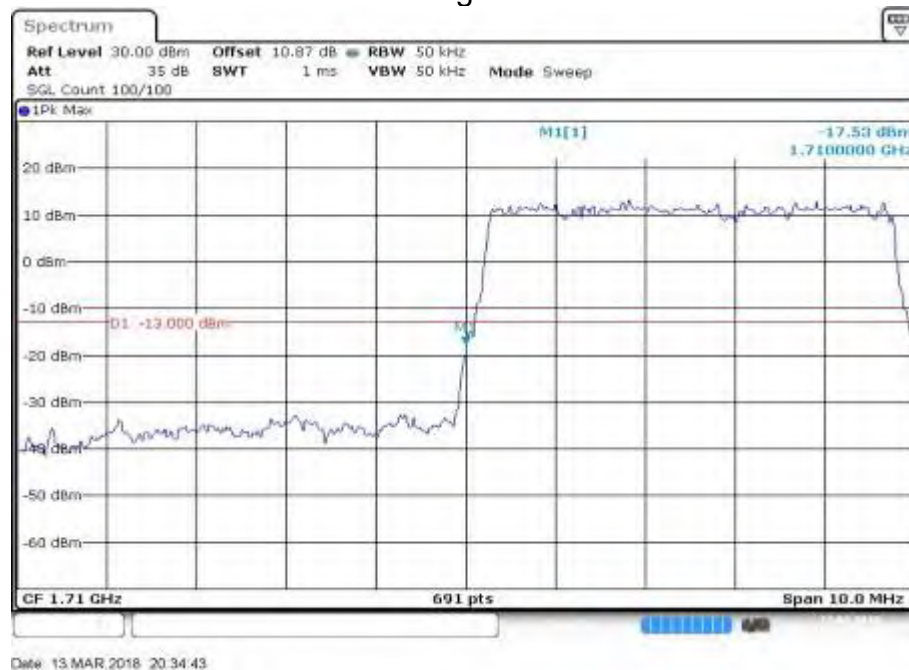


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1752.5	20375	5	1	0	Fig.1
				25	0	Fig.4



Fig.1

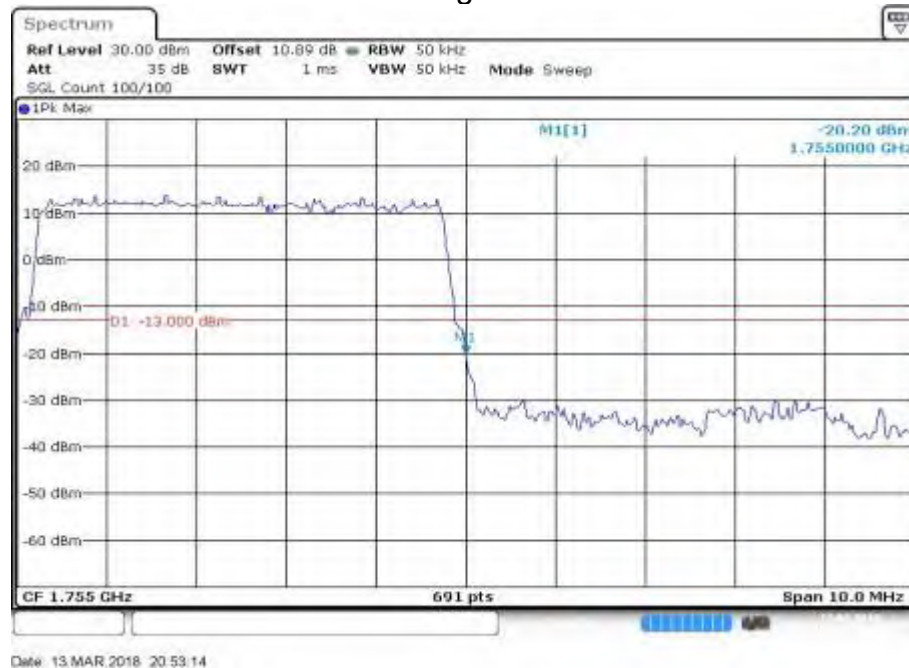


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1715	20000	10	1	0	Fig.1
				50	0	Fig.4



Fig.1



Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1750	20350	10	1	0	Fig.1
				50	0	Fig.4

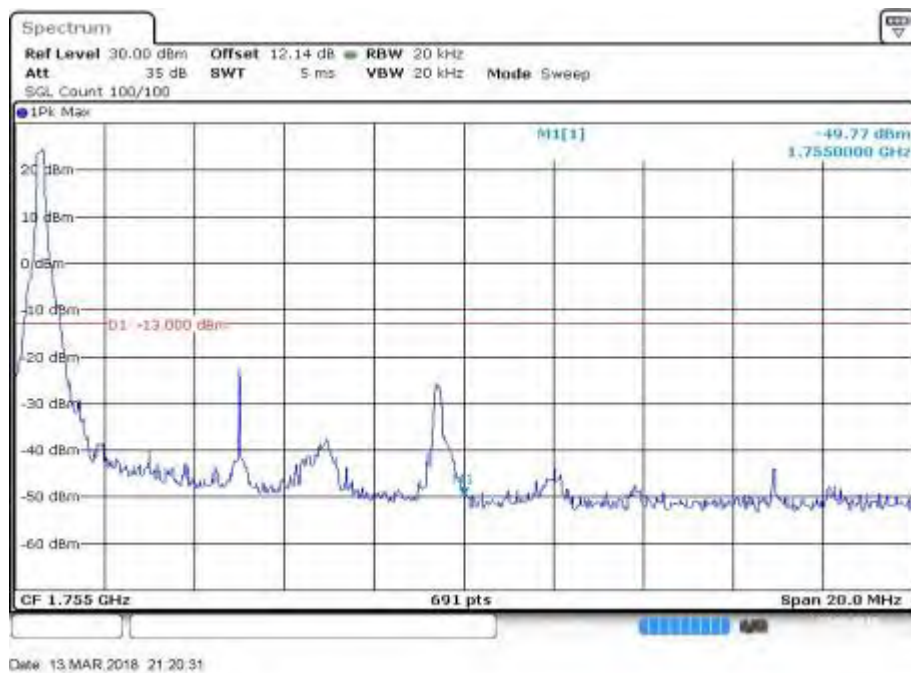


Fig.1

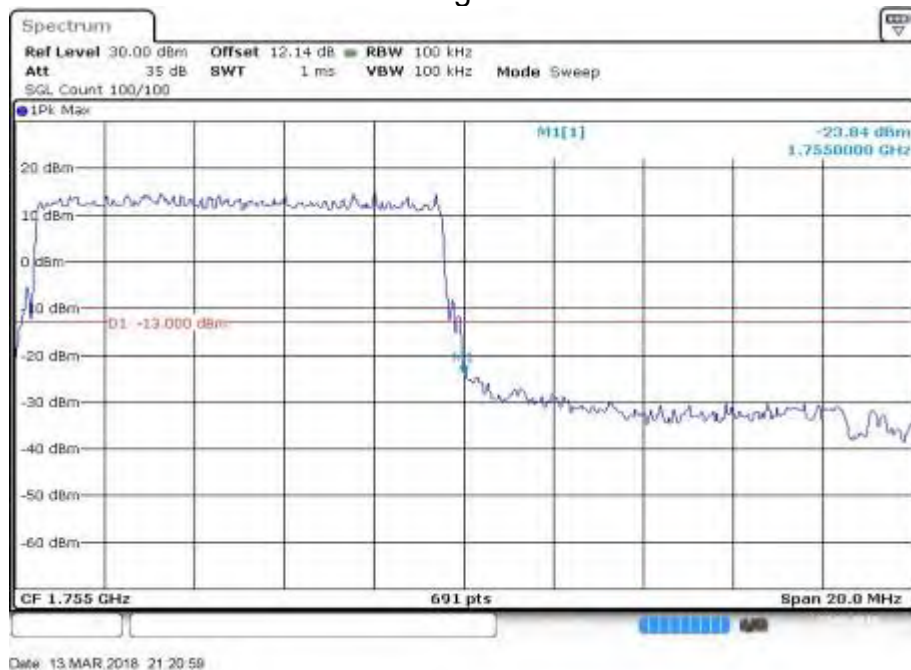


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1717.5	20025	15	1	0	Fig.1
				75	0	Fig.4

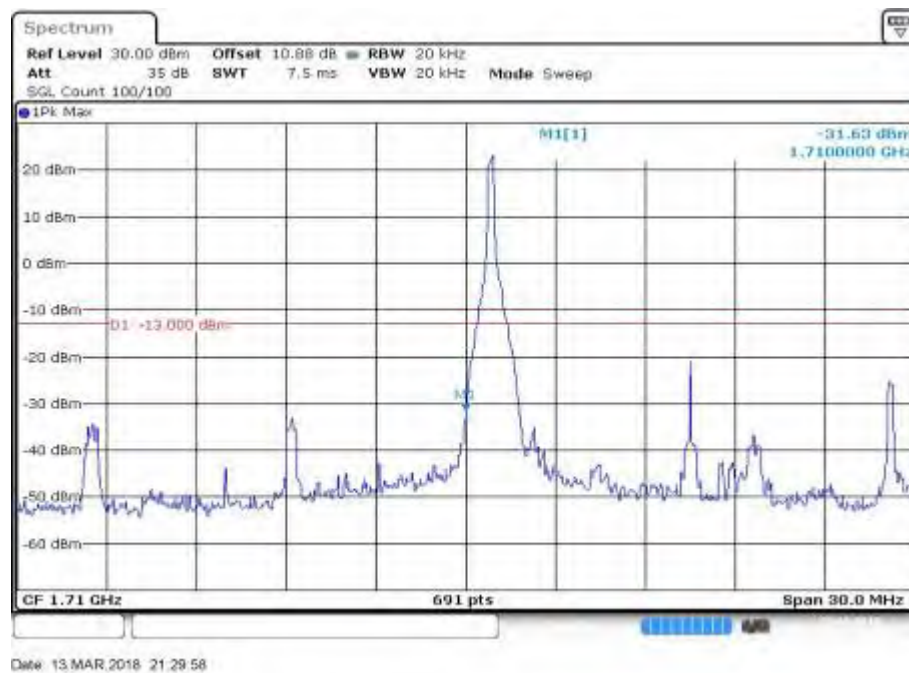


Fig.1

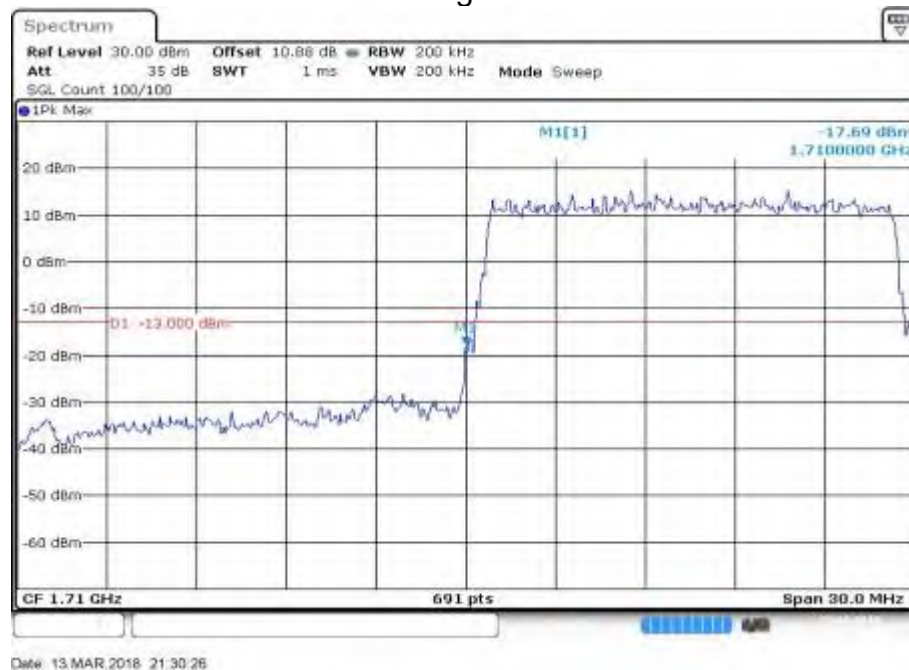


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1747.5	20325	15	1	0	Fig.1
				75	0	Fig.4

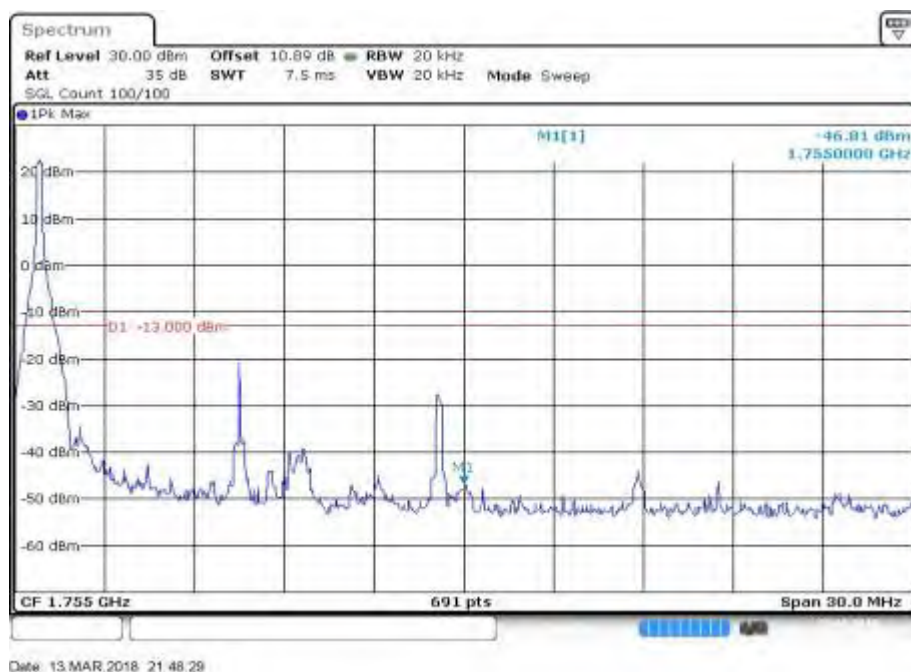


Fig.1

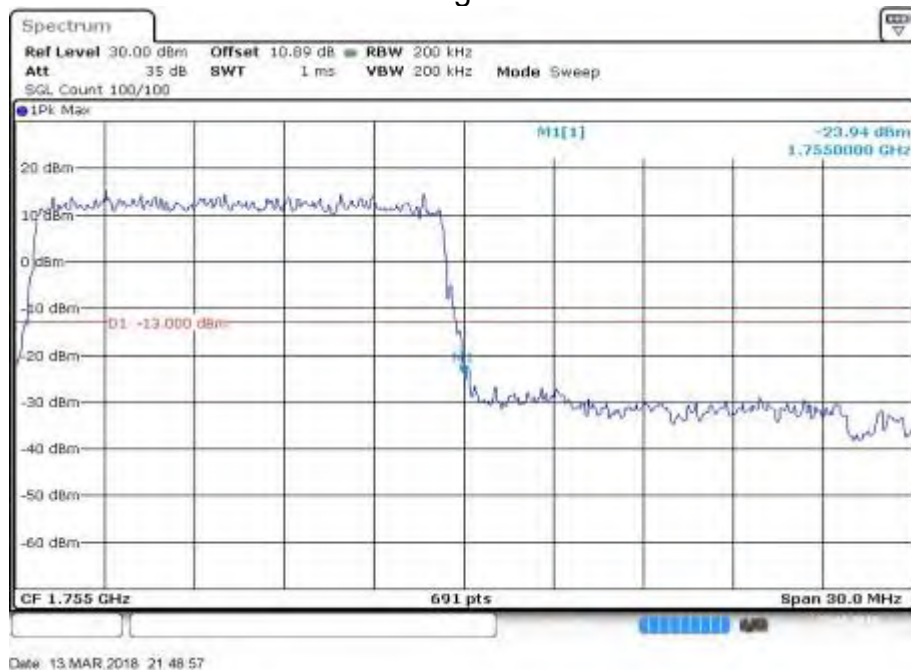


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1720	20050	20	1	0	Fig.1
				100	0	Fig.4

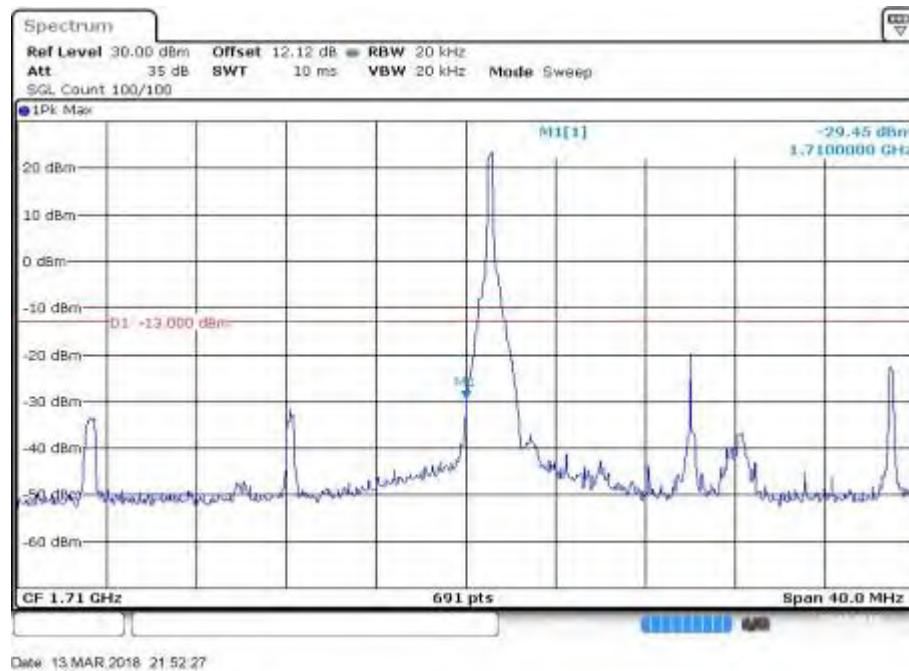


Fig.1

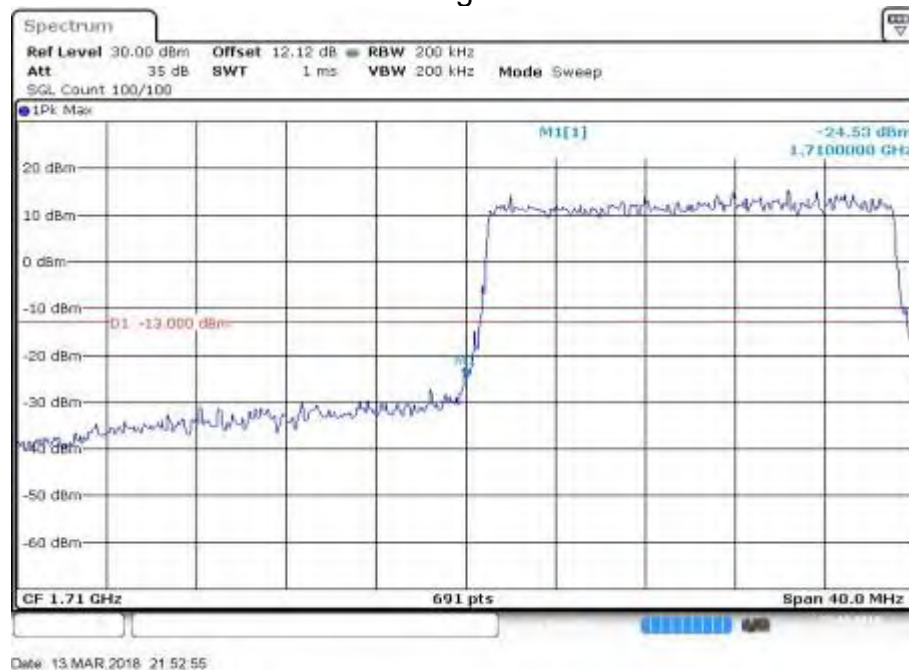


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
4	1745	20300	20	1	0	Fig.1
				100	0	Fig.4

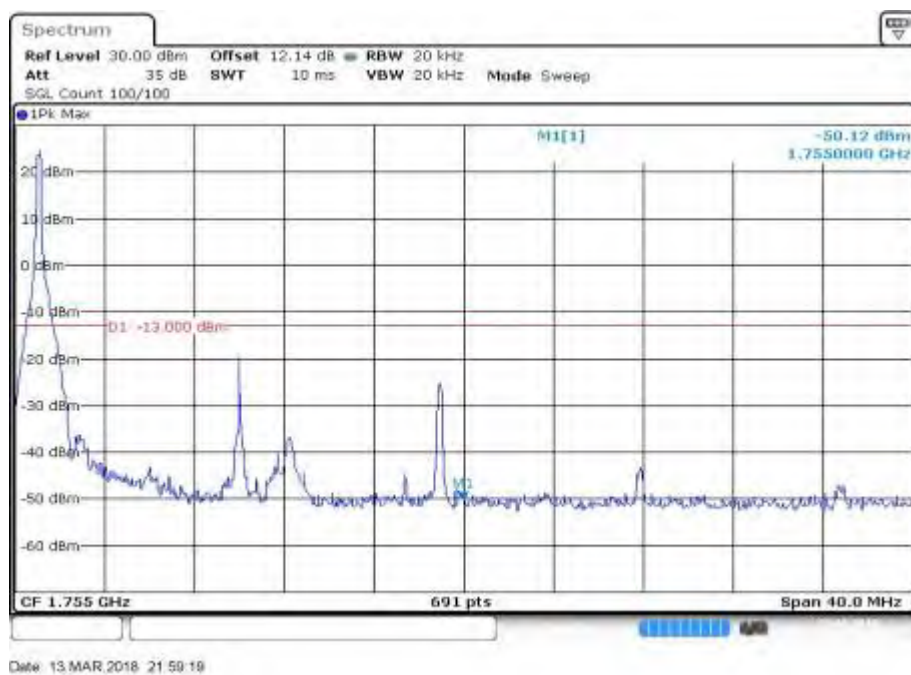


Fig.1

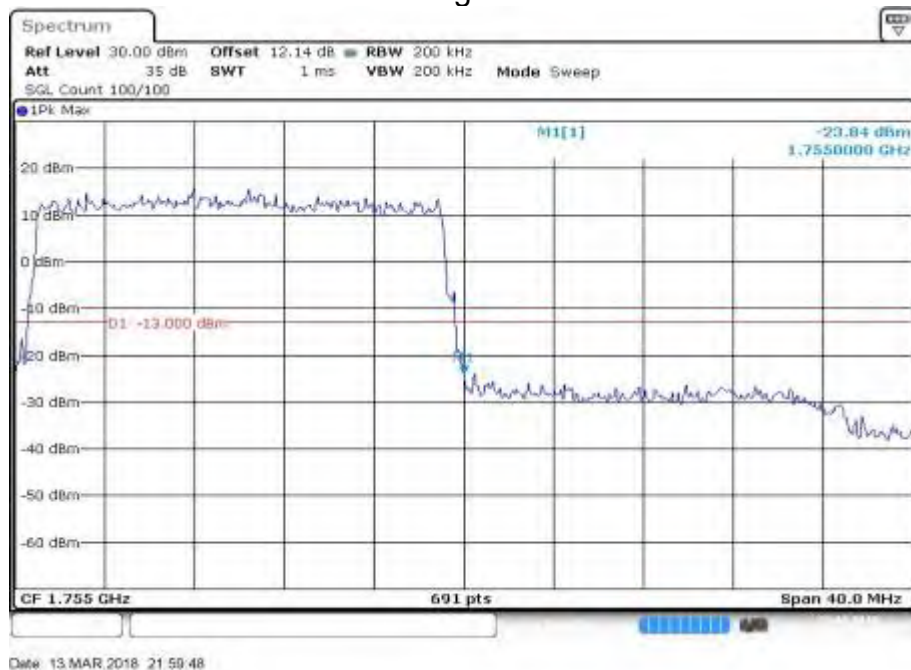


Fig.4

7 Frequency Stability

Test result:

Band	BW	Test Result (ppm)@NV		Test Result (ppm)@NT	
		Temperature(°C)		Voltage	
4	1.4	-30	0.003	LV	0.008
		-20	0.006		
		-10	0.000		
		0	0.009		
		10	0.001		
		20	-0.001	HV	-0.003
		30	-0.006		
		40	-0.002		
		50	0.010		
	3	-30	0.004	LV	0.006
		-20	0.007		
		-10	0.003		
		0	0.007		
		10	0.006		
		20	0.003	HV	0.005
		30	0.004		
		40	0.006		
		50	0.008		
	5	-30	0.006	LV	0.006
		-20	0.003		
		-10	0.001		
		0	0.001		
		10	0.006		
		20	0.006	HV	0.002
		30	0.004		
		40	0.003		
		50	0.005		
	10	-30	0.006	LV	0.001
		-20	0.004		
		-10	0.006		
		0	0.003		
		10	0.003		



		20	0.005	HV	0.006
		30	0.003		
		40	0.002		
		50	0.006		
	15	-30	0.003	LV	0.004
		-20	0.002		
		-10	0.003		
		0	0.004		
		10	0.006	HV	0.001
		20	0.001		
		30	0.006		
		40	0.002		
		50	0.005	LV	0.002
	20	-30	0.001		
		-20	0.002		
		-10	0.002		
		0	0.006		
		10	0.003		
		20	0.005	HV	0.000
		30	0.002		
		40	0.001		
		50	0.001		

LTE Band 5

1 RF Power Output

Test result:

Antenna Gain: -2.43dBi

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	824.7	20407	1.4	1	0	22.5	20.1
				1	5	22.4	20.0
				3	2	22.5	20.1
				6	0	21.4	19.0
	836.5	20525		1	0	22.3	19.9
				1	5	22.3	19.9
				3	2	22.4	20.0
				6	0	21.3	18.9
	848.3	20643		1	0	22.1	19.7
				1	5	22.2	19.8
				3	2	22.2	19.8
				6	0	21.3	18.9

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	824.7	20407	1.4	1	0	21.5	19.1
				1	5	21.6	19.2
				3	2	21.5	19.1
				6	0	20.3	17.9
	836.5	20525		1	0	21.5	19.1
				1	5	21.4	19.0
				3	2	21.3	18.9
				6	0	20.4	18.0
	848.3	20643		1	0	21.4	19.0
				1	5	21.3	18.9
				3	2	21.3	18.9
				6	0	20.1	17.7

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	825.5	20415	3	1	0	22.5	20.1
				1	14	22.3	19.9
				8	4	21.4	19.0
				15	0	21.4	19.0
	836.5	20525		1	0	22.5	20.1
				1	14	22.3	19.9
				8	4	21.4	19.0
				15	0	21.4	19.0
	847.5	20635		1	0	22.3	19.9
				1	14	22.2	19.8
				8	4	21.3	18.9
				15	0	21.3	18.9

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	825.5	20415	3	1	0	21.9	19.5
				1	14	22.0	19.6
				8	4	20.5	18.1
				15	0	20.5	18.1
	836.5	20525		1	0	21.9	19.5
				1	14	22.0	19.6
				8	4	20.5	18.1
				15	0	20.5	18.1
	847.5	20635		1	0	21.5	19.1
				1	14	21.4	19.0
				8	4	20.3	17.9
				15	0	20.4	18.0

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	826.5	20425	5	1	0	22.5	20.1
				1	24	22.3	19.9
				12	6	21.4	19.0
				25	0	21.4	19.0
	836.5	20525		1	0	22.5	20.1
				1	24	22.5	20.1
				12	6	21.4	19.0
				25	0	21.4	19.0
	846.5	20625		1	0	22.4	20.0
				1	24	22.3	19.9
				12	6	21.3	18.9
				25	0	21.3	18.9

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	826.5	20425	5	1	0	21.4	19.0
				1	24	21.4	19.0
				12	6	20.4	18.0
				25	0	20.4	18.0
	836.5	20525		1	0	21.8	19.4
				1	24	21.7	19.3
				12	6	20.5	18.1
				25	0	20.4	18.0
	846.5	20625		1	0	21.5	19.1
				1	24	21.3	18.9
				12	6	20.3	17.9
				25	0	20.4	18.0



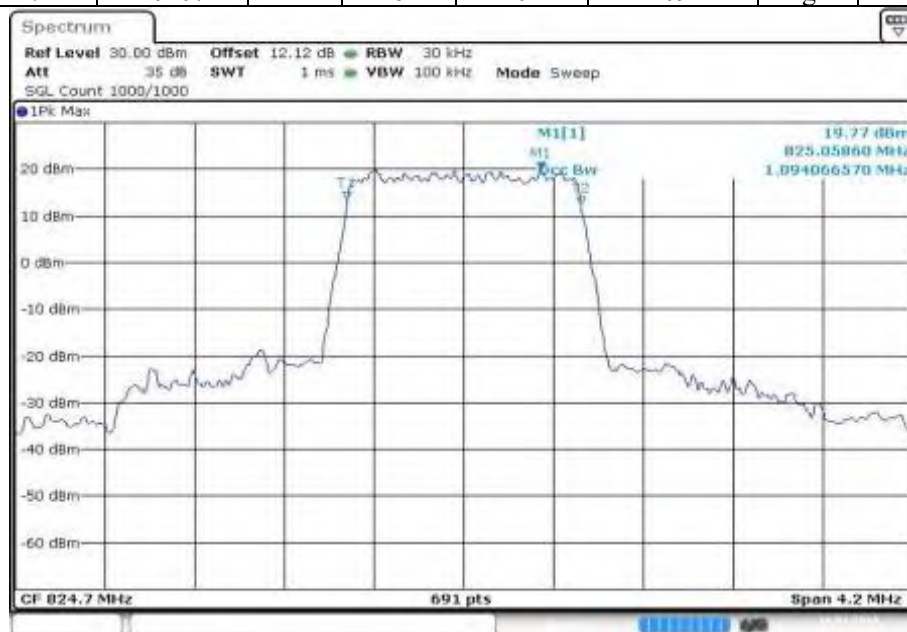
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	829	20450	10	1	0	22.5	20.1
				1	49	22.3	19.9
				24	12	21.4	19.0
				50	0	21.4	19.0
	836.5	20525		1	0	22.4	20.0
				1	49	22.5	20.1
				24	12	21.5	19.1
				50	0	21.5	19.1
	844	20600		1	0	22.5	20.1
				1	49	22.2	19.8
				24	12	21.4	19.0
				50	0	21.3	18.9

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	829	20450	10	1	0	22.0	19.6
				1	49	21.9	19.5
				24	12	20.5	18.1
				50	0	20.4	18.0
	836.5	20525		1	0	21.6	19.2
				1	49	21.6	19.2
				24	12	20.5	18.1
				50	0	20.5	18.1
	844	20600		1	0	21.6	19.2
				1	49	21.4	19.0
				24	12	20.3	17.9
				50	0	20.4	18.0

2 Occupied Bandwidth

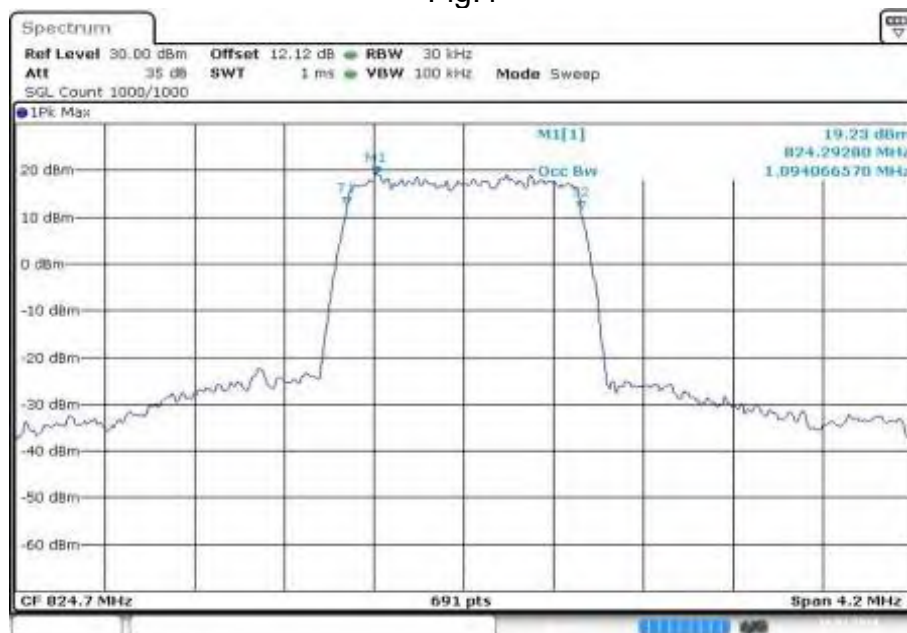
Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	824.7	20407	1.4	6	0	1.094	Fig.4	1.094	Fig.8



Date: 13.MAR 2018 22:04:20

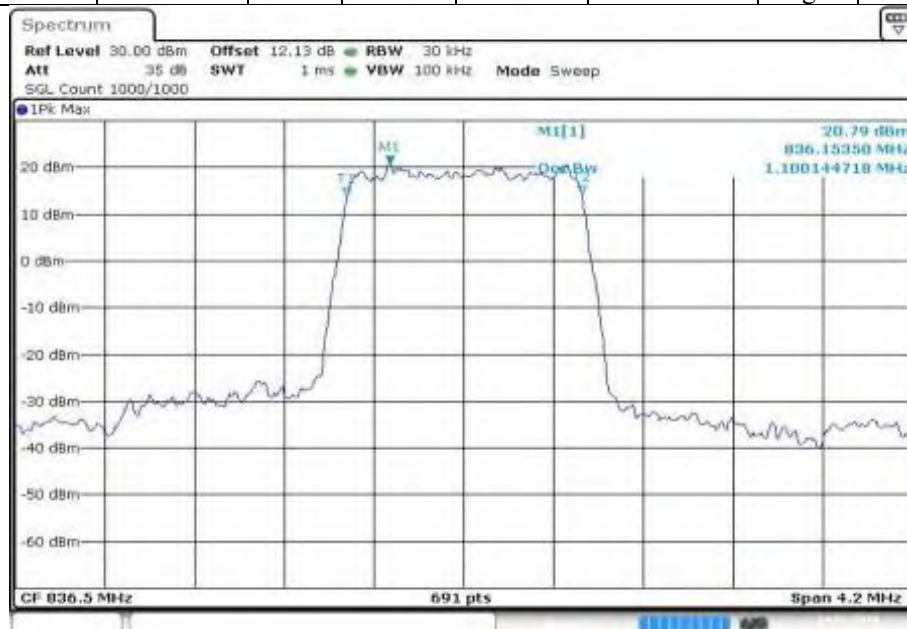
Fig.4



Date: 13.MAR 2018 22:07:05

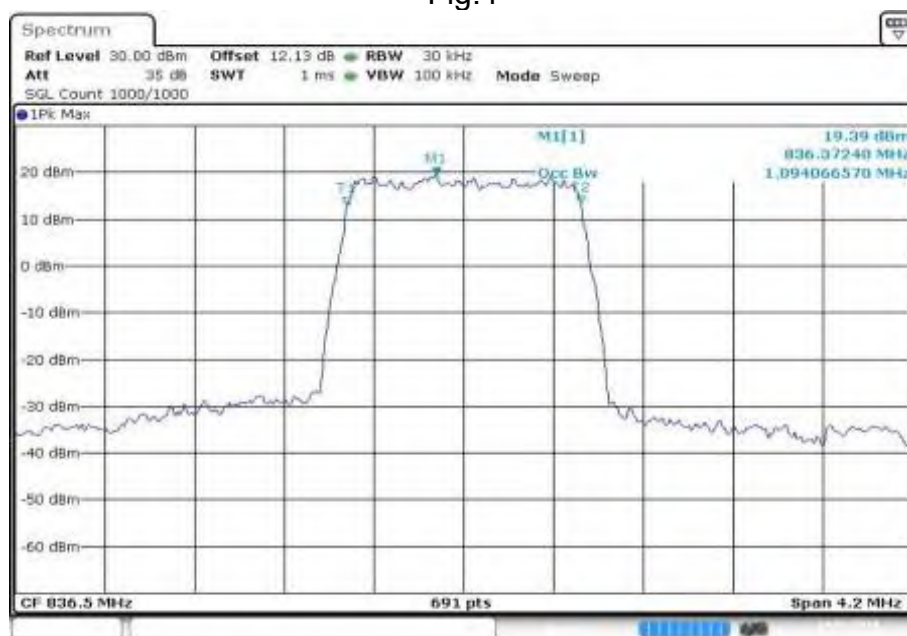
Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	836.5	20525	1.4	6	0	1.100	Fig.4	1.094	Fig.8



Date: 14.MAR.2018 02:58:14

Fig.4



Date: 14.MAR.2018 03:00:59

Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	848.3	20643	1.4	6	0	1.100	Fig.4	1.094	Fig.8

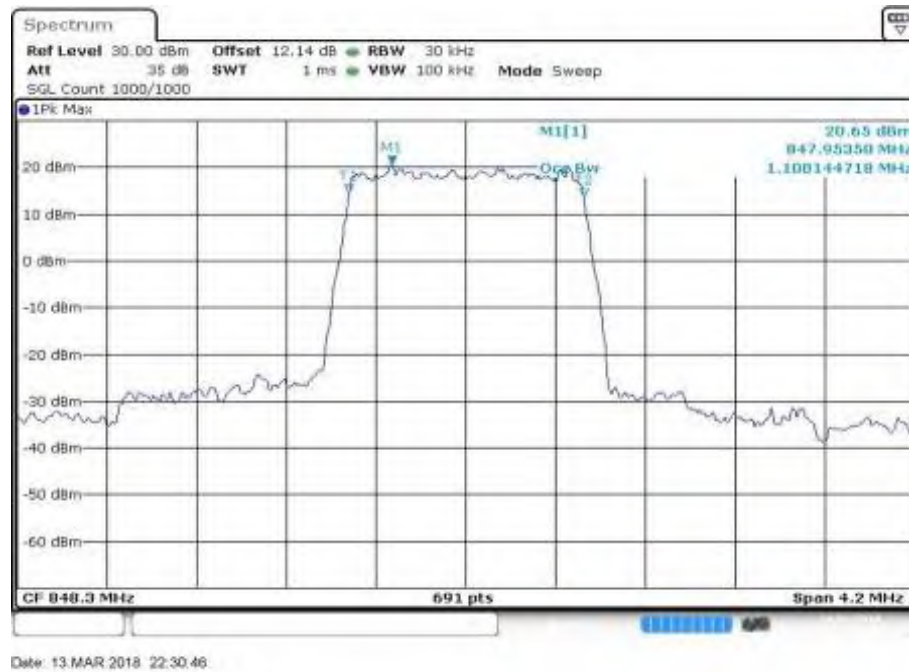


Fig.4

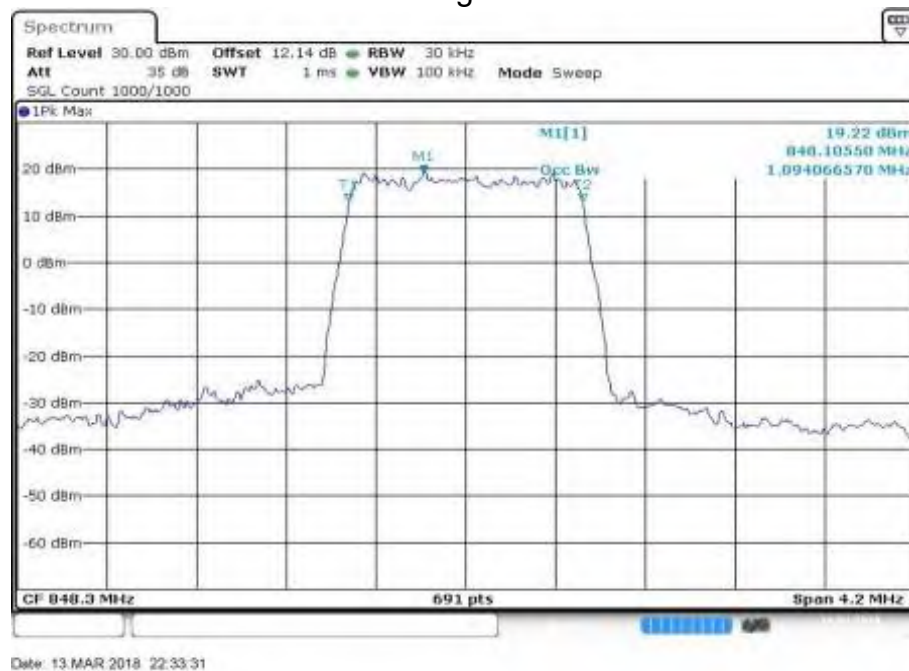


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	825.5	20415	3	15	0	2.735	Fig.4	2.735	Fig.8

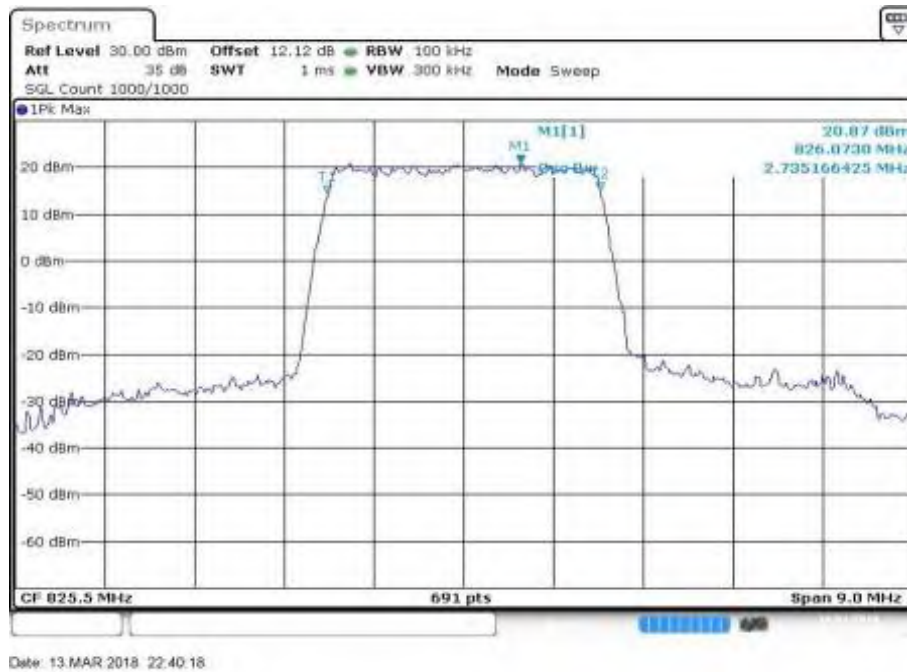


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	836.5	20525	3	15	0	2.748	Fig.4	2.735	Fig.8

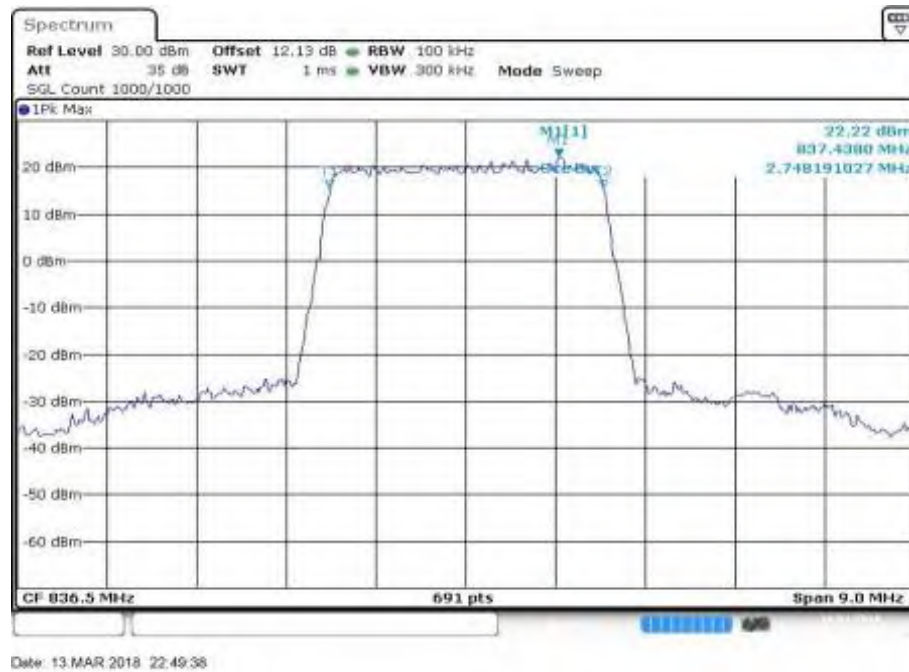


Fig.4

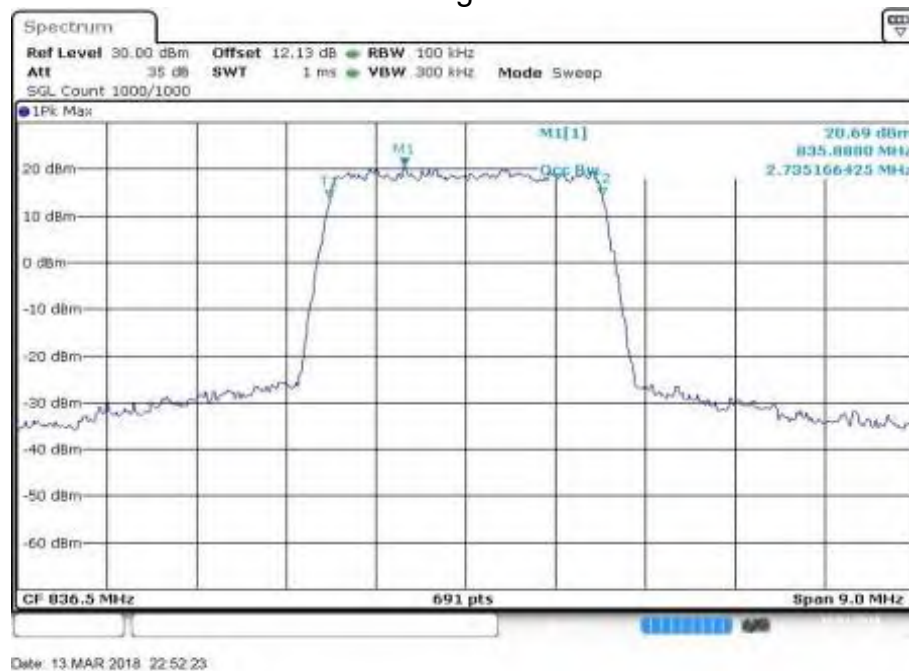


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	847.5	20635	3	15	0	2.735	Fig.4	2.735	Fig.8

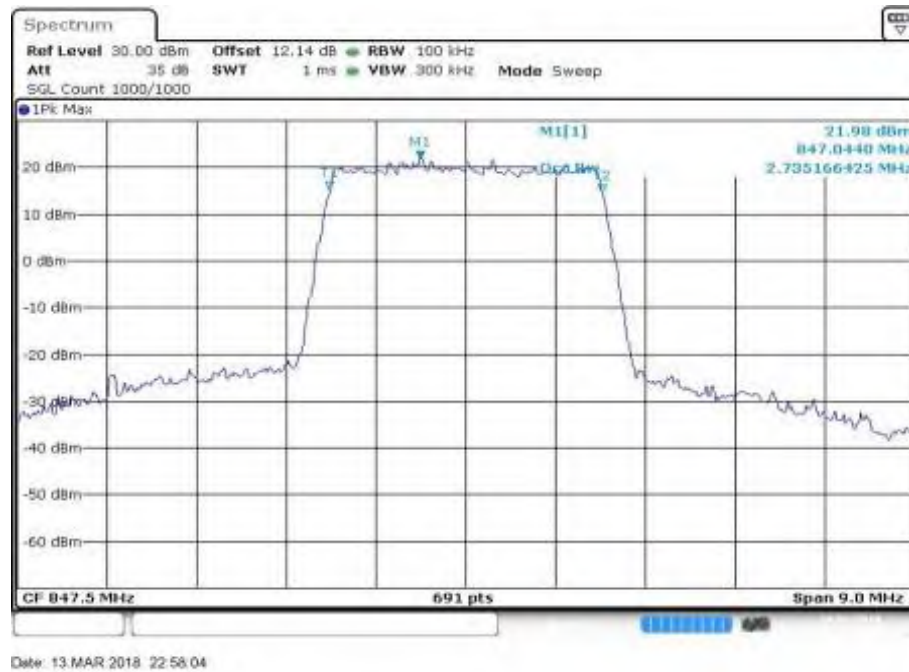


Fig.4

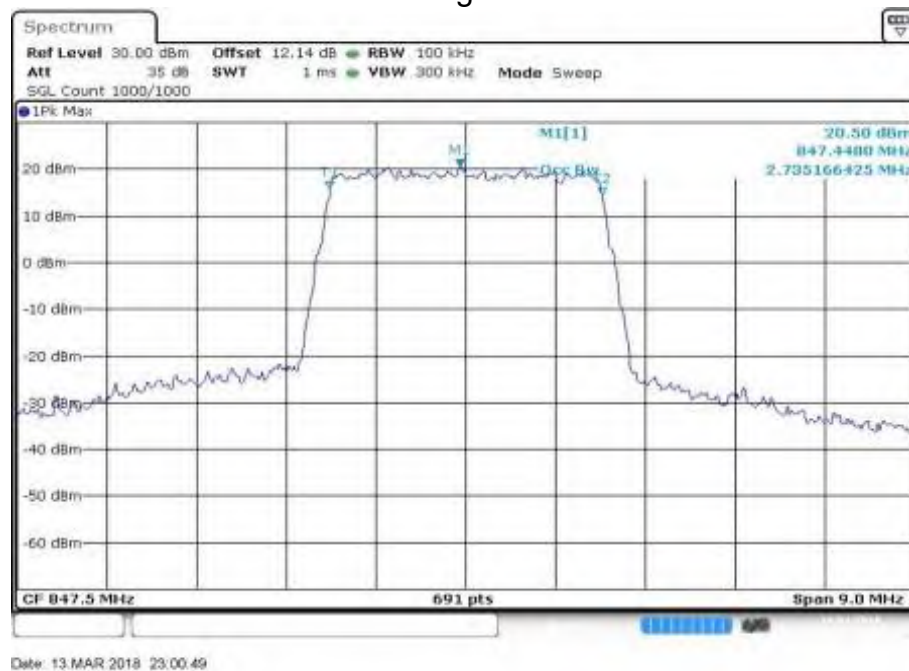


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	826.5	20425	5	25	0	4.515	Fig.4	4.493	Fig.8

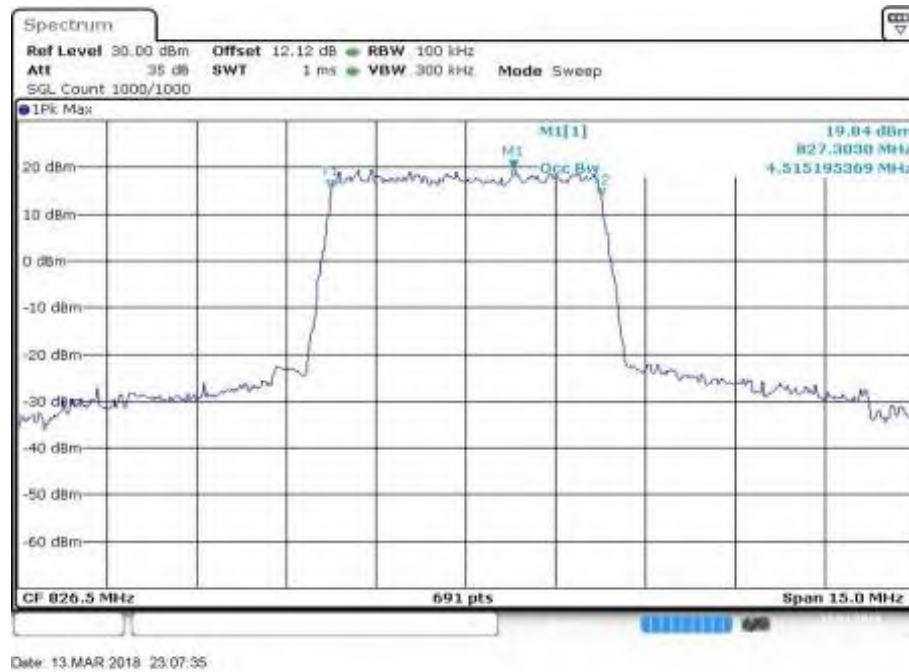


Fig.4

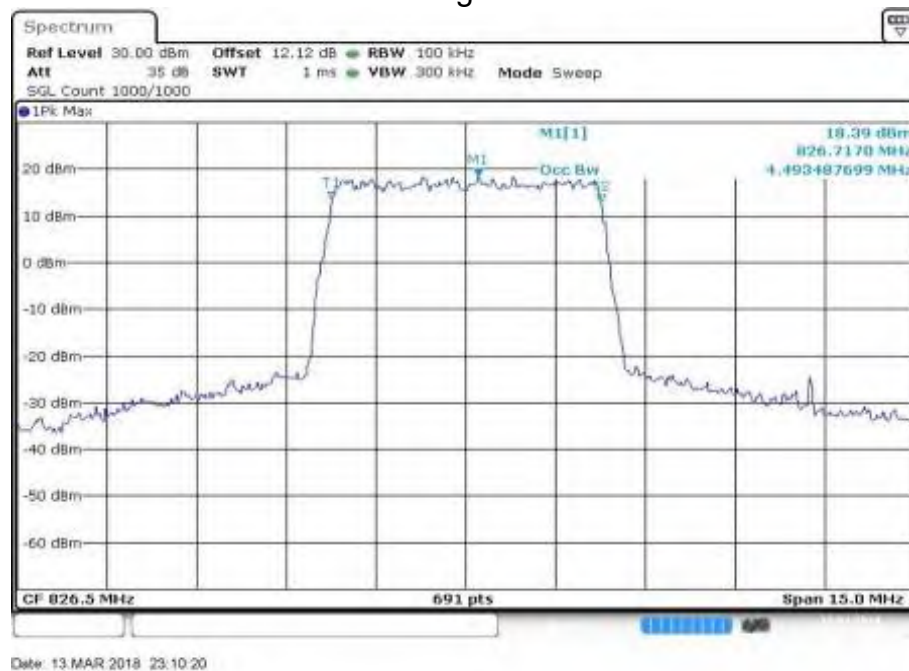


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	836.5	20525	5	25	0	4.515	Fig.4	4.515	Fig.8

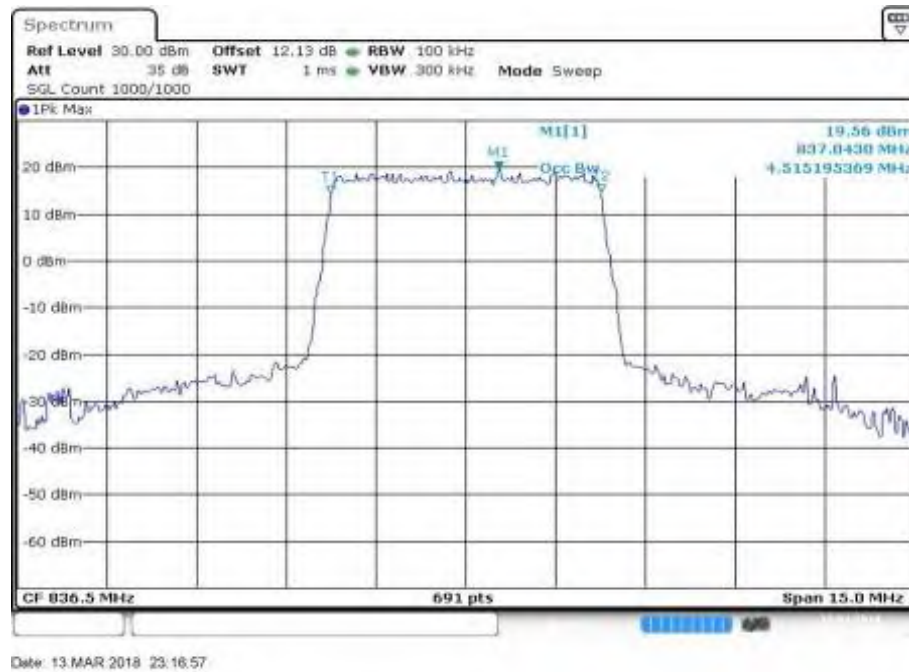


Fig.4

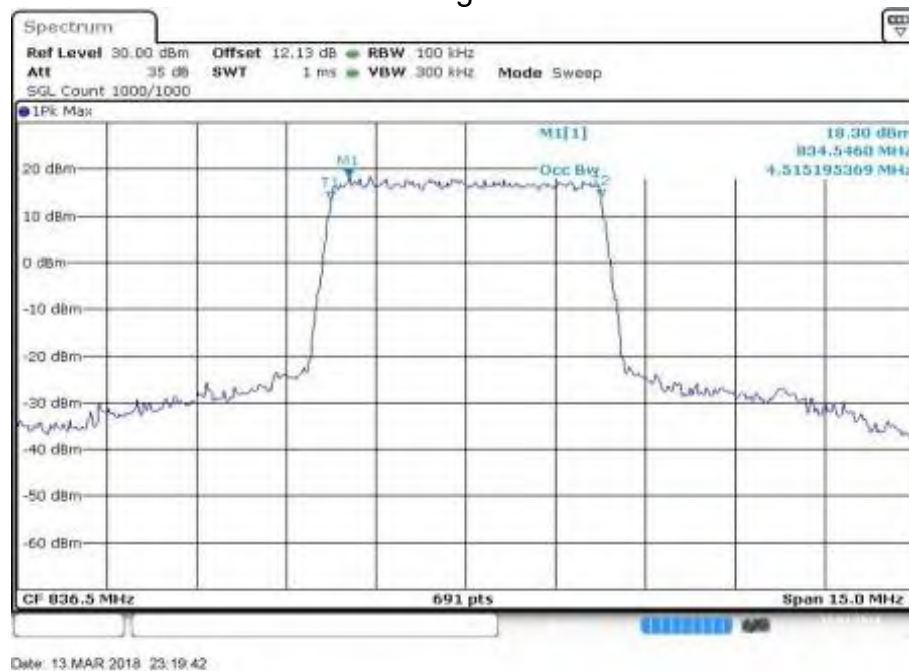


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	846.5	20625	5	25	0	4.515	Fig.4	4.515	Fig.8

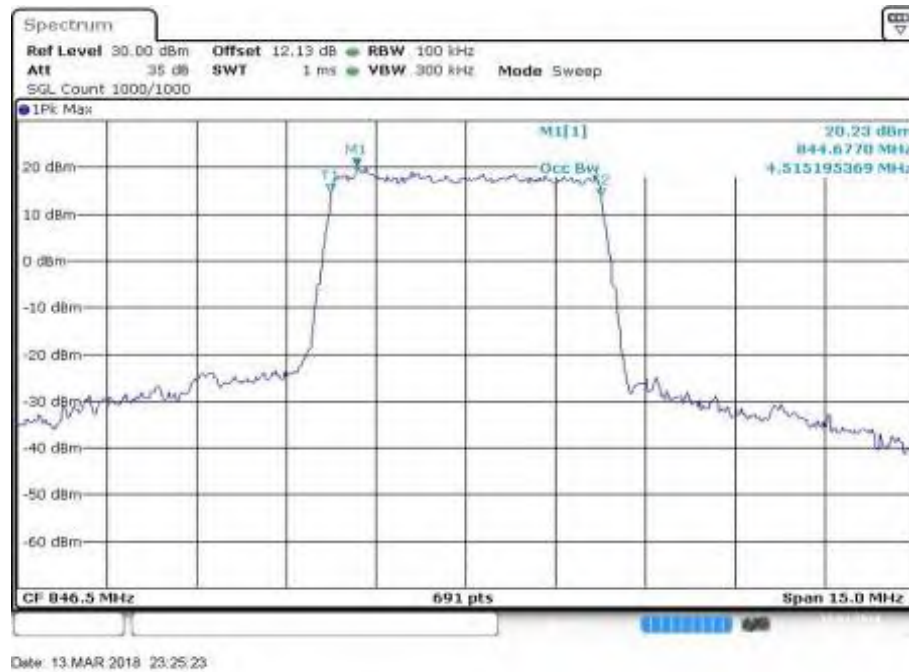


Fig.4

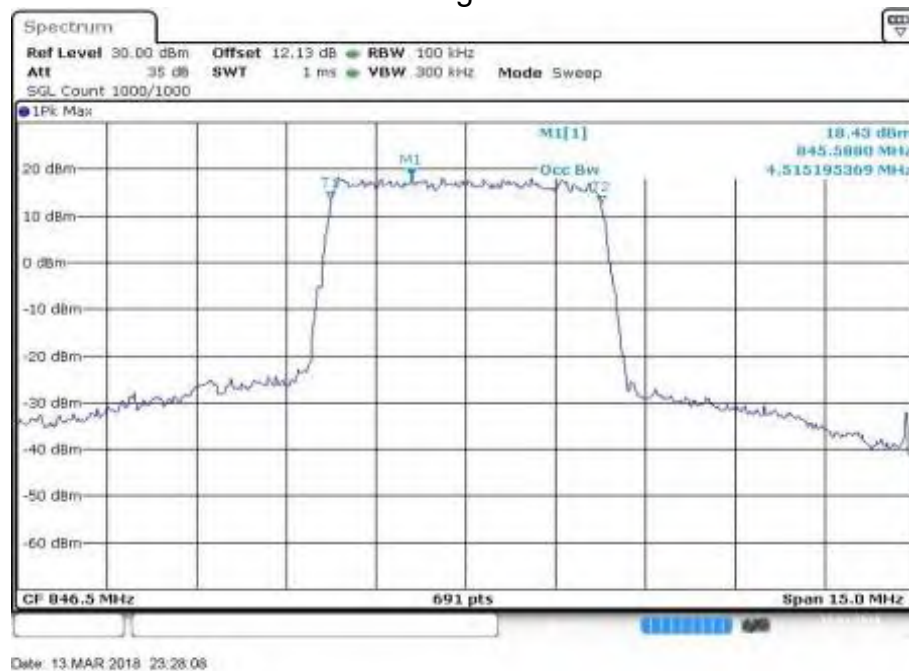


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	829	20450	10	50	0	9.074	Fig.4	9.074	Fig.8

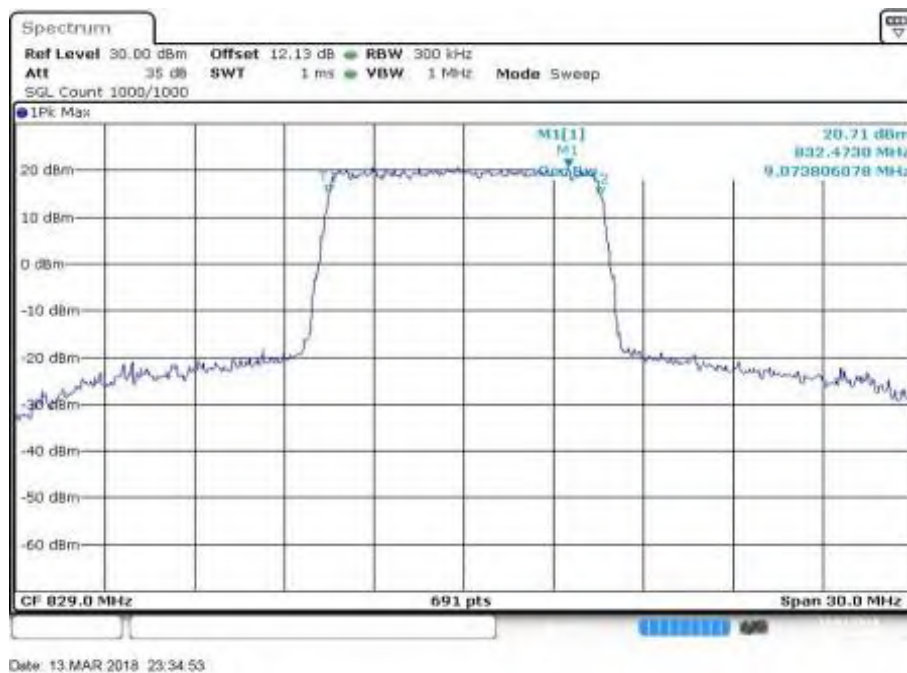


Fig.4

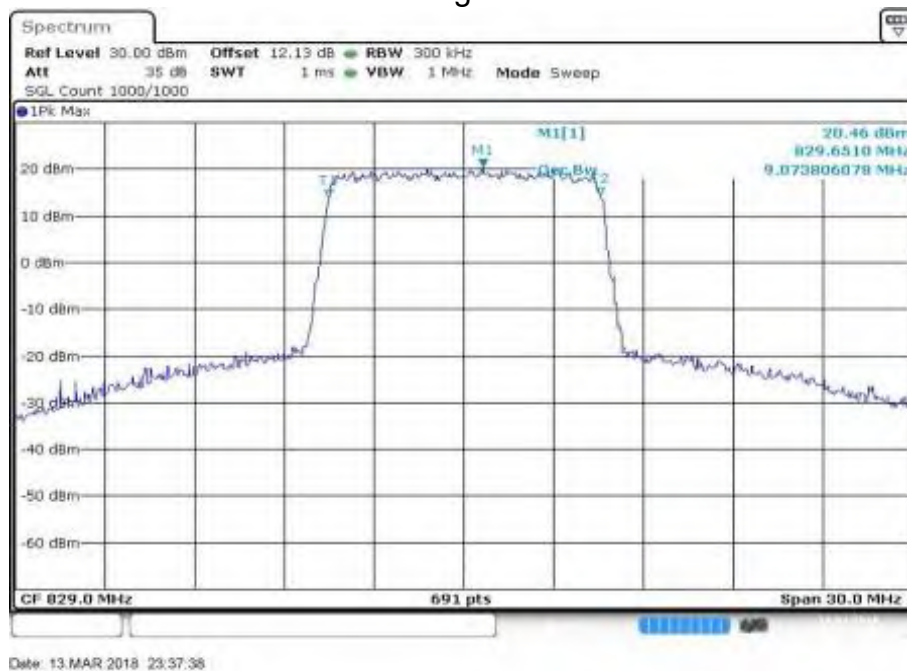


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	836.5	20525	10	50	0	9.074	Fig.4	9.074	Fig.8

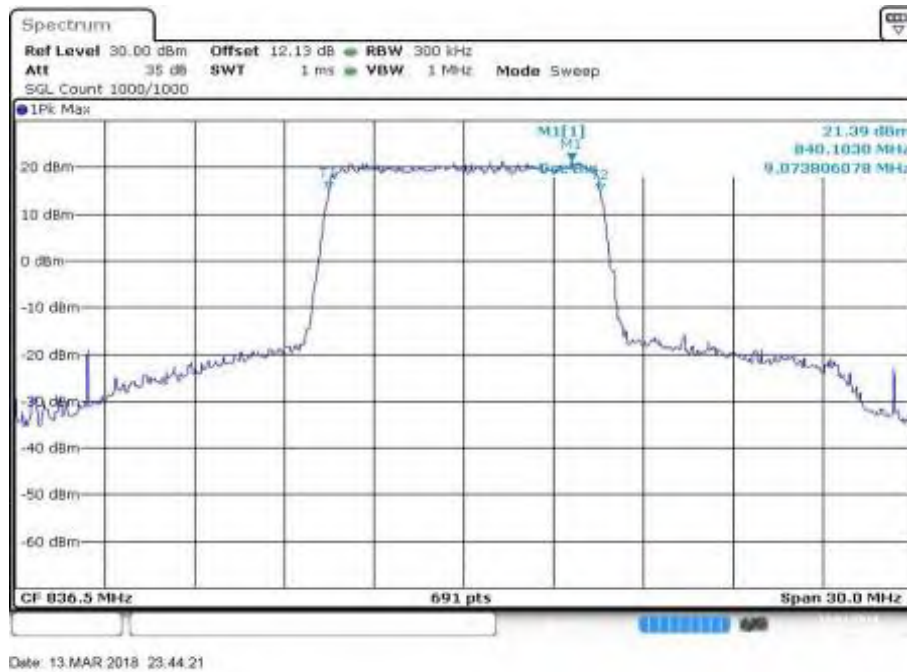


Fig.4

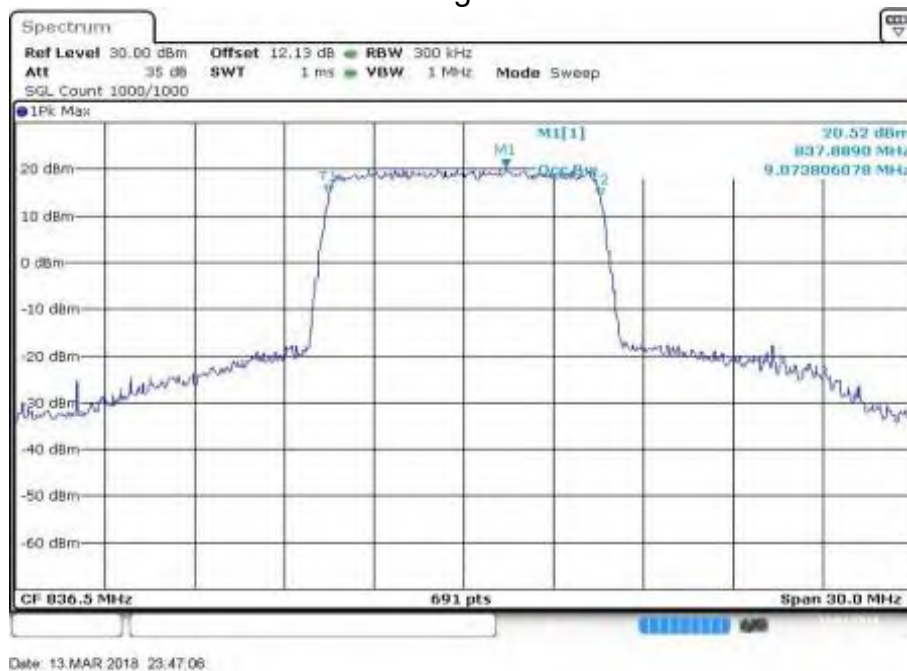


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
5	844	20600	10	50	0	9.030	Fig.4	9.030	Fig.8

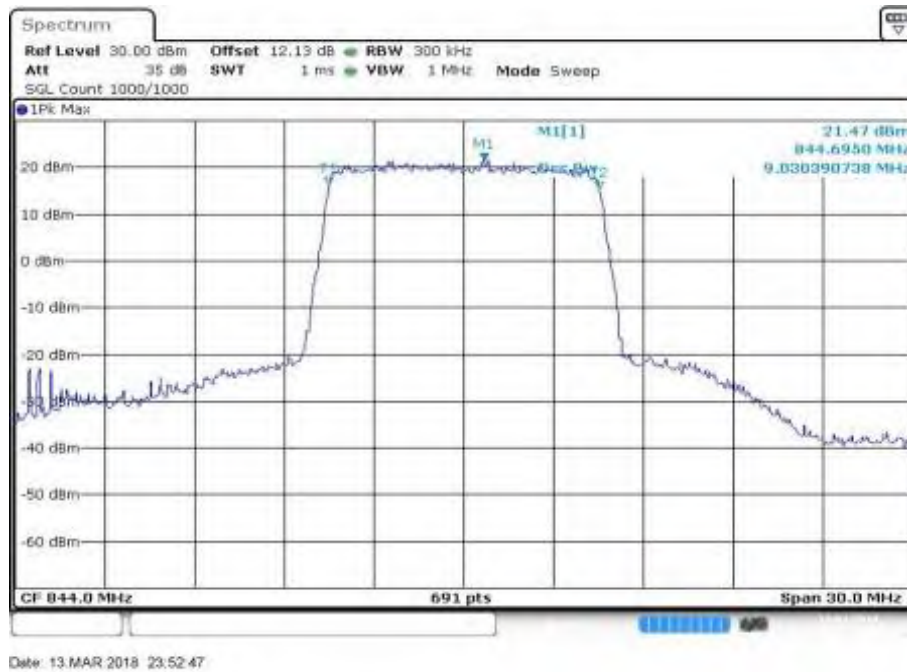


Fig.4

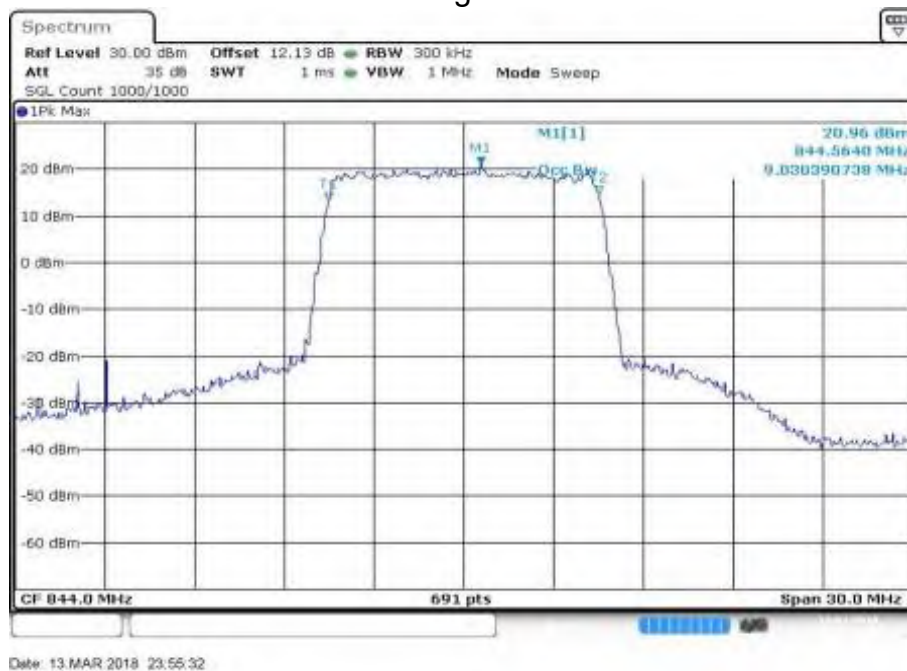


Fig.8

3 Emission Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	824.7	20407	1.4	6	0	1.240	Fig.4	1.246	Fig.8

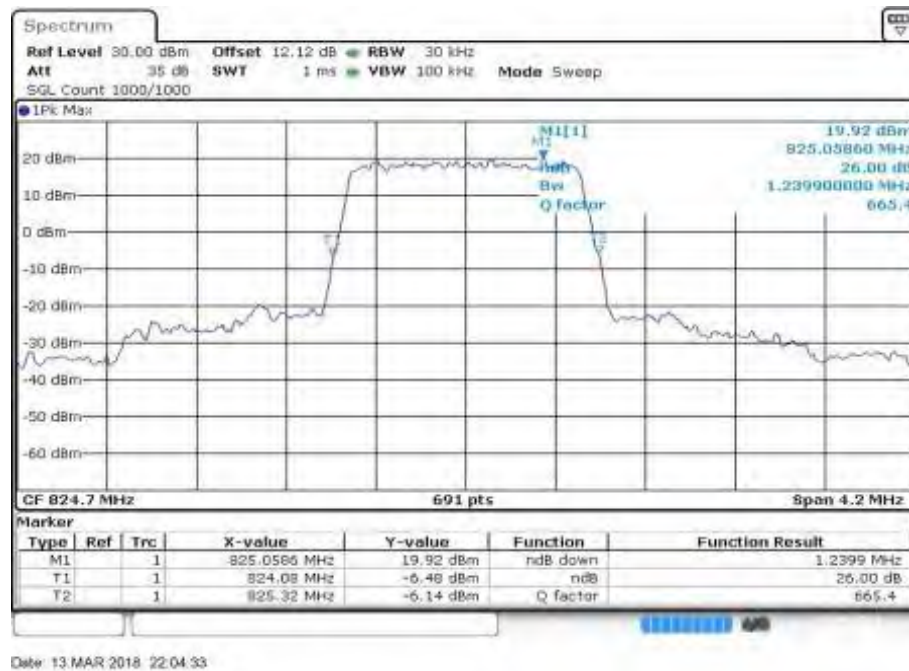


Fig.4

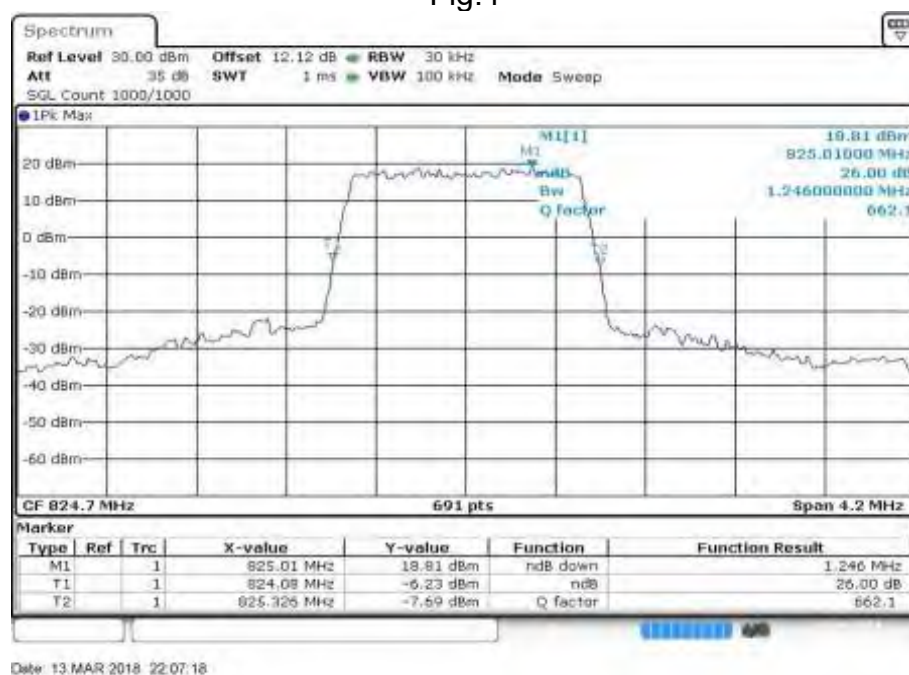


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	836.5	20525	1.4	6	0	1.234	Fig.4	1.240	Fig.8

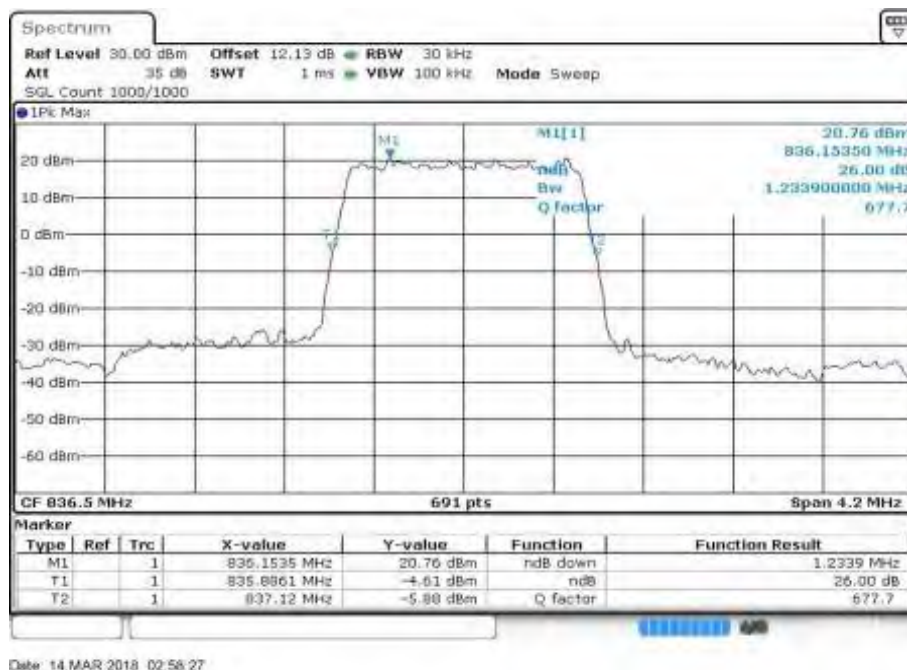


Fig.4

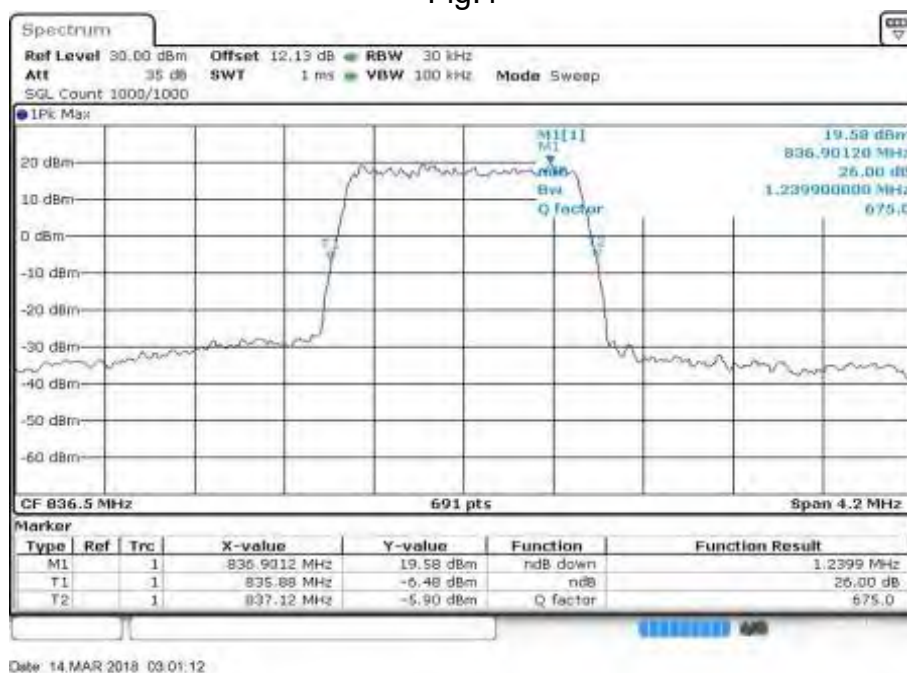


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	848.3	20643	1.4	6	0	1.234	Fig.4	1.240	Fig.8

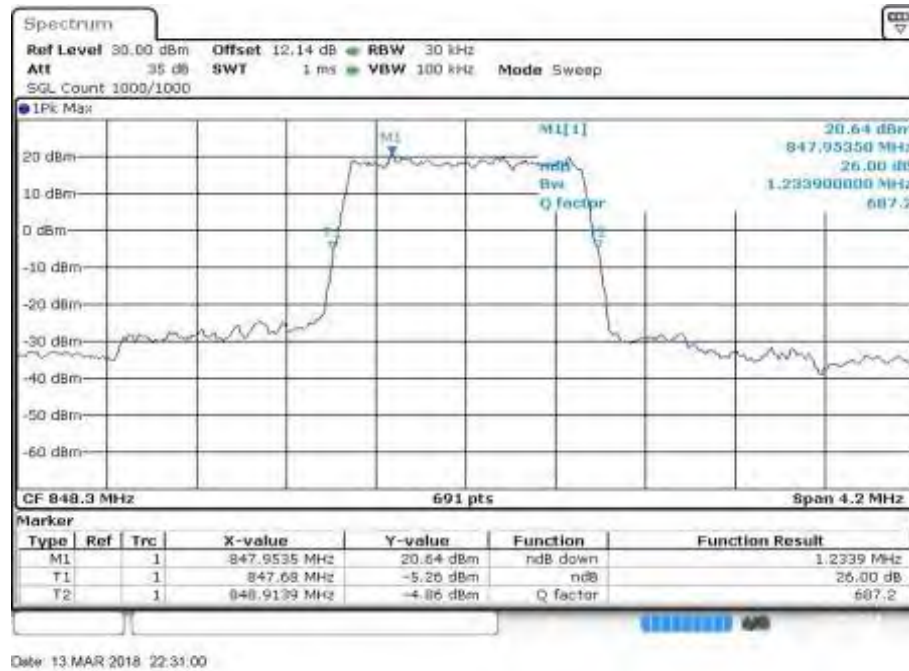


Fig.4

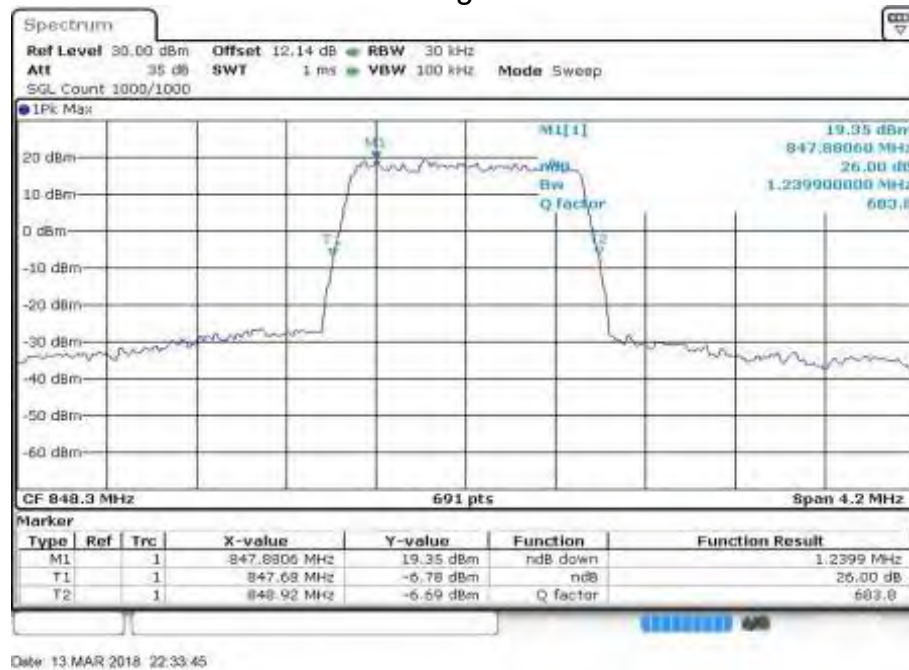


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	825.5	20415	3	15	0	2.448	Fig.4	2.448	Fig.8

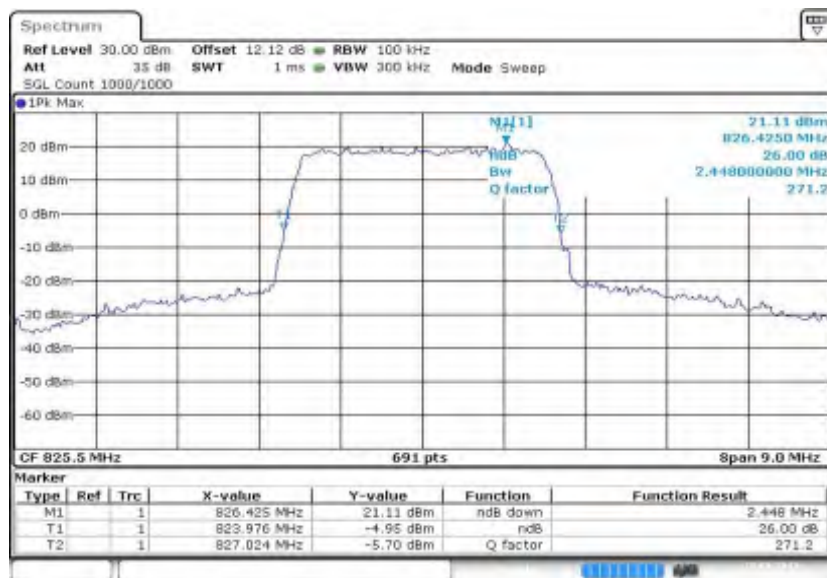


Fig.4

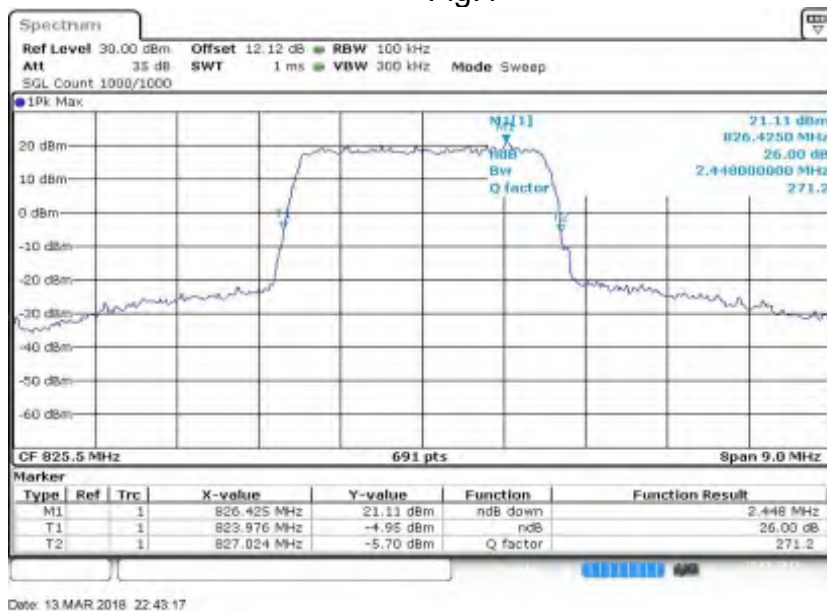


Fig.8

Spectrum

Ref Level 30.00 dBm Offset 12.13 dB RBW 100 kHz
Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000

1Pk Max

20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm

CF 836.5 MHz 691 pts Span 9.0 MHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1		835.875 MHz	20.94 dBm	ndB down	2.061 MHz
T1	1		834.976 MHz	-4.87 dBm	ndB	26.00 dB
T2	1		838.037 MHz	-5.84 dBm	Q factor	273.1

Spectrum

Ref Level 30.00 dBm Offset 12.13 dB RBW 100 kHz
 Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep
 SGL Count 1000/1000

1Pk Max

20 dBm
 10 dBm
 0 dBm
 -10 dBm
 -20 dBm
 -30 dBm
 -40 dBm
 -50 dBm
 -60 dBm

CF 836.5 MHz 691 pts Span 9.0 MHz

20.94 dBm
 835.8750 MHz
 26.00 dB
 2.061000000 MHz
 273.1

M1[1]
 n dB
 Bw
 Q factor

Marker	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1		835.875 MHz	20.94 dBm	n dB down	2.061 MHz
T1	1		834.976 MHz	-4.87 dBm	n dB	26.00 dB
T2	1		838.037 MHz	-5.64 dBm	Q factor	273.1

The State Radio_monitoring_center Testing Center (SRTC)
Tel: 86-10-5799 6183
Fax:86-10-57996388

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	847.5	20635	3	15	0	2.048	Fig.4	2.048	Fig.8

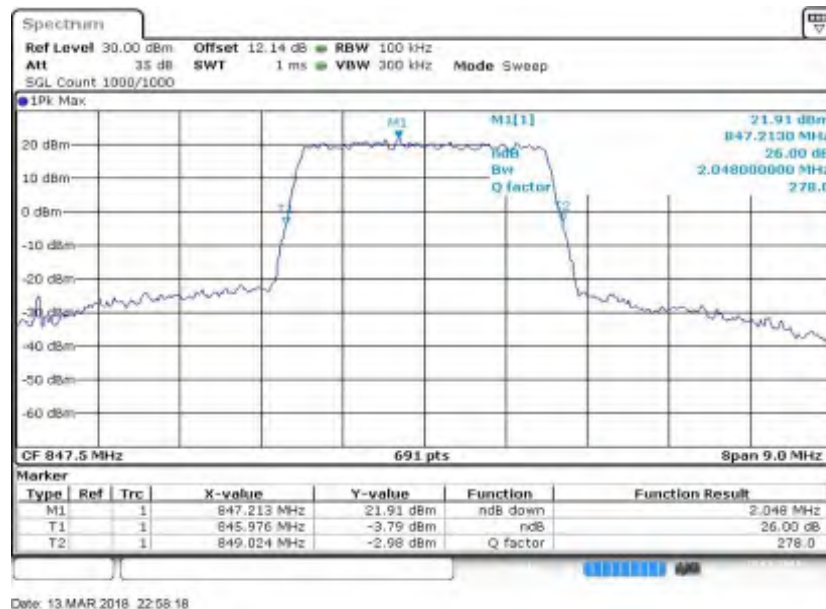


Fig.4

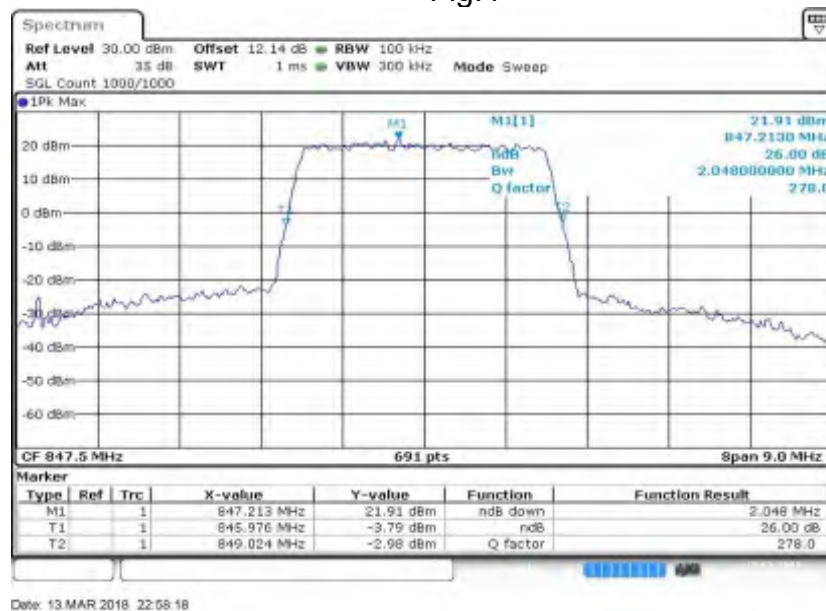


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	826.5	20425	5	25	0	4.993	Fig.4	4.928	Fig.8

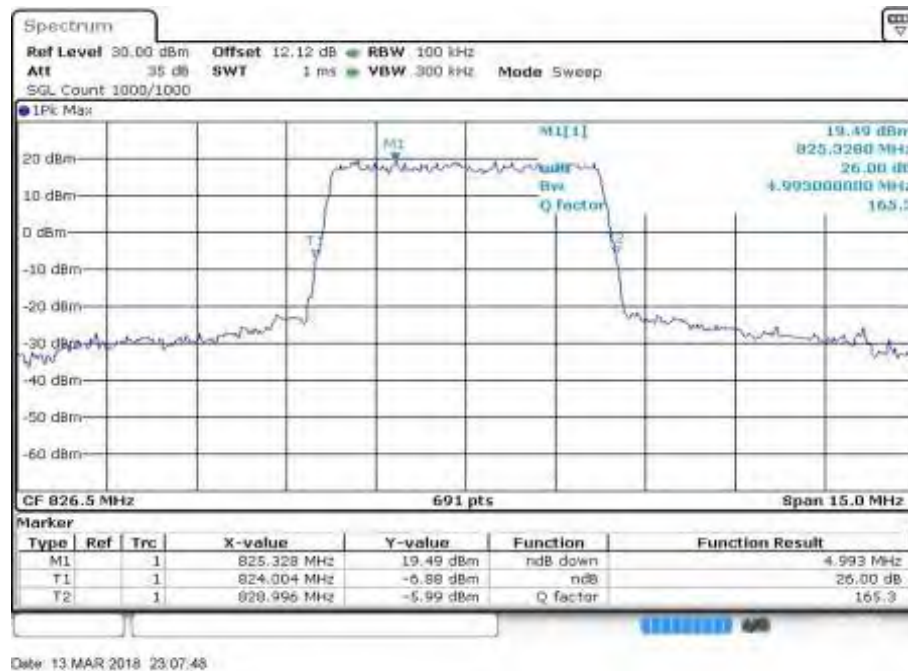


Fig.4

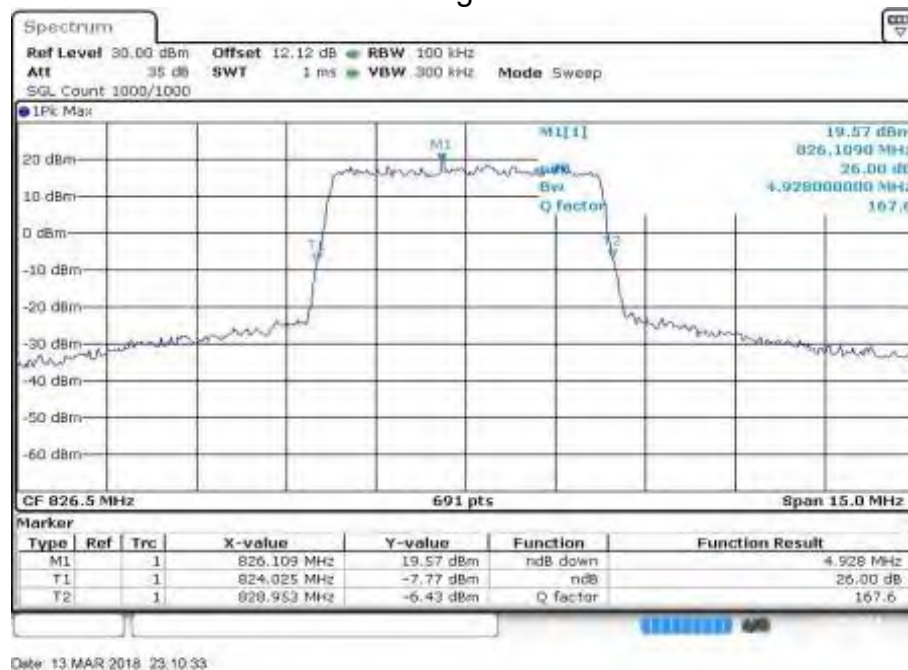


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	836.5	20525	5	25	0	4.971	Fig.4	4.971	Fig.8

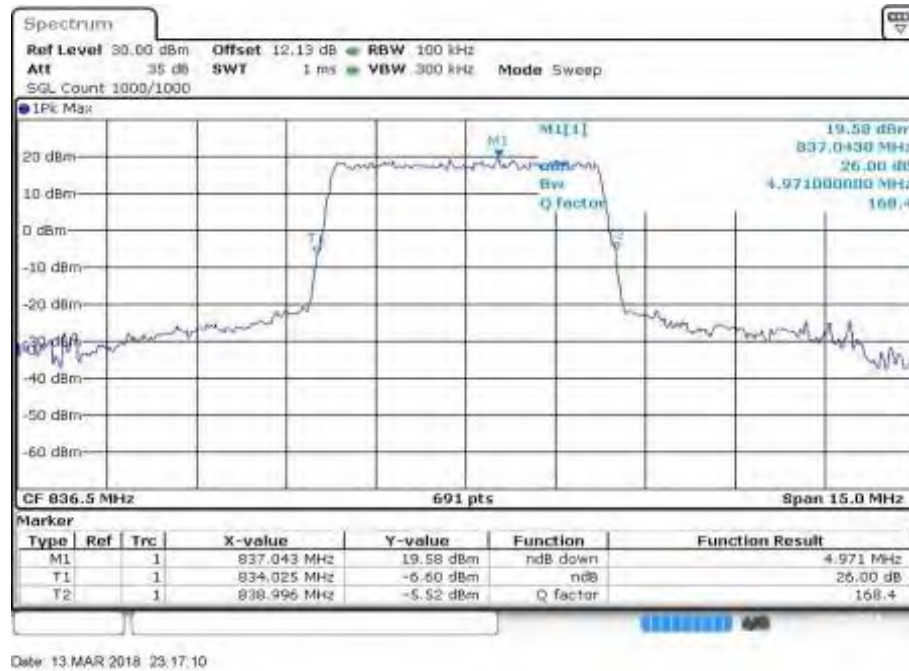


Fig.4

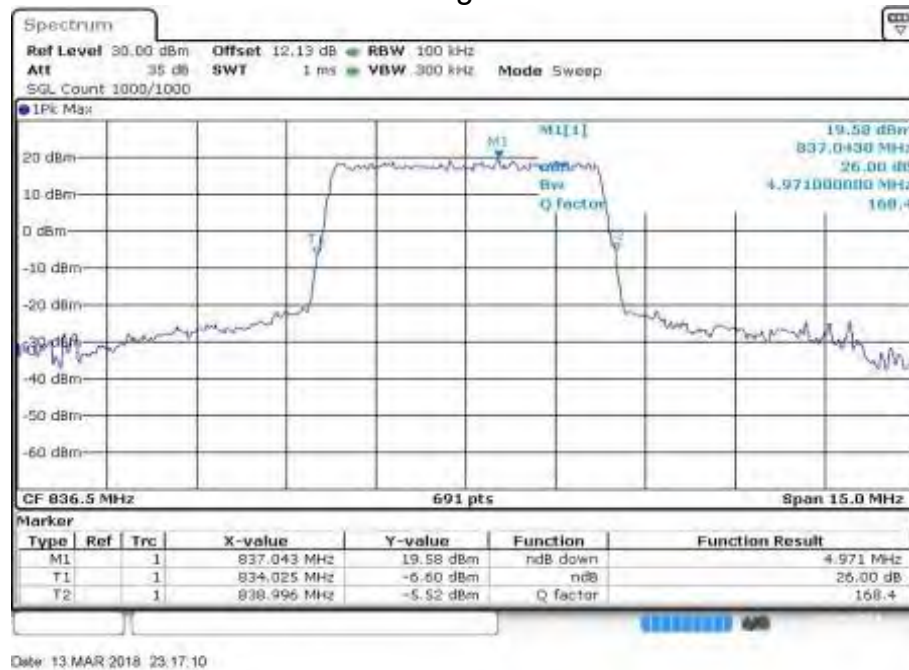


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	846.5	20625	5	25	0	4.949	Fig.4	4.993	Fig.8

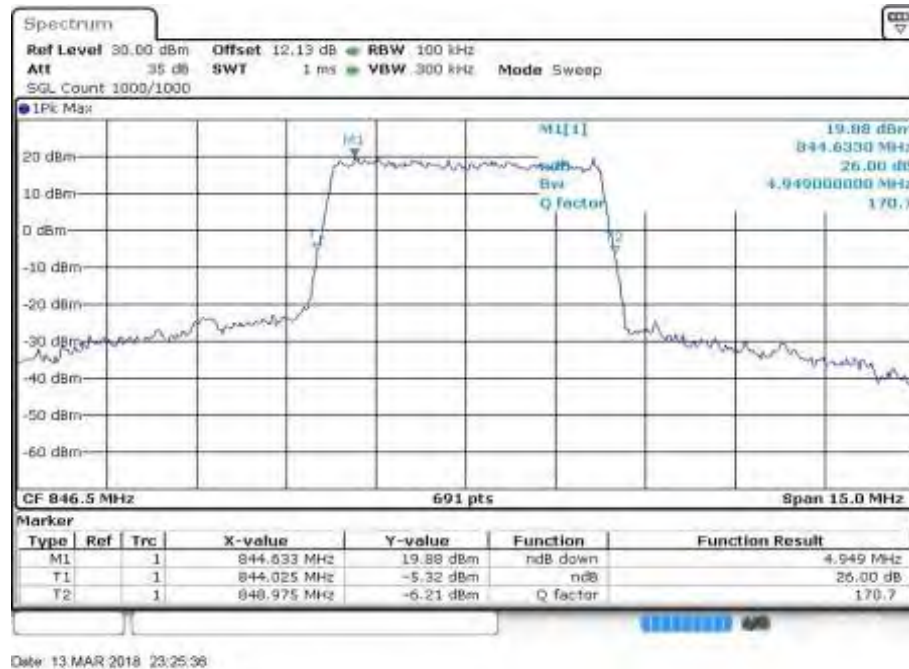


Fig.4

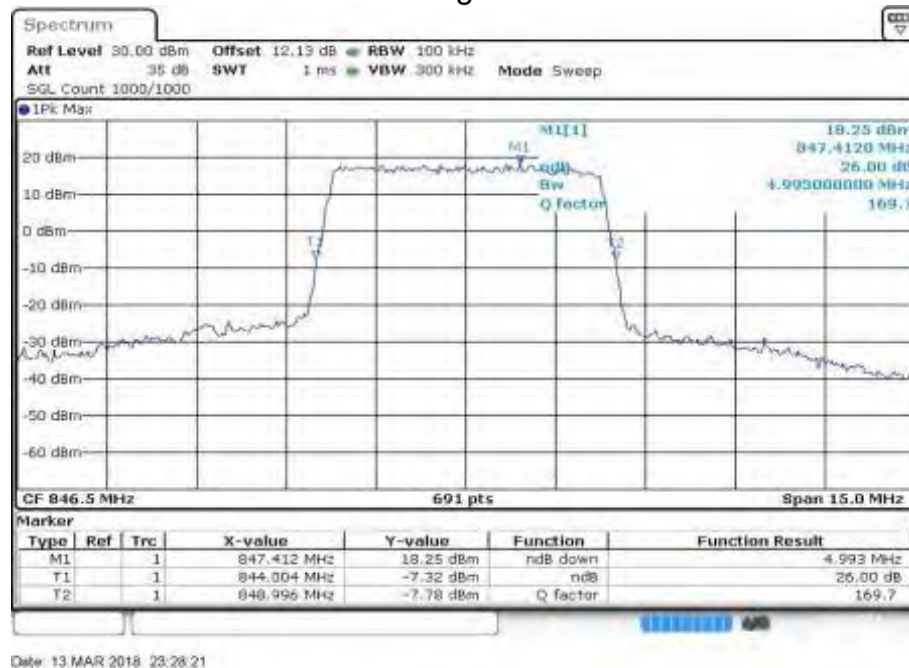


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	829	20450	10	50	0	9.986	Fig.4	9.899	Fig.8

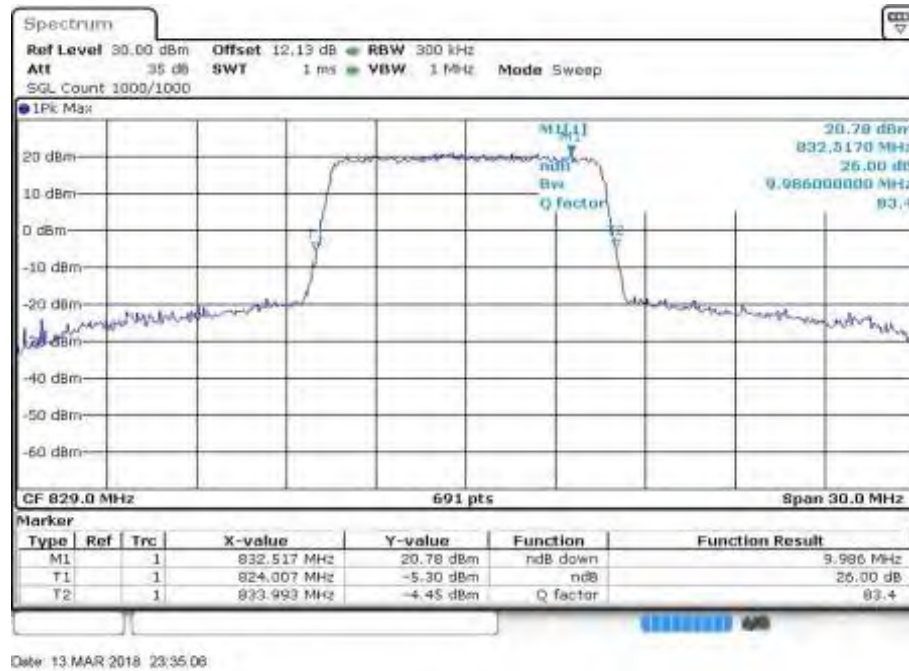


Fig.4

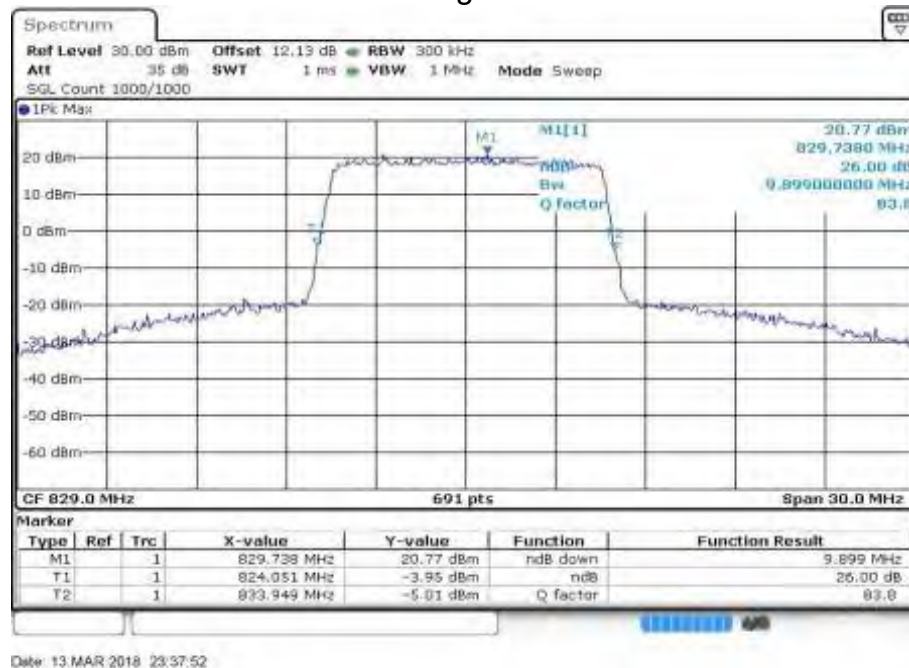


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	836.5	20525	10	50	0	9.986	Fig.4	9.942	Fig.8

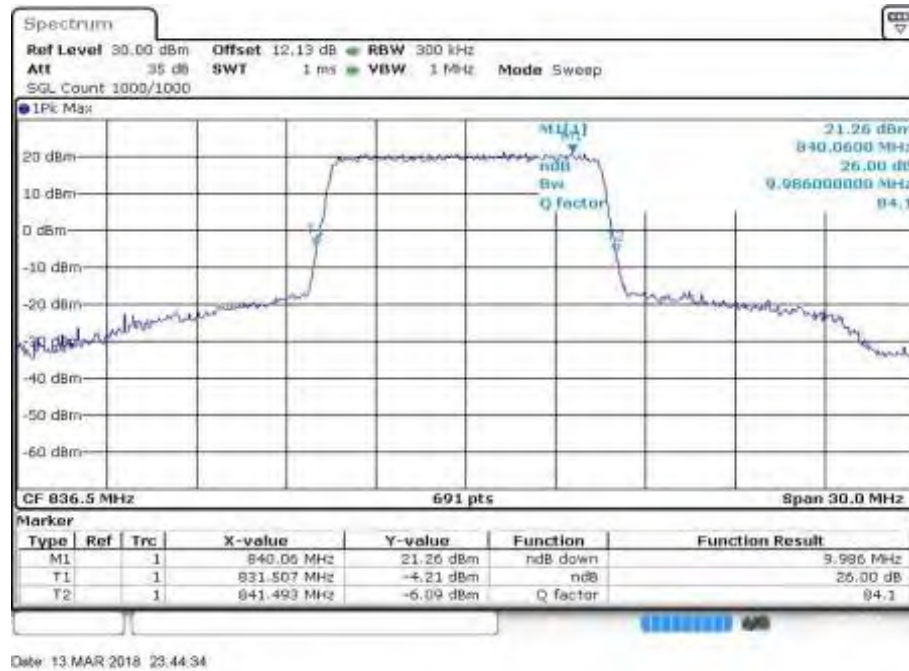


Fig.4

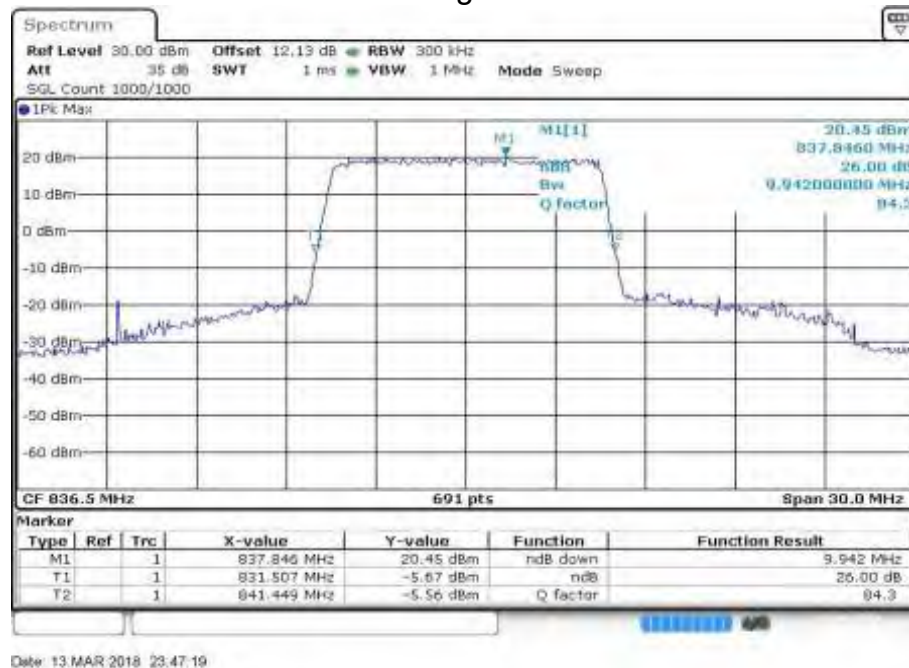


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
5	844	20600	10	50	0	9.986	Fig.4	9.942	Fig.8

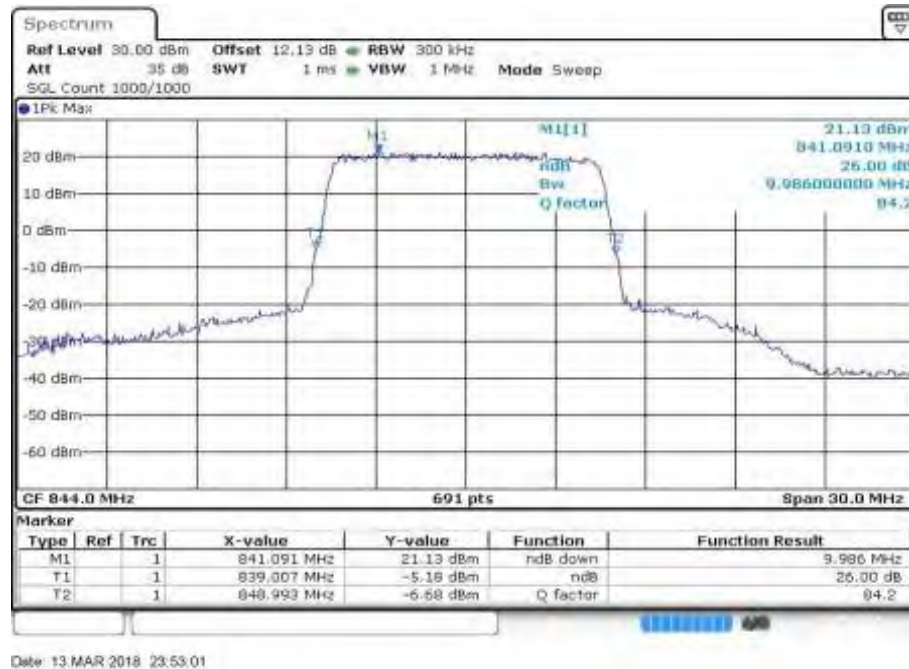


Fig.4

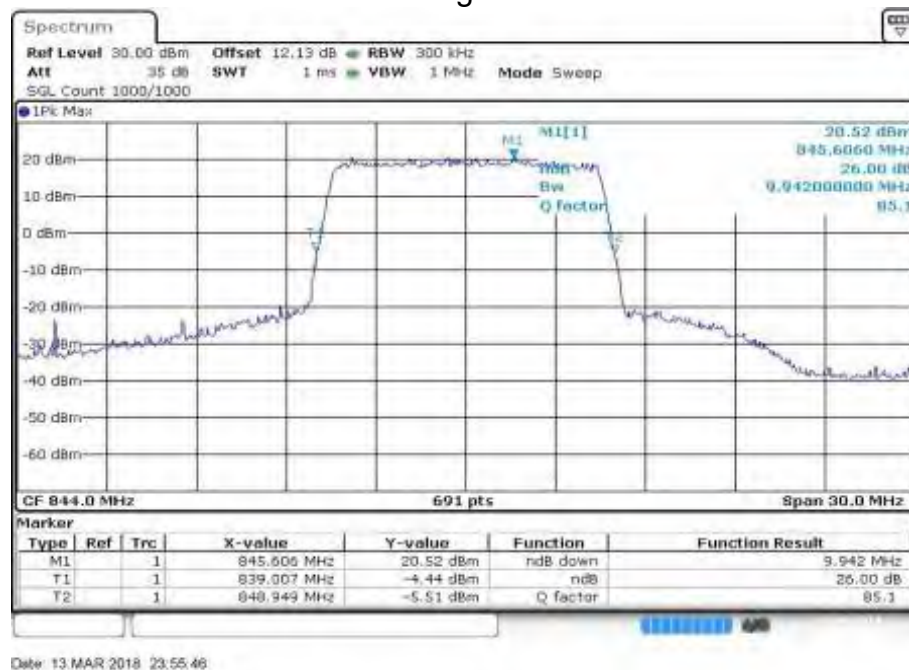
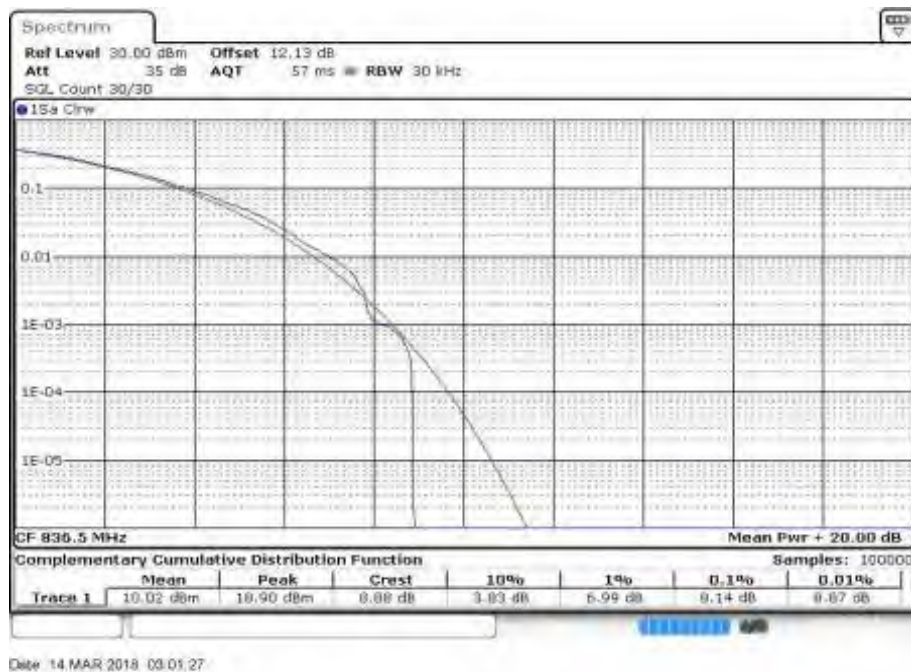


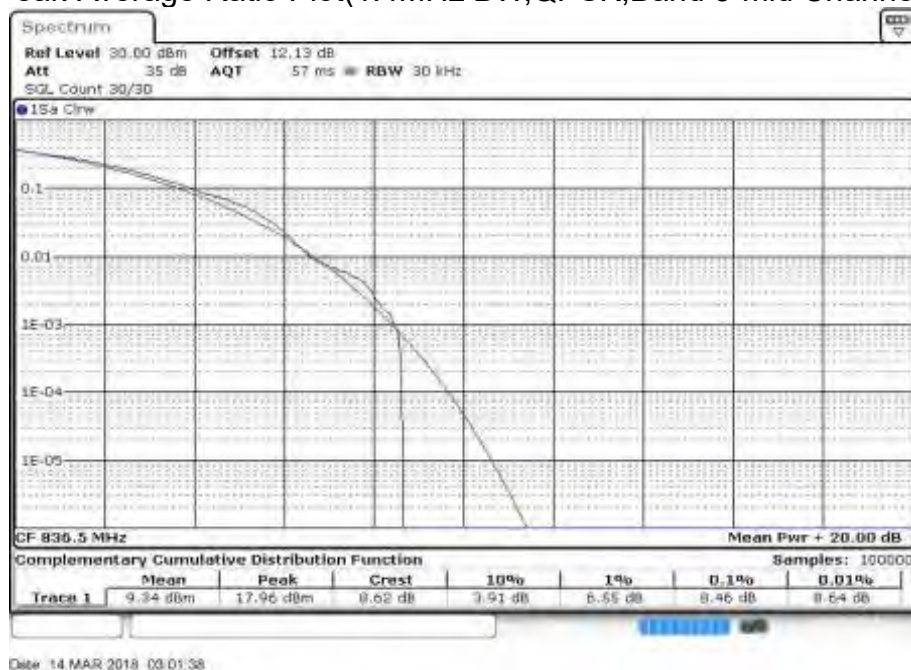
Fig.8

4 Peak-Average Ratio

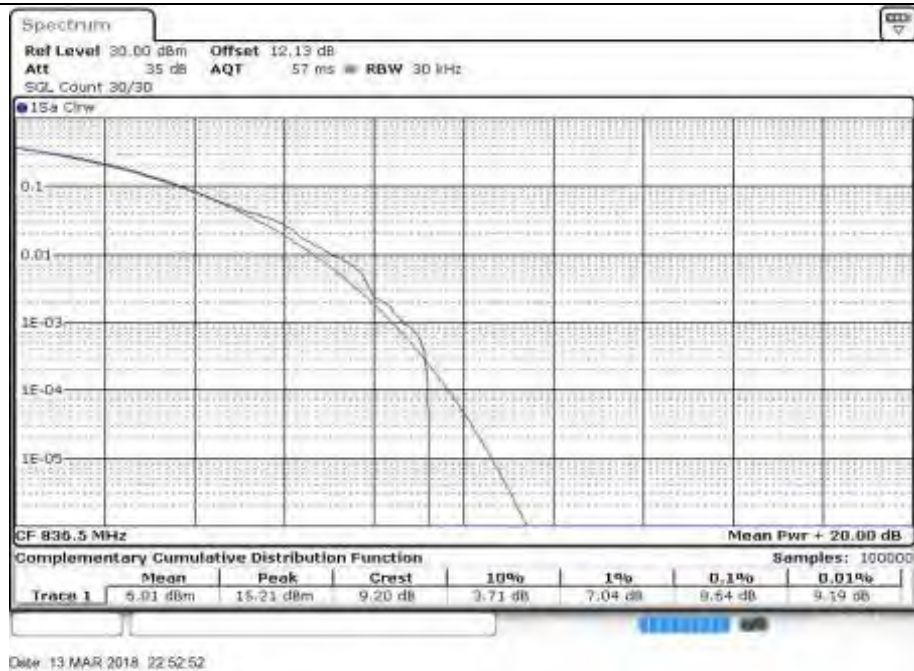
Test result:



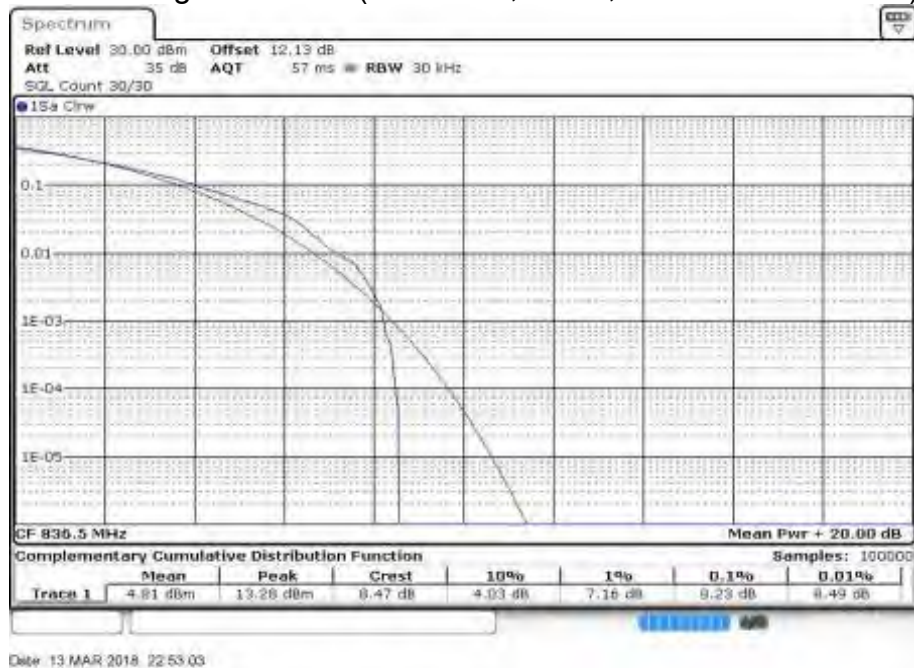
Peak-Average Ratio Plot(1.4MHz BW,QPSK,Band 5-mid Channel)



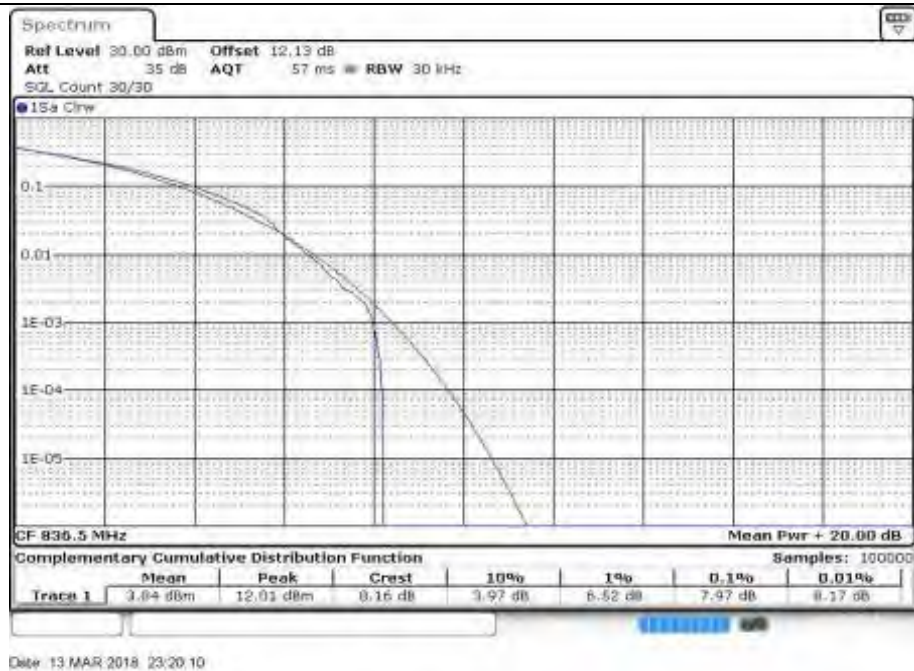
Peak-Average Ratio Plot(1.4MHz BW,16QAM,Band 5-mid Channel)



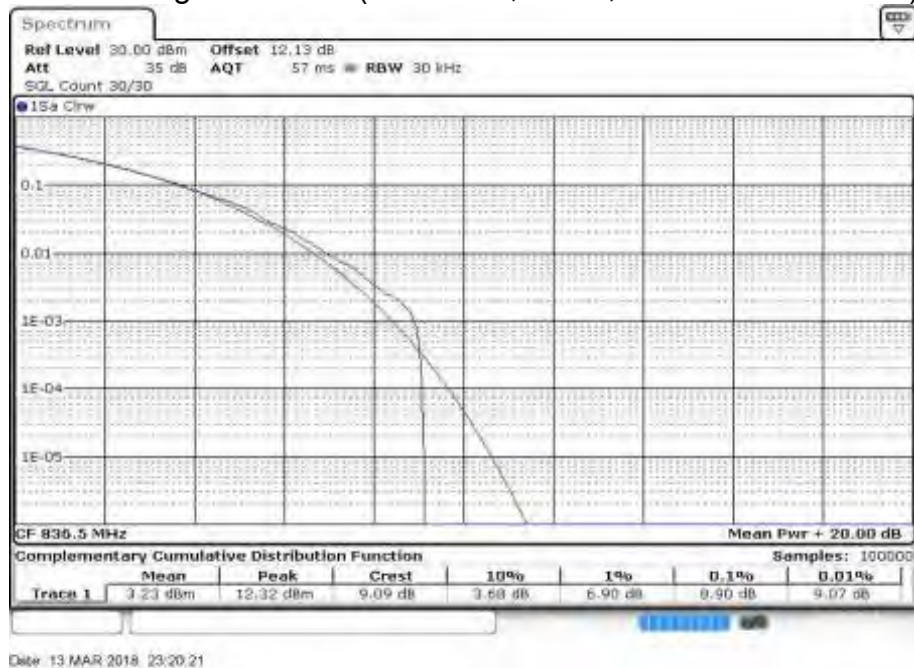
Peak-Average Ratio Plot(3MHz BW,QPSK,Band 5-mid Channel)



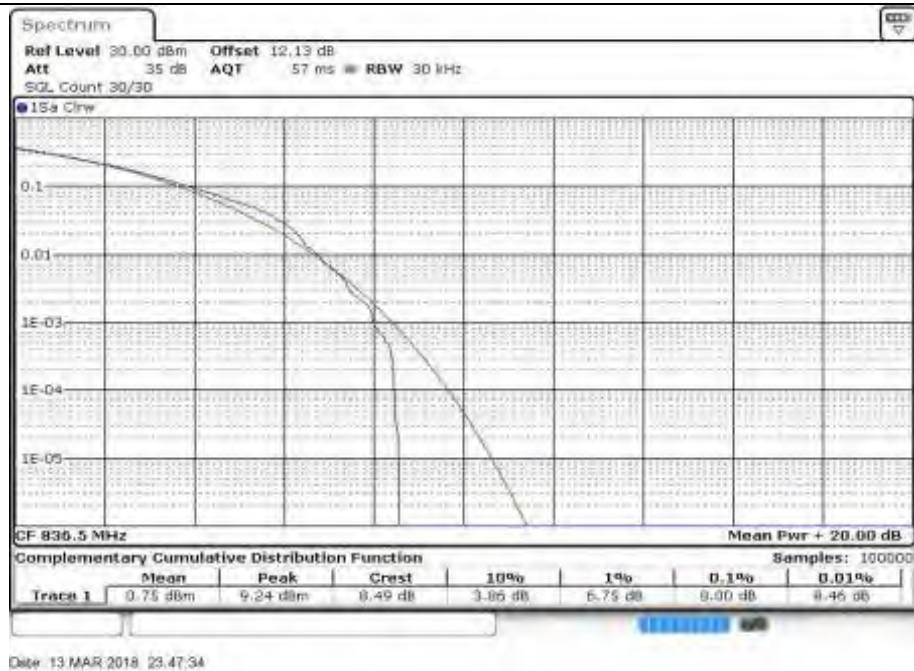
Peak-Average Ratio Plot(3MHz BW,16QAM,Band 5-mid Channel)



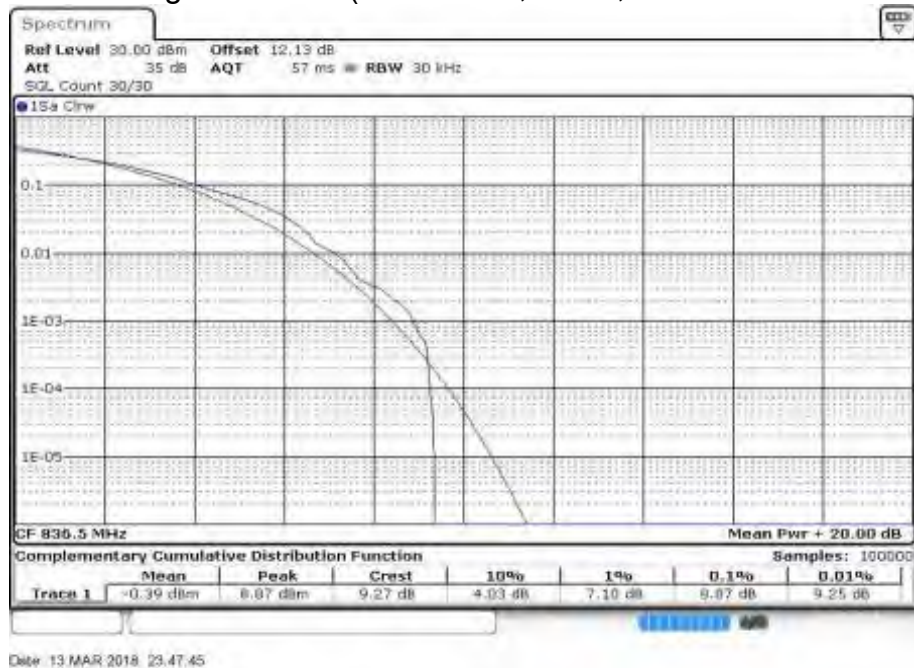
Peak-Average Ratio Plot(5MHz BW,QPSK,Band 5-mid Channel)



Peak-Average Ratio Plot(5MHz BW,16QAM,Band 5-mid Channel)



Peak-Average Ratio Plot(10MHz BW,QPSK,Band 5-mid Channel)



Peak-Average Ratio Plot(10MHz BW,16QAM,Band 5-mid Channel)

5 Spurious Emissions at antenna terminal

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
5	829	20450	10	50	0	Fig.4	Fig.8

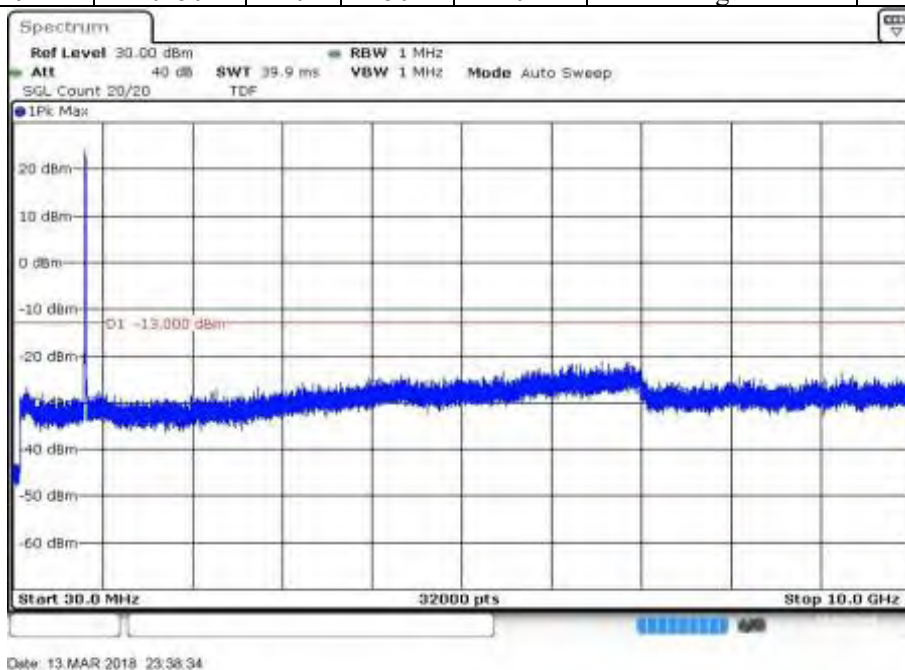


Fig.4

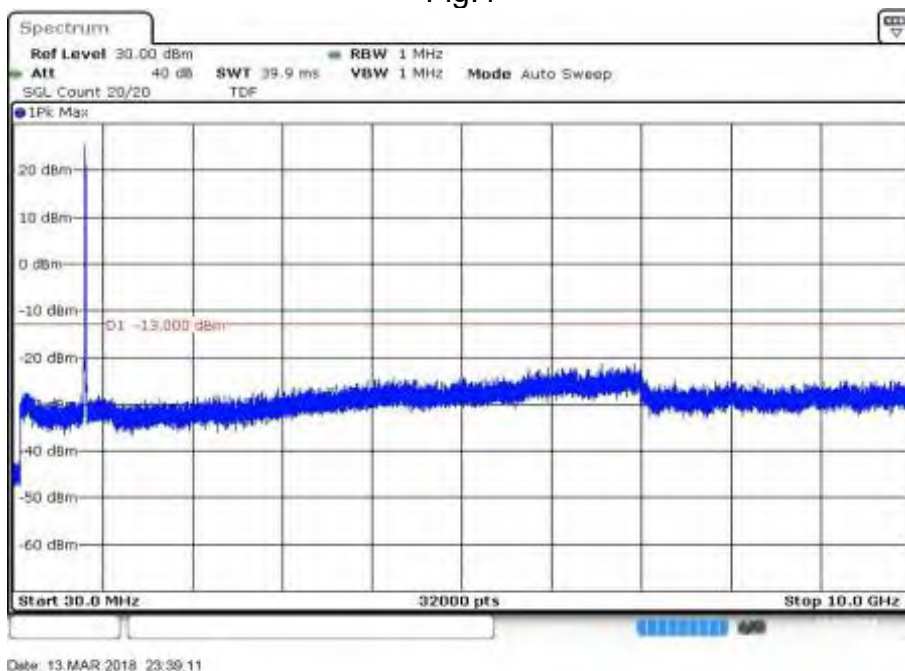


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
5	836.5	20525	10	50	0	Fig.4	Fig.8

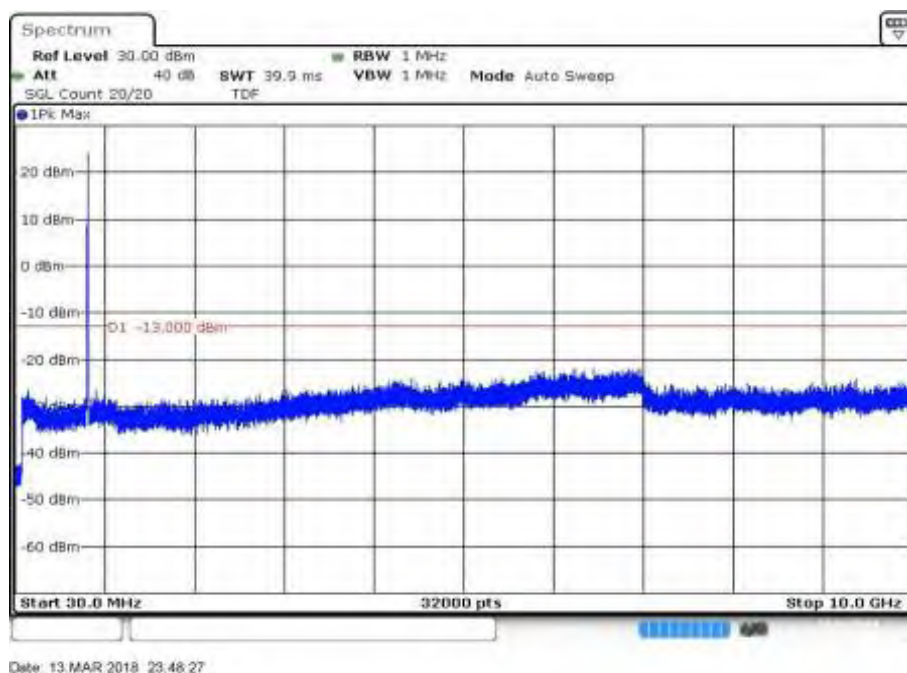


Fig.4

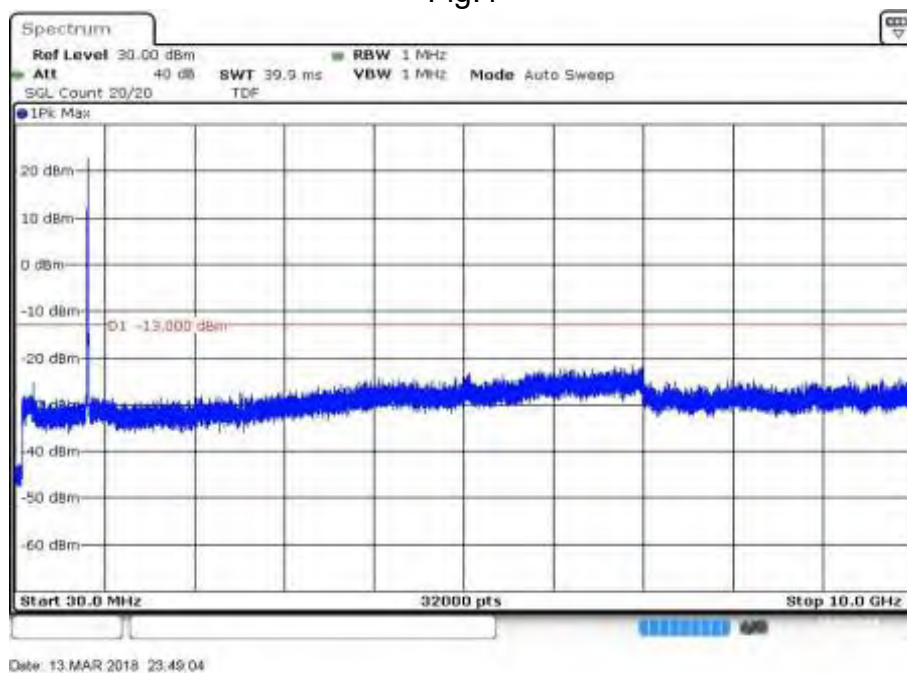


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Conducted Spurious Plot	
						QPSK	16-QAM
5	844	20600	10	50	0	Fig.4	Fig.8

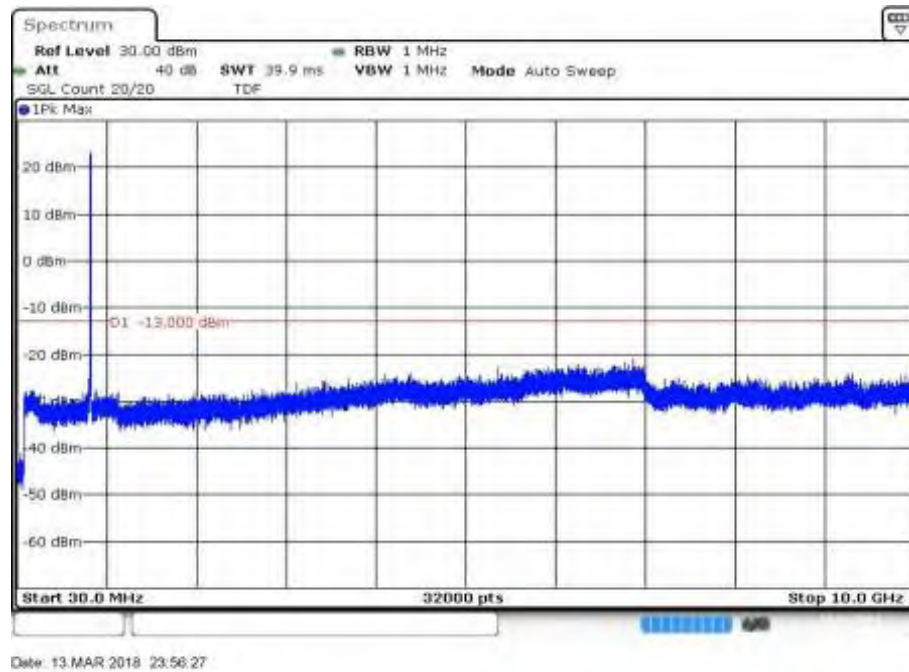


Fig.4

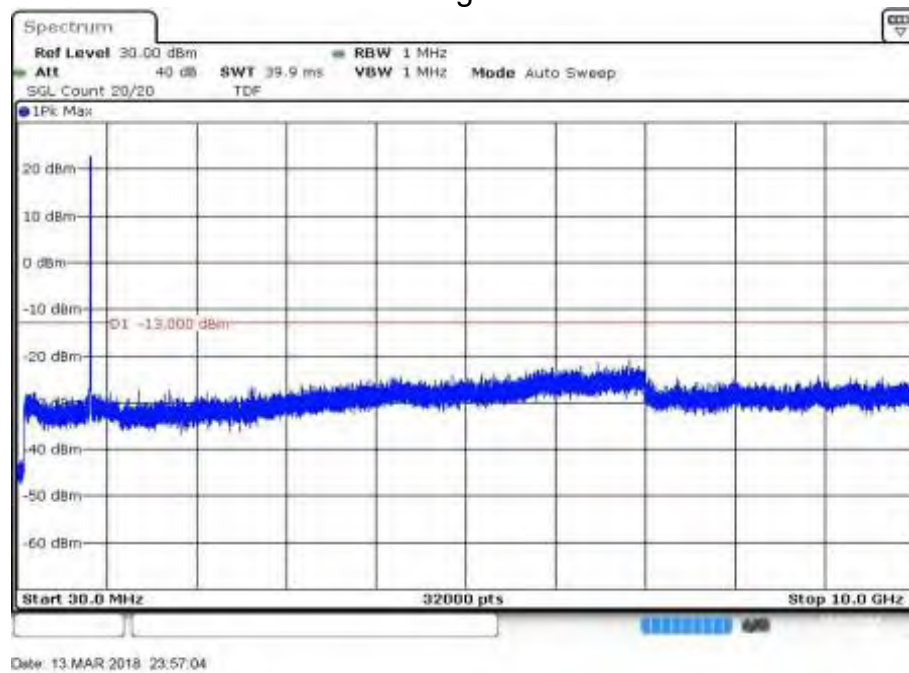


Fig.8

6 Band Edges Compliance

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	824.7	20407	1.4	1	0	Fig.1
				6	0	Fig.4



Fig.1

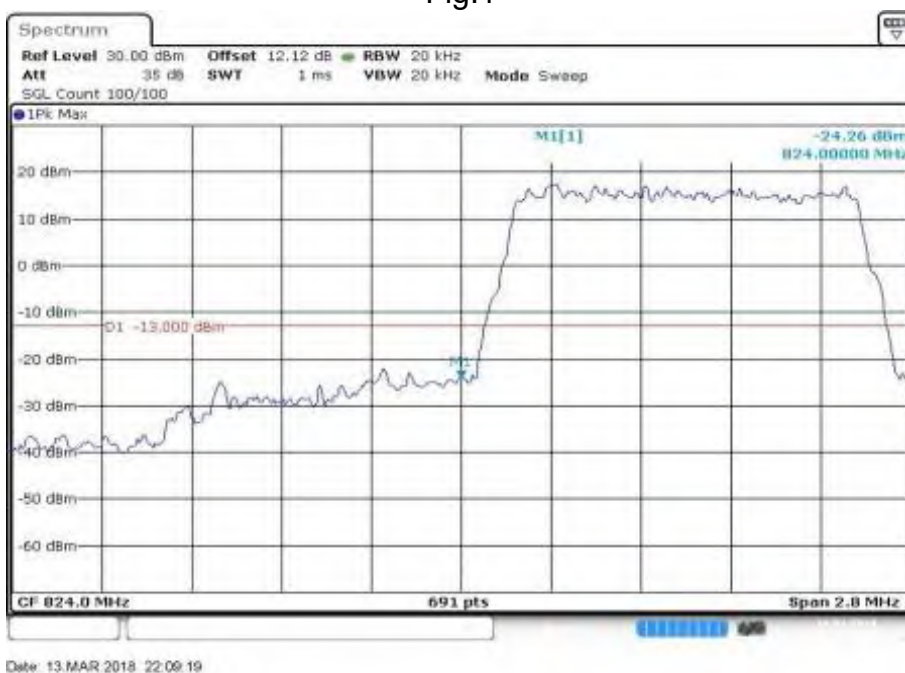


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	848.3	20643	1.4	1	0	Fig.1
				6	0	Fig.4



Fig.1

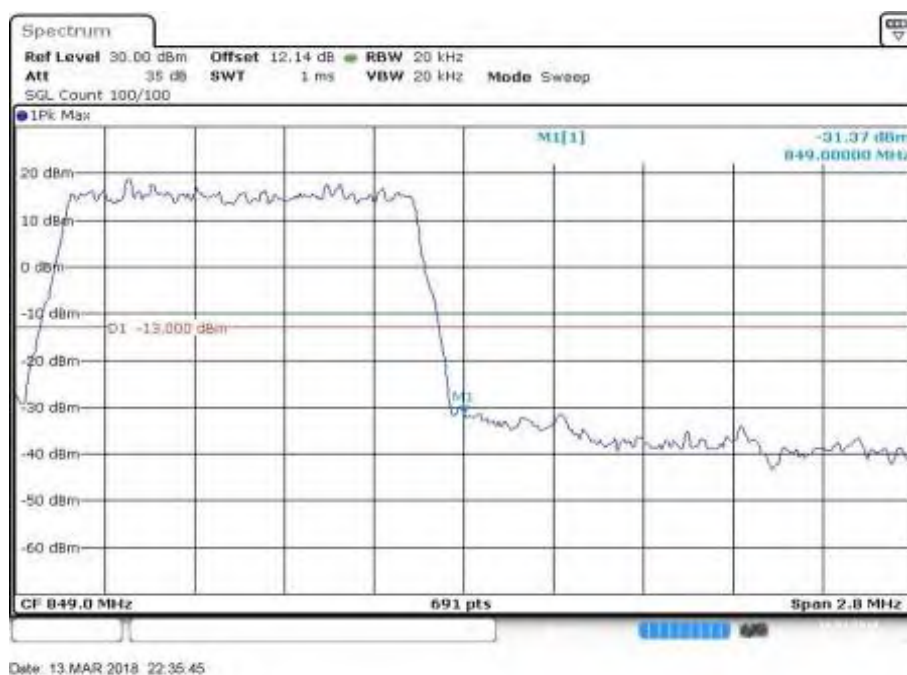
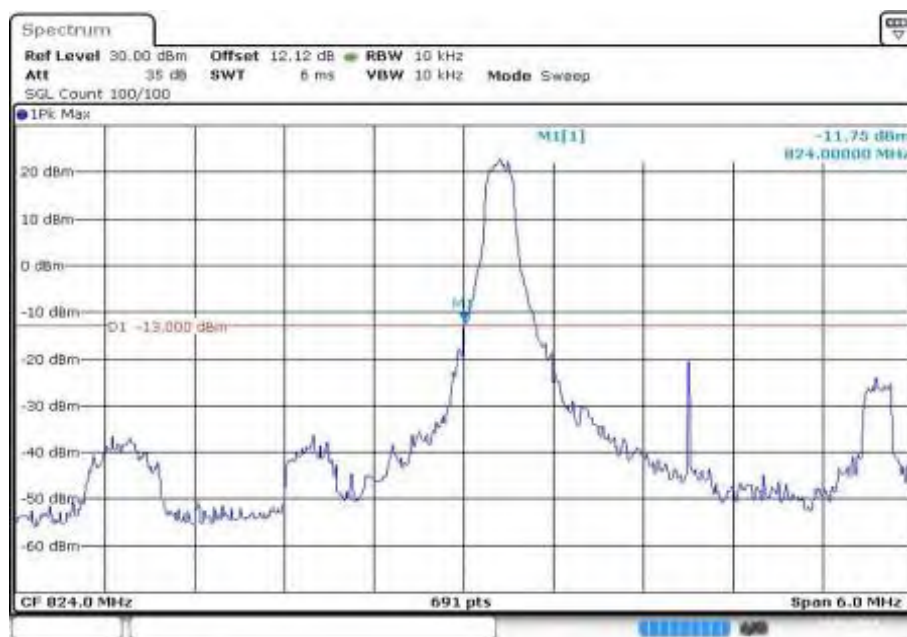


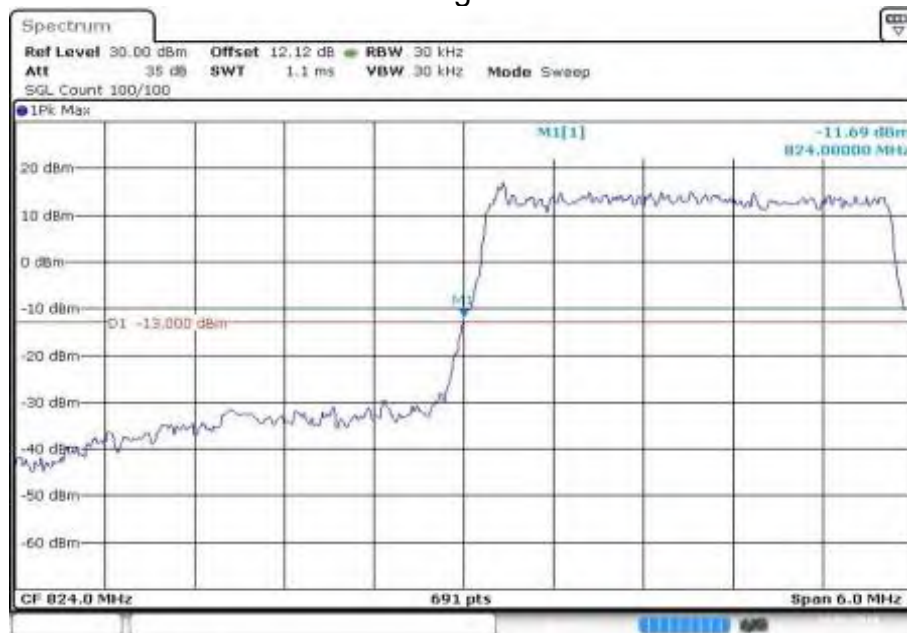
Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	825.5	20415	3	1	0	Fig.1
				6	0	Fig.4



Date: 13.MAR 2018 22:44:49

Fig.1



Date: 13.MAR 2018 22:45:17

Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	847.5	20635	3	1	0	Fig.1
				6	0	Fig.4



Fig.1

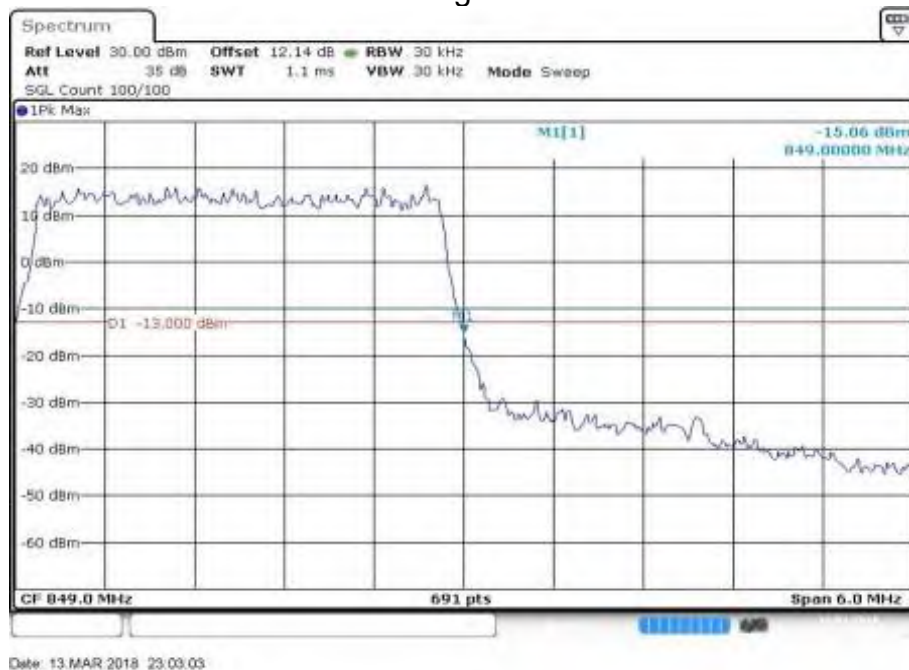
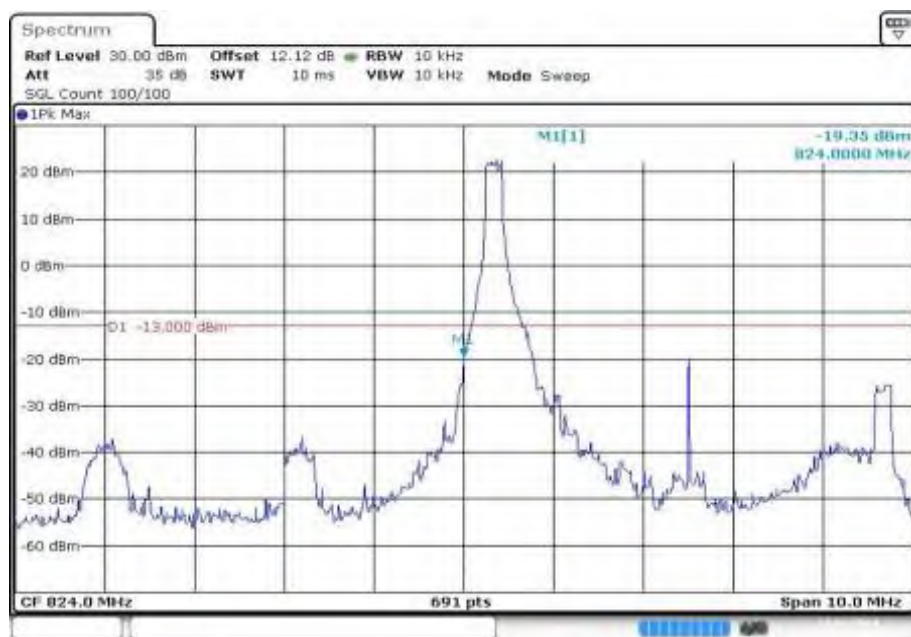


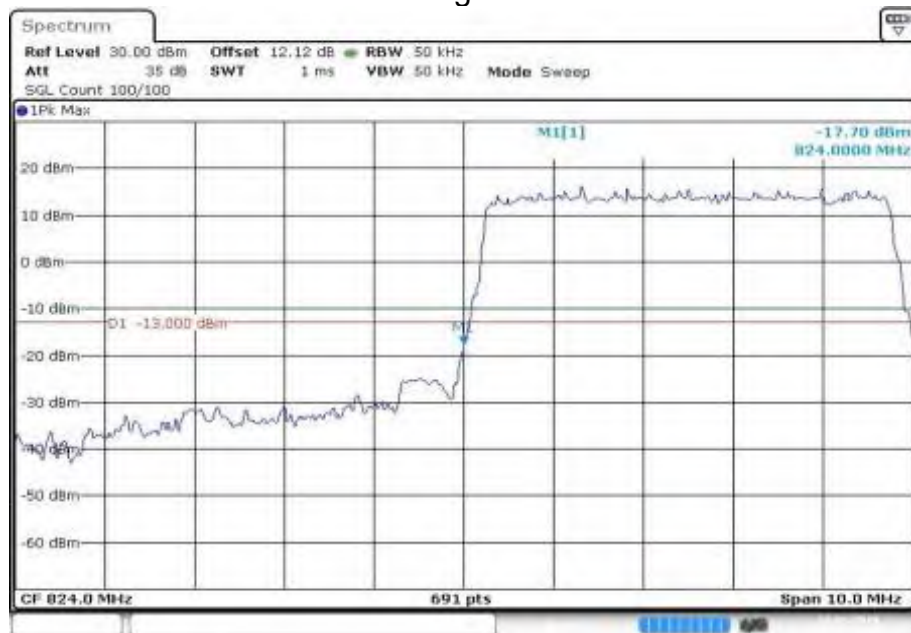
Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	826.5	20425	5	1	0	Fig.1
				25	0	Fig.4



Date: 13.MAR 2018 23:12:06

Fig.1



Date: 13.MAR 2018 23:12:34

Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	846.5	20625	5	1	0	Fig.1
				25	0	Fig.4



Fig.1

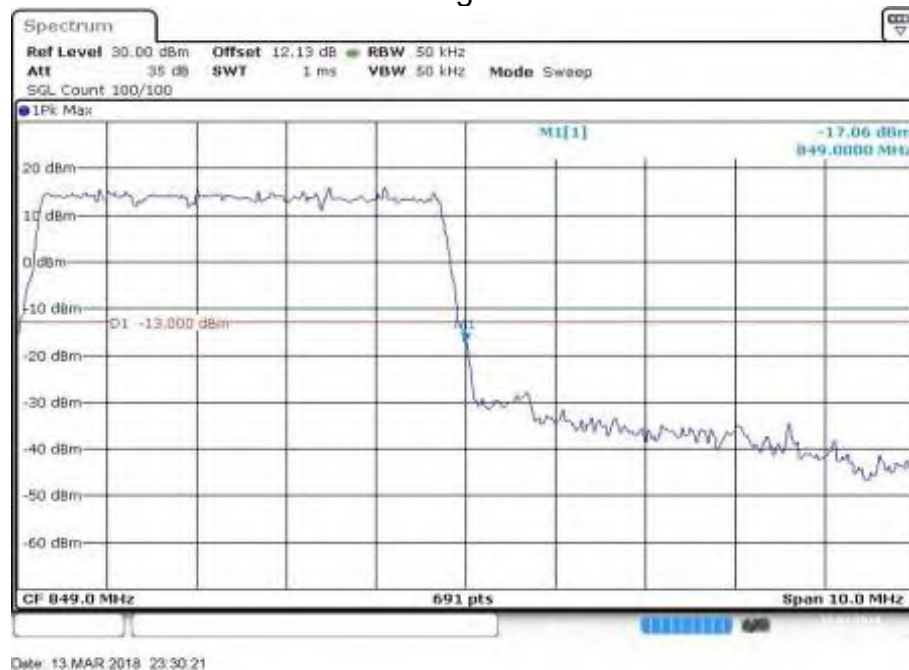


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	829	20450	10	1	0	Fig.1
				50	0	Fig.4

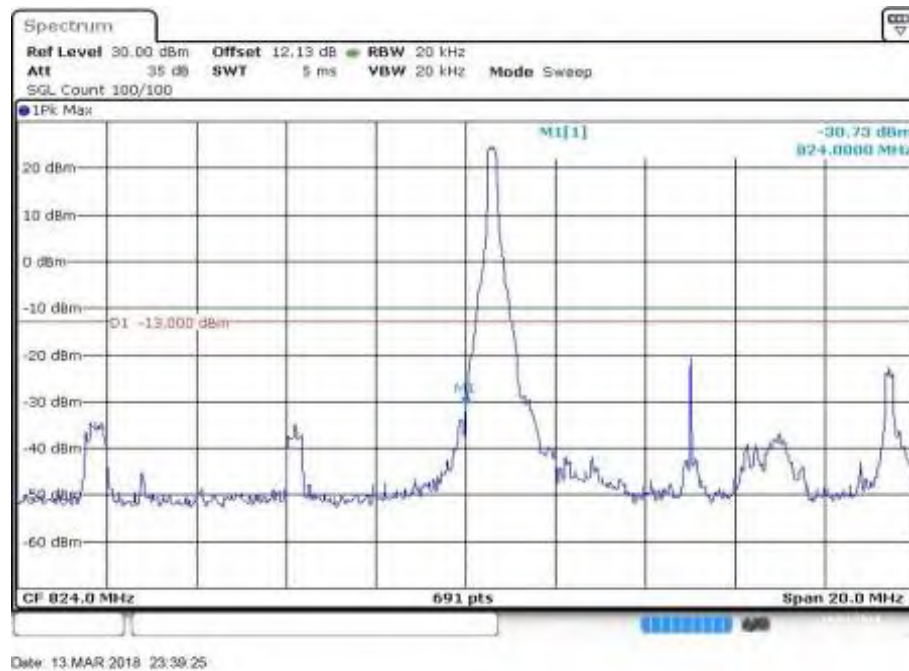


Fig.1

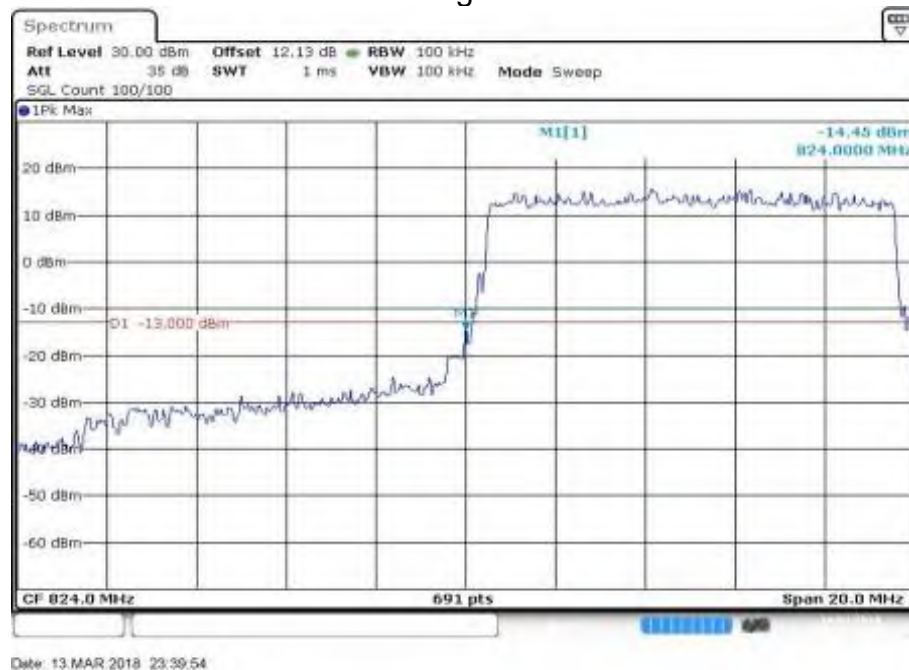


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	844	20600	10	1	0	Fig.1
				50	0	Fig.4

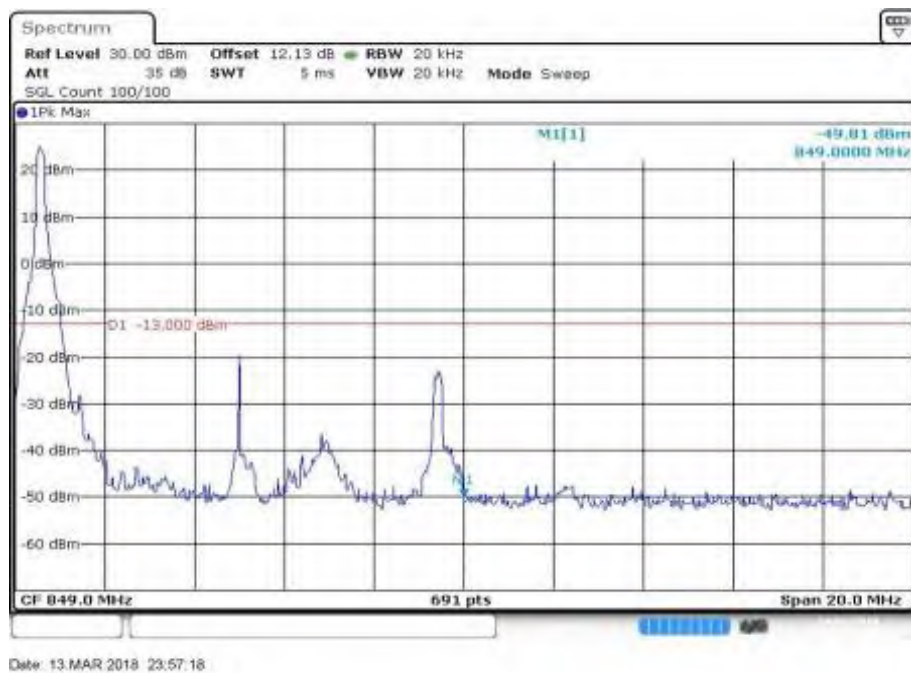


Fig.1



Fig.4

7 Frequency Stability

Test result:

Band	BW	Test Result (ppm)@NV		Test Result (ppm)@NT	
		Temperature(°C)		Voltage	
5	1.4	-30	-0.015	LV	0.012
		-20	0.014		
		-10	-0.013		
		0	-0.007		
		10	-0.021		
		20	-0.015	HV	-0.004
		30	0.008		
		40	-0.031		
		50	-0.013		
		50	-0.013		
	3	-30	-0.001	LV	0.001
		-20	-0.003		
		-10	-0.003		
		0	-0.007		
		10	-0.007		
		20	-0.005	HV	-0.005
		30	0.001		
		40	-0.001		
		50	0.004		
		50	0.004		
	5	-30	-0.008	LV	-0.004
		-20	-0.019		
		-10	-0.001		
		0	-0.009		
		10	-0.002		
		20	-0.006	HV	-0.003
		30	-0.014		
		40	-0.002		
		50	-0.003		
		50	-0.003		
	10	-30	-0.001	LV	-0.006
		-20	-0.008		
		-10	-0.008		
		0	-0.004		
		10	-0.006		



No.: SRTC2018-9004(F)-18030601(C)
FCC ID: 2AOYWH1A1000

		20	-0.009	HV	0.001
		30	-0.006		
		40	-0.009		
		50	-0.005		

LTE Band 7

1 RF Power Output

Test result:

Antenna Gain: 1.36dBi

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	2502.5	20775	5	1	0	22.9	24.3
				1	24	22.8	24.2
				12	6	21.9	23.3
				25	0	21.8	23.2
	2535	21100		1	0	23.1	24.5
				1	24	22.9	24.3
				12	6	22.0	23.4
				25	0	22.1	23.5
	2567.5	21425		1	0	23.0	24.4
				1	24	23.0	24.4
				12	6	22.0	23.4
				25	0	22.1	23.5

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	2502.5	20775	5	1	0	21.9	23.3
				1	24	21.9	23.3
				12	6	20.8	22.2
				25	0	20.9	22.3
	2535	21100		1	0	22.0	23.4
				1	24	21.9	23.3
				12	6	20.9	22.3
				25	0	21.0	22.4
	2567.5	21425		1	0	22.3	23.7
				1	24	22.3	23.7
				12	6	21.1	22.5
				25	0	21.0	22.4



Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	2505	20800	10	1	0	22.8	24.2
				1	49	22.8	24.2
				24	12	22.0	23.4
				50	0	21.9	23.3
	2535	21100		1	0	23.1	24.5
				1	49	23.0	24.4
				24	12	22.0	23.4
				50	0	22.1	23.5
	2565	21400		1	0	23.0	24.4
				1	49	23.0	24.4
				24	12	22.0	23.4
				50	0	22.1	23.5

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	2505	20800	10	1	0	22.5	23.9
				1	49	22.6	24.0
				24	12	21.1	22.5
				50	0	21.1	22.5
	2535	21100		1	0	22.2	23.6
				1	49	22.0	23.4
				24	12	21.1	22.5
				50	0	21.1	22.5
	2565	21400		1	0	22.2	23.6
				1	49	22.1	23.5
				24	12	21.0	22.4
				50	0	21.0	22.4

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	2507.5	20825	15	1	0	23.0	24.4
				1	74	23.0	24.4
				40	18	22.1	23.5
				75	0	22.0	23.4
	2535	21100		1	0	23.2	24.6
				1	74	23.0	24.4
				40	18	22.0	23.4
				75	0	22.1	23.5
	2562.5	21375		1	0	22.9	24.3
				1	74	22.9	24.3
				40	18	22.0	23.4
				75	0	21.9	23.3

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	2507.5	20825	15	1	0	22.6	24.0
				1	74	22.6	24.0
				40	18	21.1	22.5
				75	0	21.1	22.5
	2535	21100		1	0	22.3	23.7
				1	74	22.0	23.4
				40	18	20.9	22.3
				75	0	21.0	22.4
	2562.5	21375		1	0	22.5	23.9
				1	74	22.4	23.8
				40	18	20.9	22.3
				75	0	21.0	22.4



Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	2510	20850	20	1	0	22.9	24.3
				1	99	23.0	24.4
				50	25	21.9	23.3
				100	0	21.9	23.3
	2535	21100		1	0	23.2	24.6
				1	99	23.0	24.4
				50	25	21.9	23.3
				100	0	22.0	23.4
	2560	21350		1	0	22.9	24.3
				1	99	22.9	24.3
				50	25	21.9	23.3
				100	0	22.0	23.4

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	2510	20850	20	1	0	22.4	23.8
				1	99	22.3	23.7
				50	25	20.9	22.3
				100	0	20.9	22.3
	2535	21100		1	0	22.4	23.8
				1	99	22.3	23.7
				50	25	20.9	22.3
				100	0	21.1	22.5
	2560	21350		1	0	22.5	23.9
				1	99	22.5	23.9
				50	25	21.0	22.4
				100	0	20.9	22.3

2 Occupied Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2502.5	20775	5	25	0	4.493	Fig.4	4.515	Fig.8

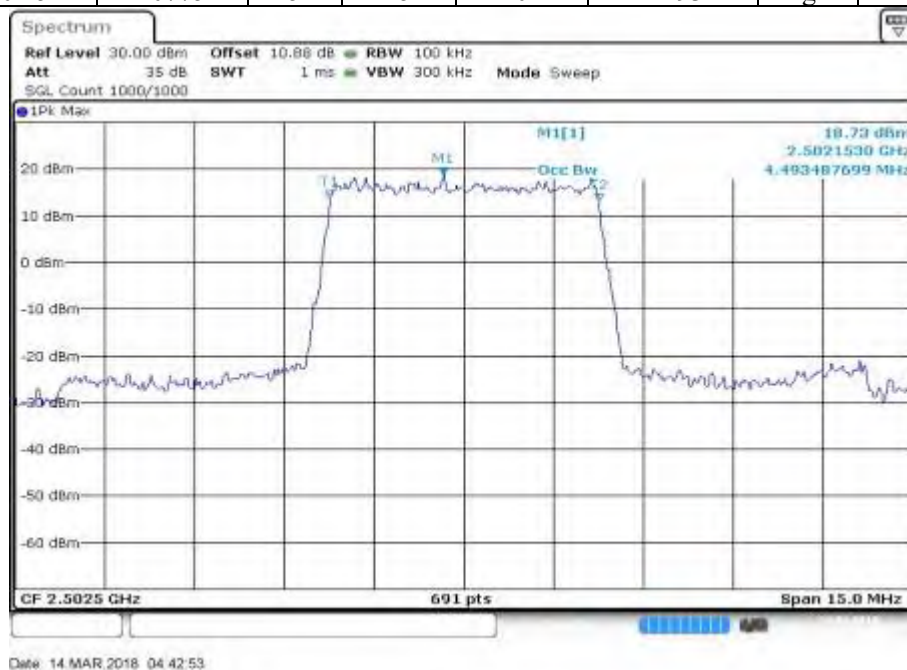


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2535	21100	5	25	0	4.515	Fig.4	4.515	Fig.8

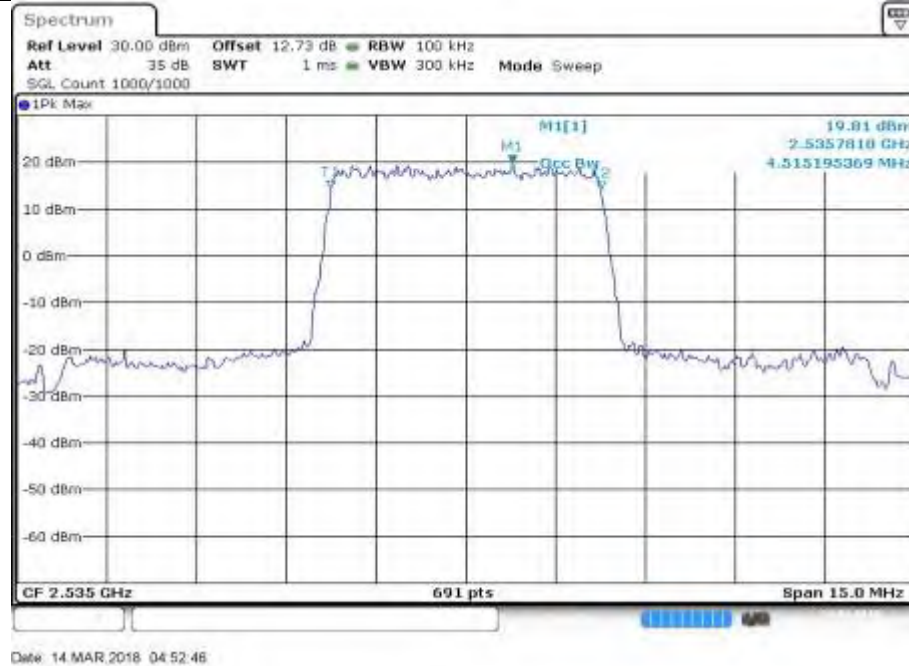


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2567.5	21425	5	25	0	4.515	Fig.4	4.515	Fig.8

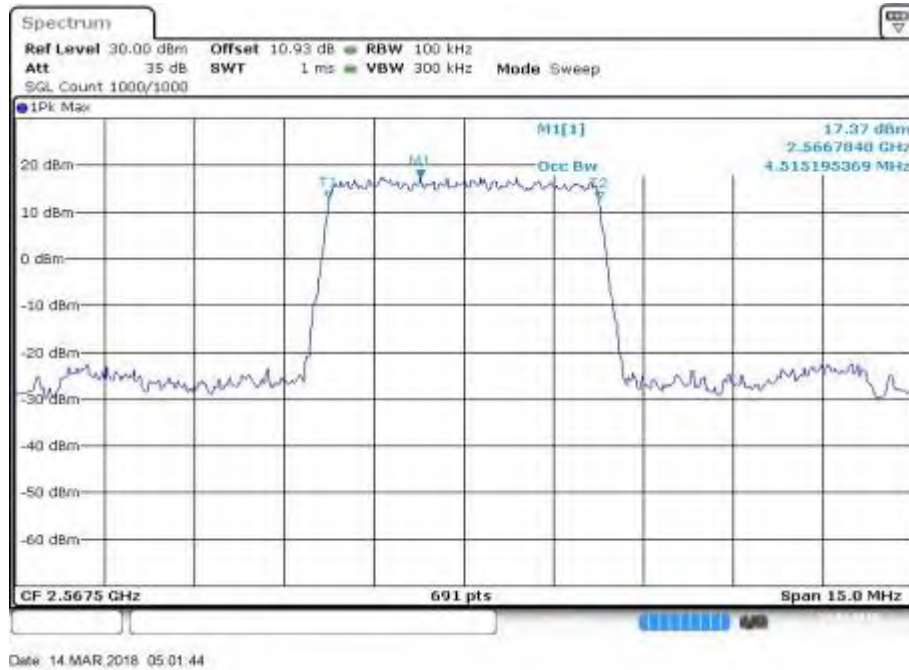


Fig.4

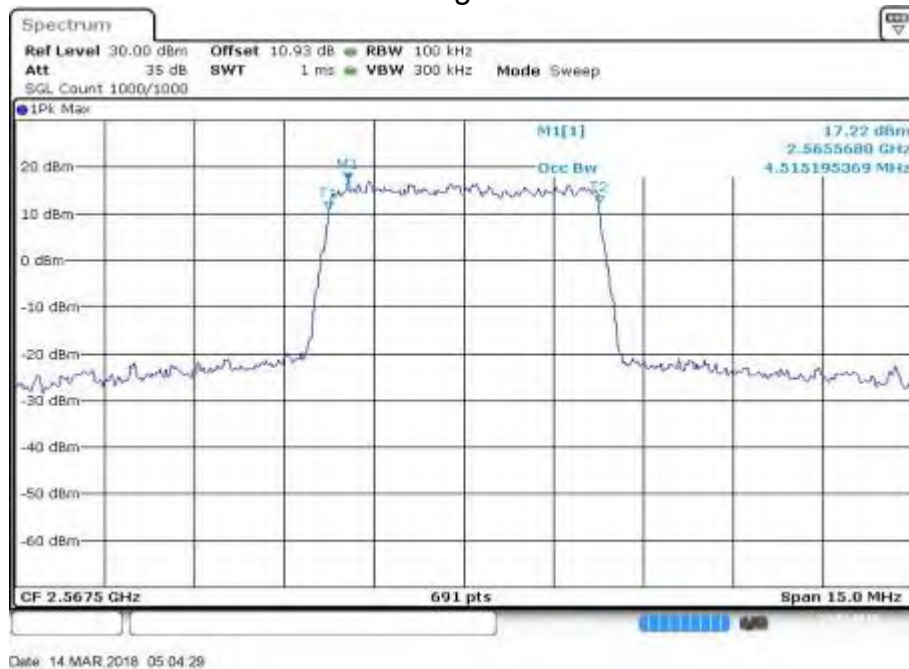


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2505	20800	10	50	0	9.030	Fig.4	9.074	Fig.8

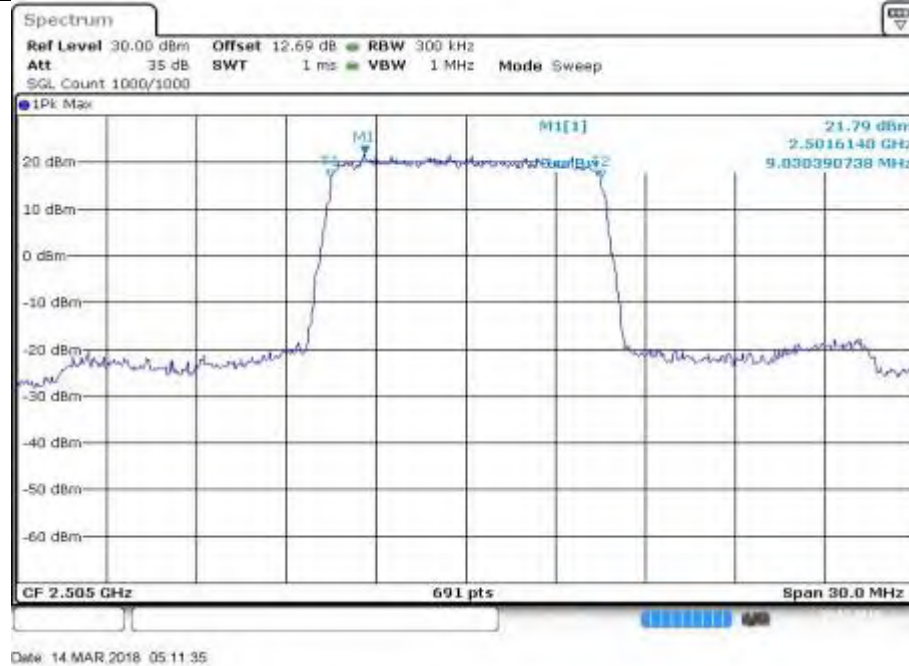


Fig.4

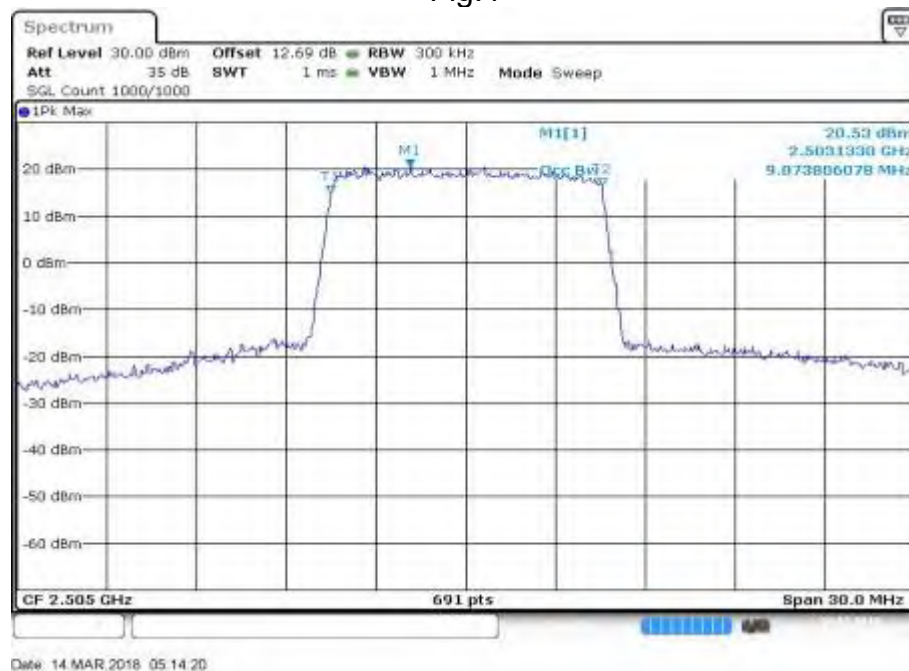


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2535	21100	10	50	0	9.030	Fig.4	9.074	Fig.8

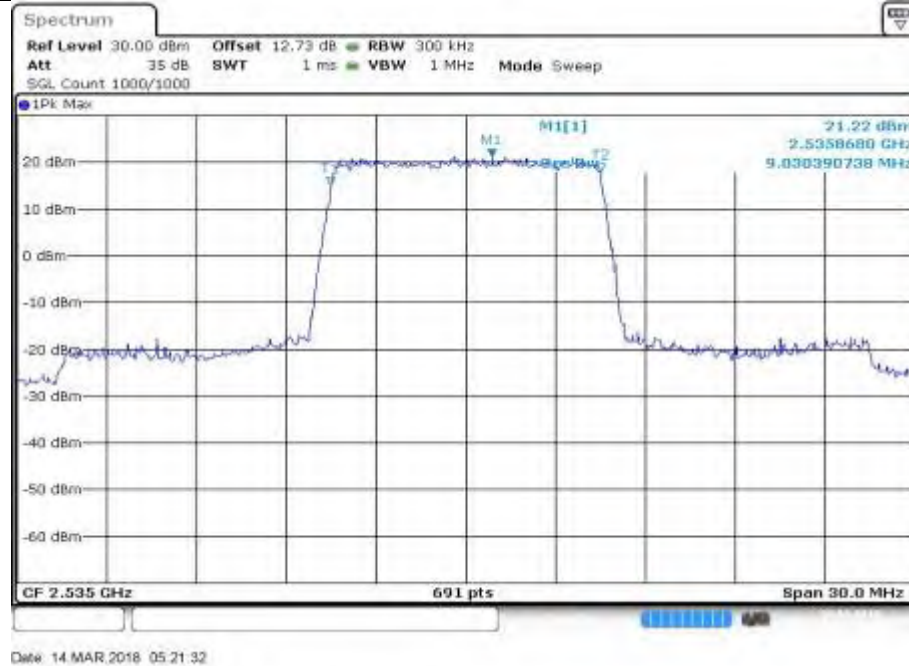


Fig.4

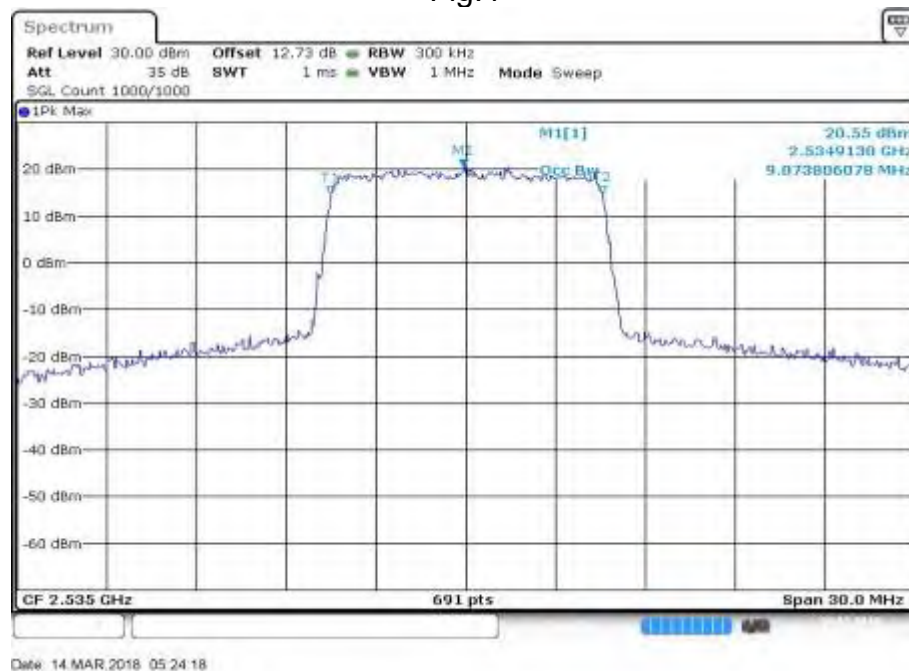


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2565	21400	10	50	0	9.030	Fig.4	9.030	Fig.8

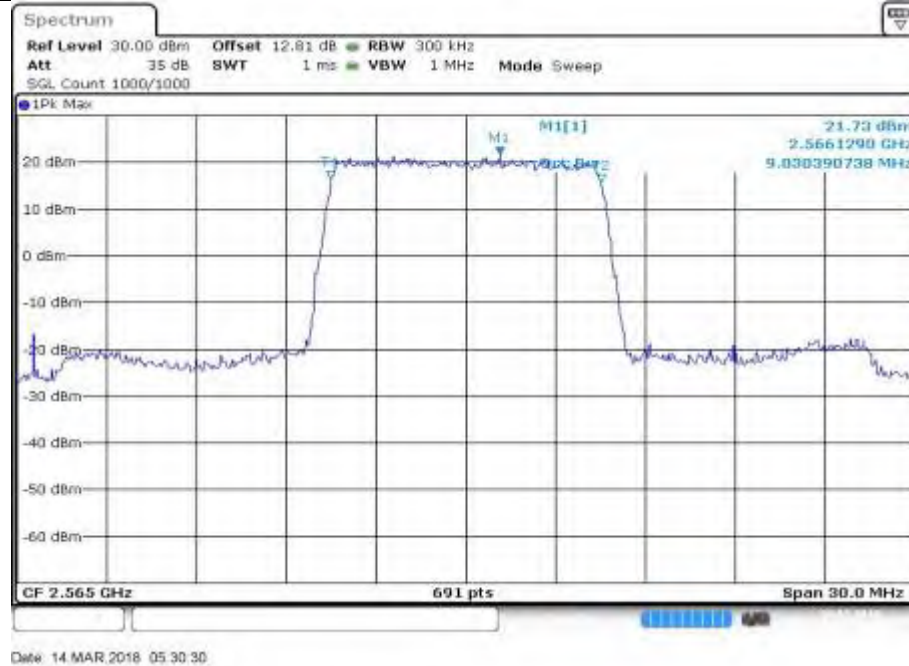


Fig.4

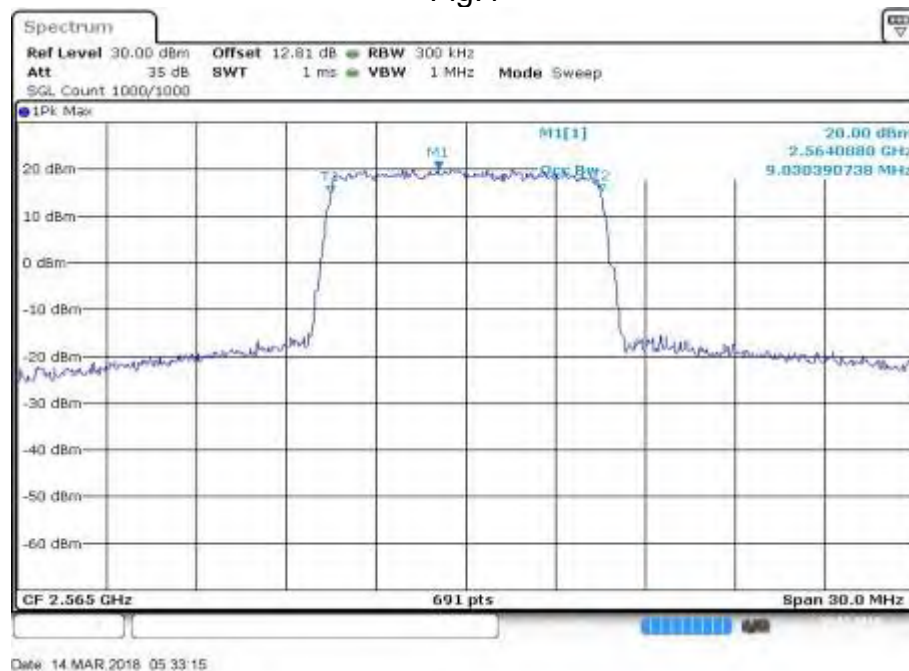


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2507.5	20825	15	75	0	13.480	Fig.4	13.415	Fig.8

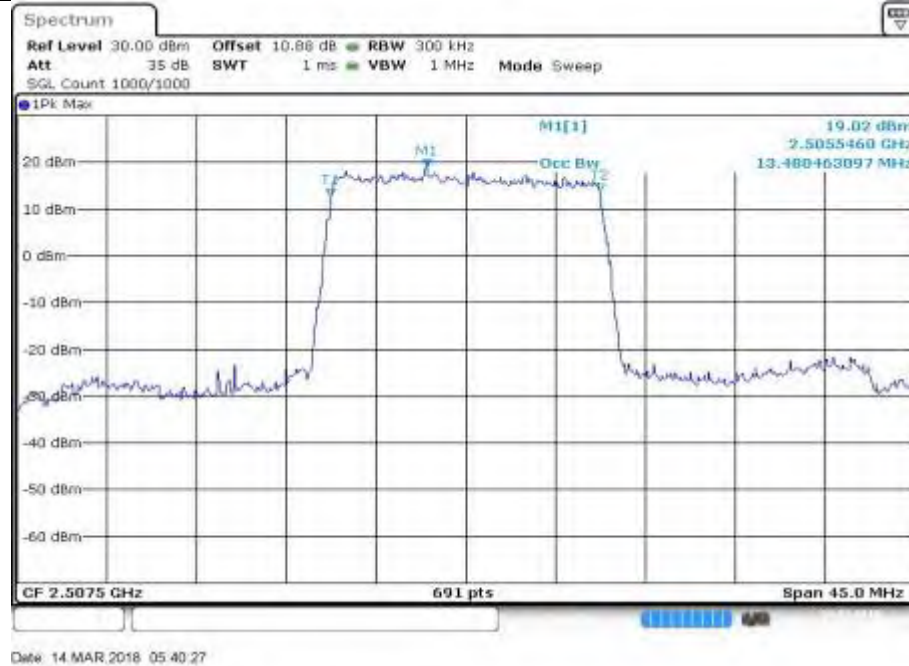


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2535	21100	15	75	0	13.415	Fig.4	13.480	75



Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2562.5	21375	15	75	0	13.480	Fig.4	13.480	Fig.8

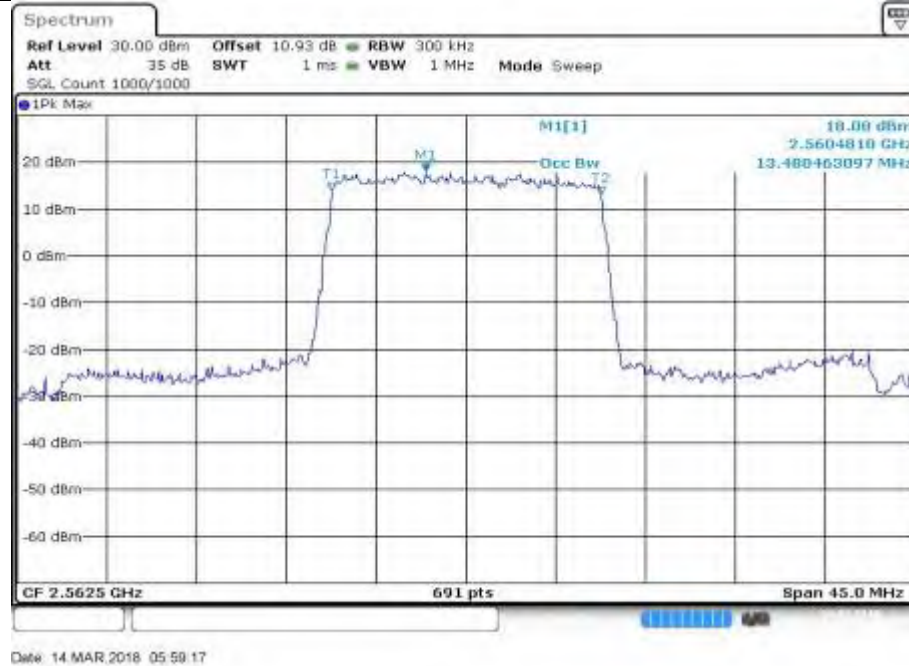


Fig.4



Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2510	20850	20	100	0	17.887	Fig.4	17.887	Fig.8

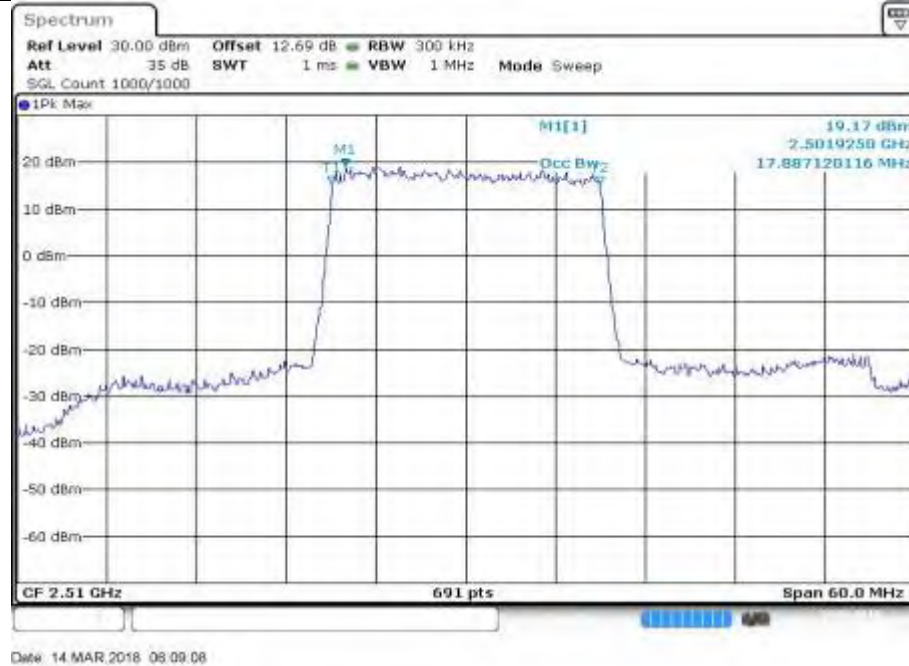


Fig.4

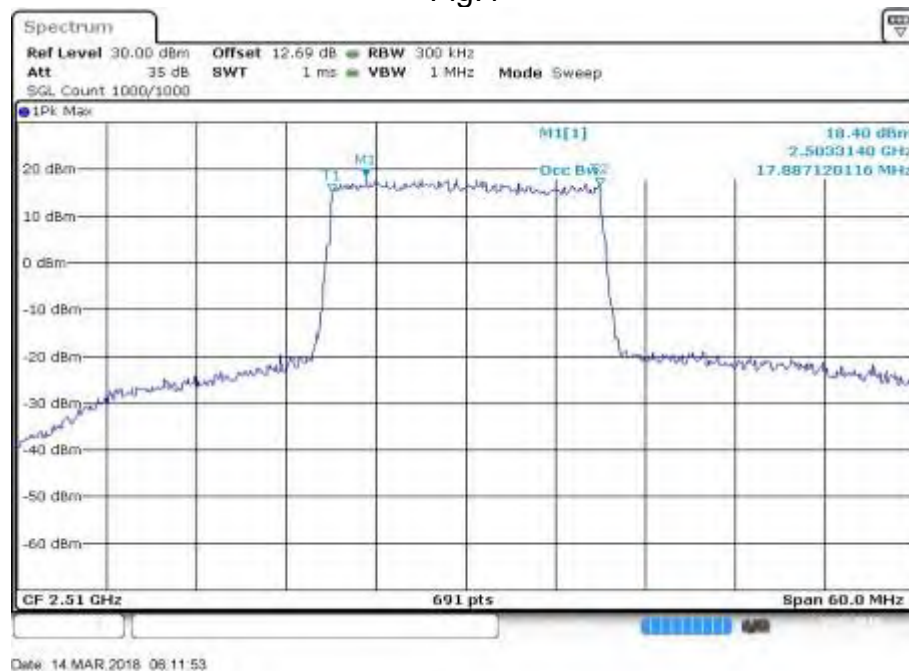


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2535	21100	20	100	0	17.887	Fig.4	17.887	Fig.8

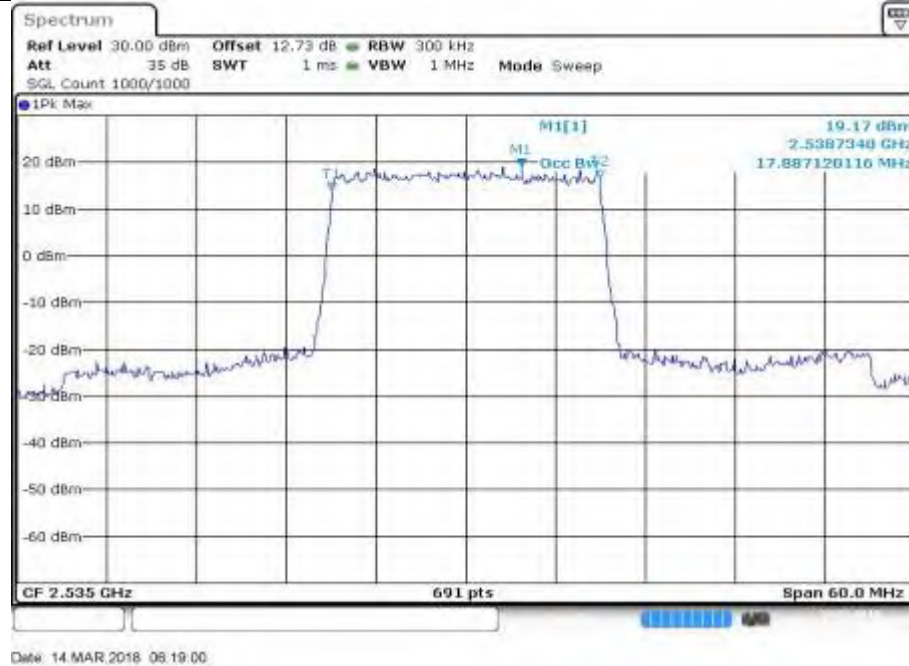


Fig.4

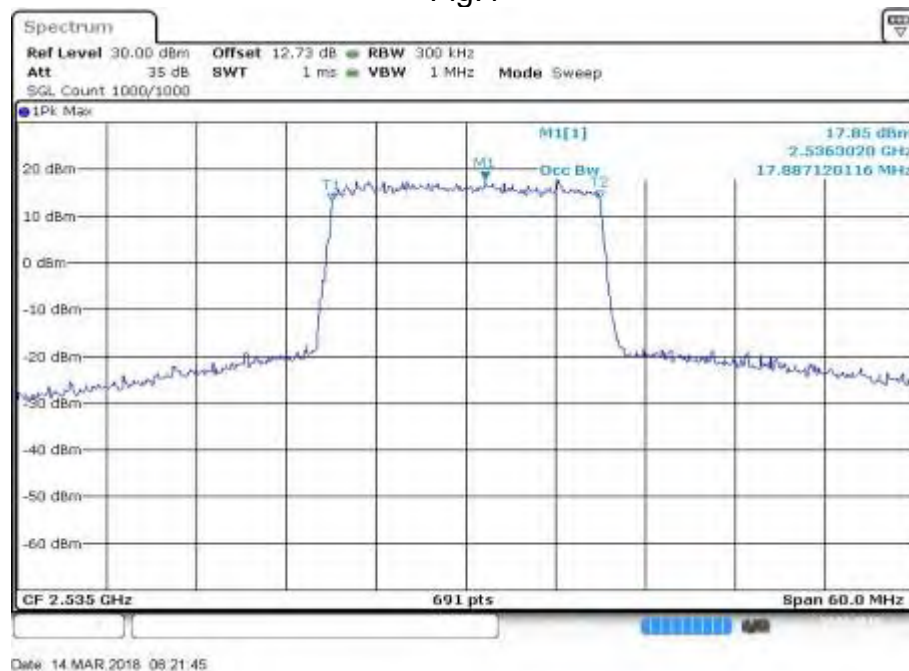


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
7	2560	21350	20	100	0	17.887	Fig.4	17.974	Fig.8



Fig.4

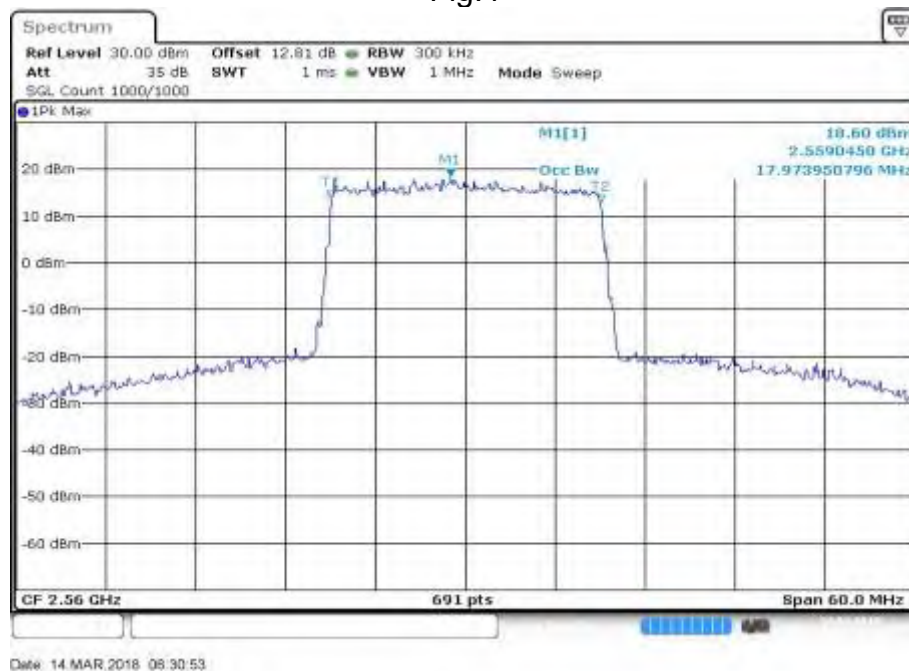


Fig.8

3 Emission Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
7	2502.5	20775	5	25	0	4.971	Fig.4	4.971	Fig.8

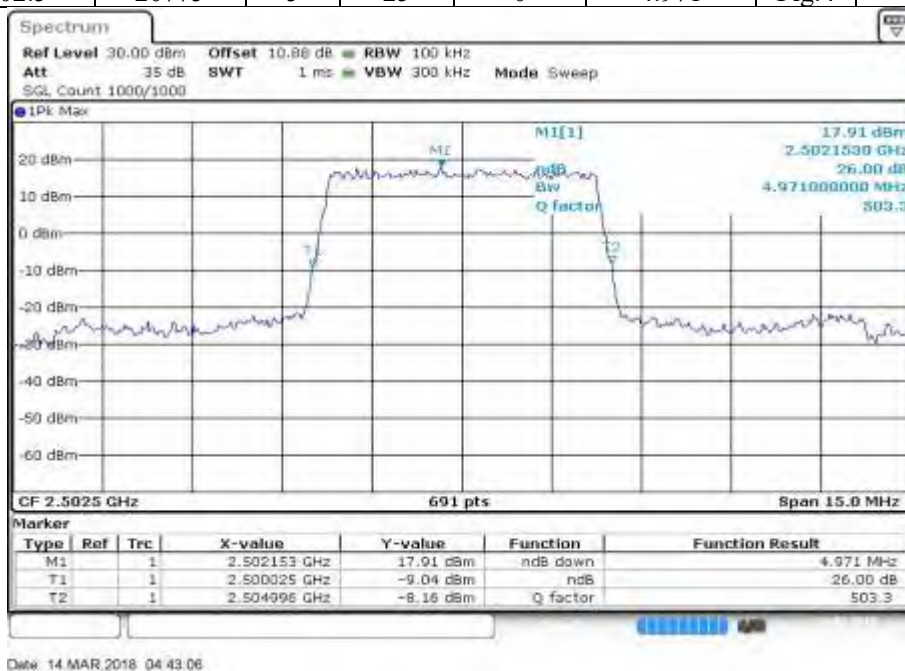


Fig.4

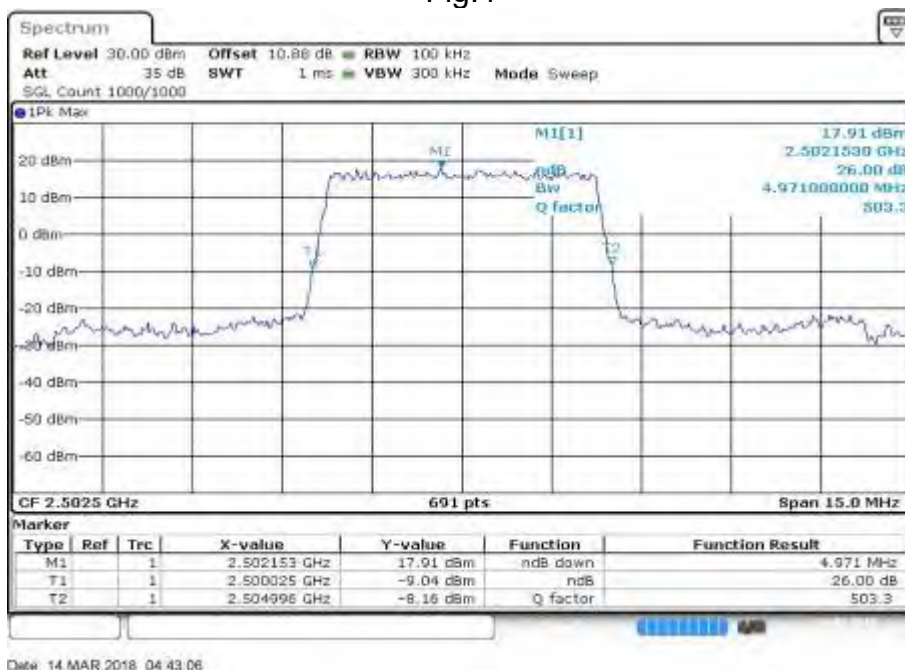


Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
7	2535	21100	5	25	0	4.971	Fig.4	4.949	Fig.8

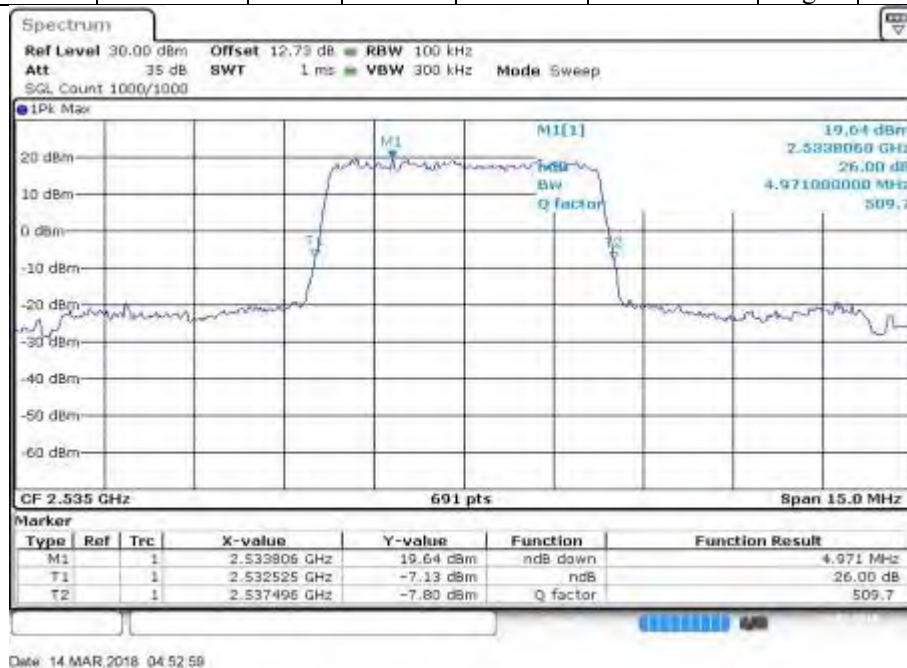


Fig.4

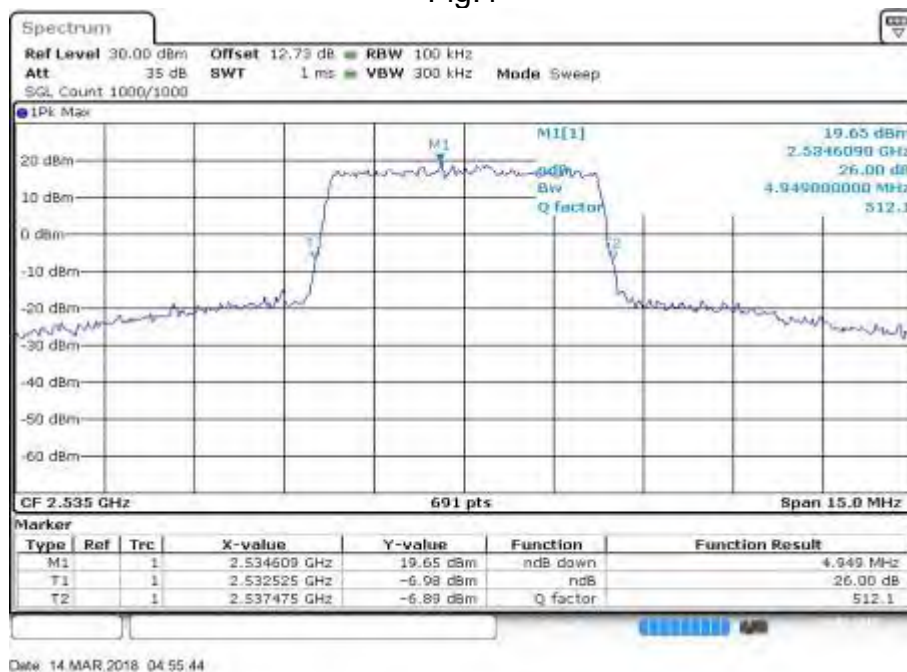


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
7	2567.5	21425	5	25	0	4.949	Fig.4	4.949	Fig.8

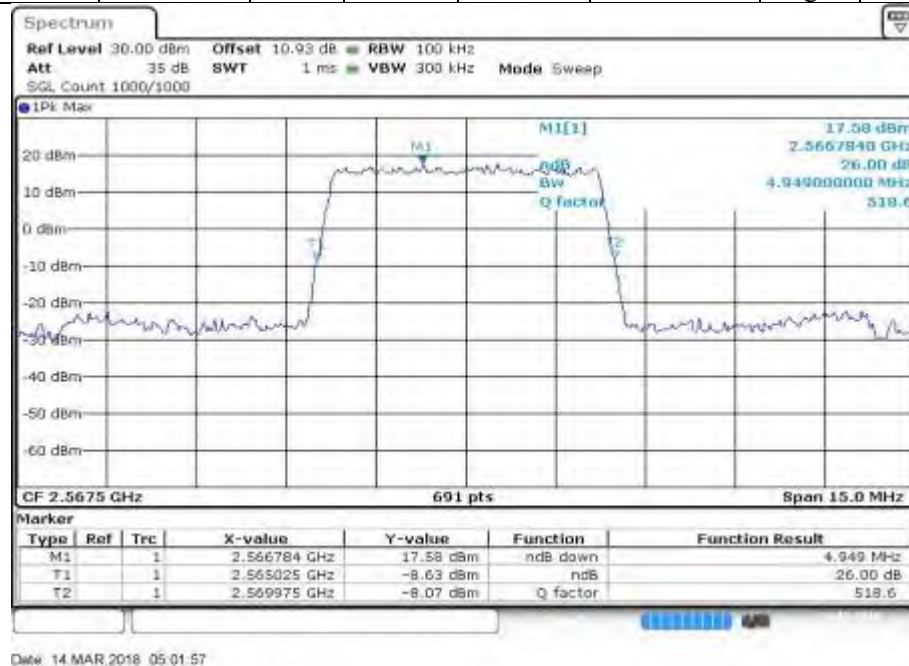


Fig.4

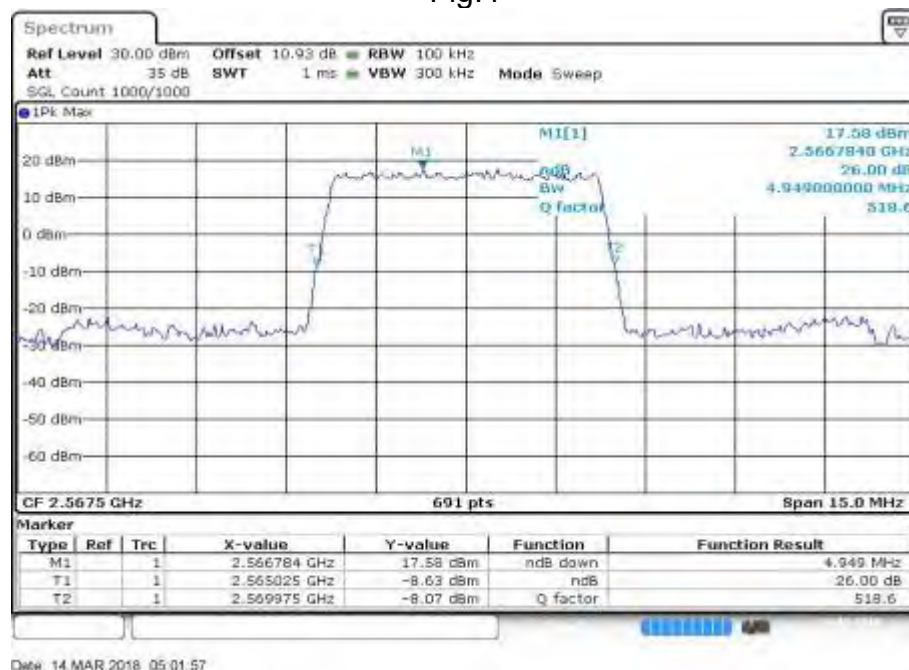


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
7	2505	20800	10	50	0	9.942	Fig.4	9.986	Fig.8

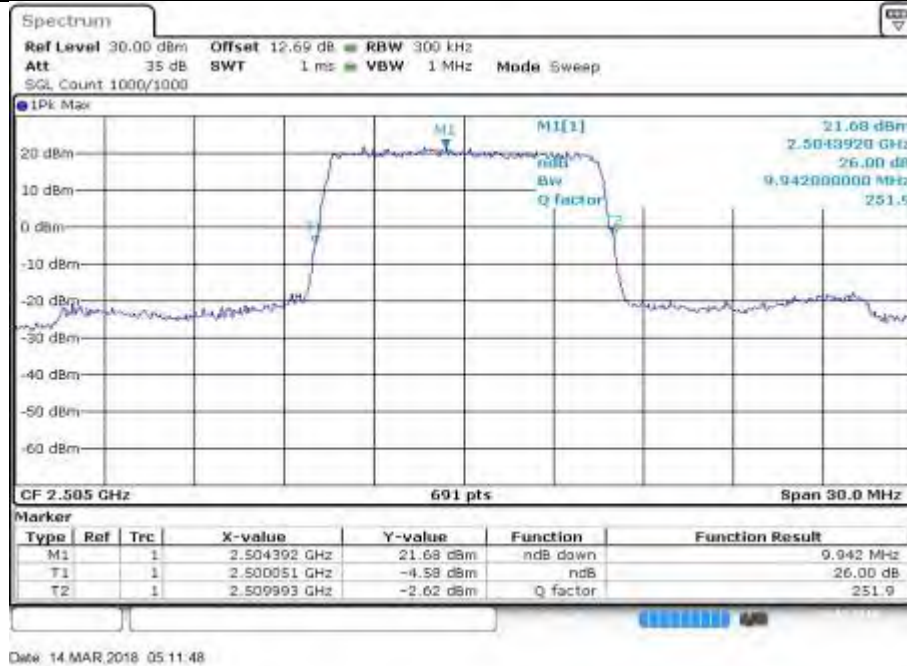


Fig.4

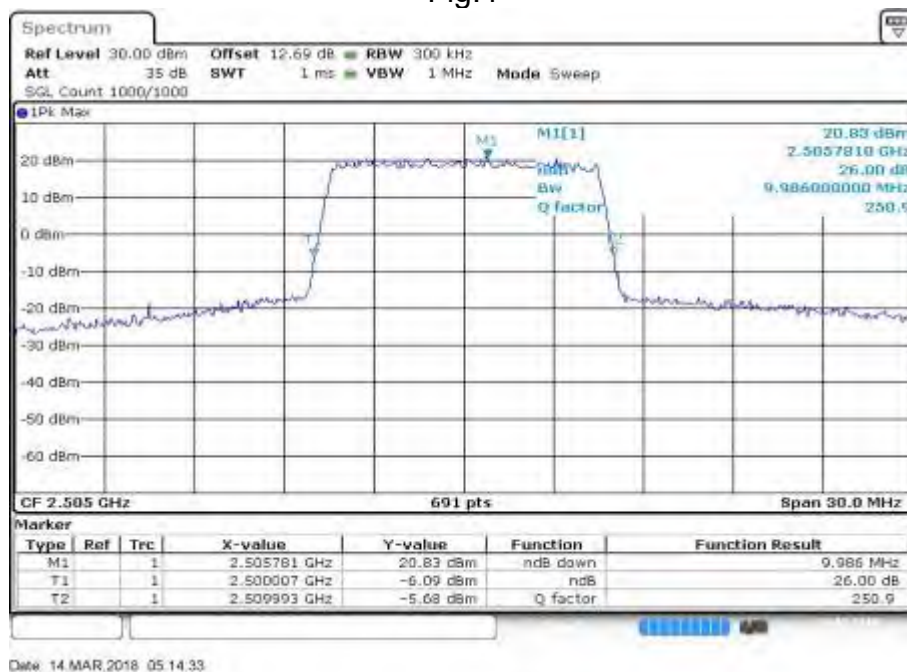


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
7	2565	21400	10	50	0	9.986	Fig.4	9.986	Fig.8

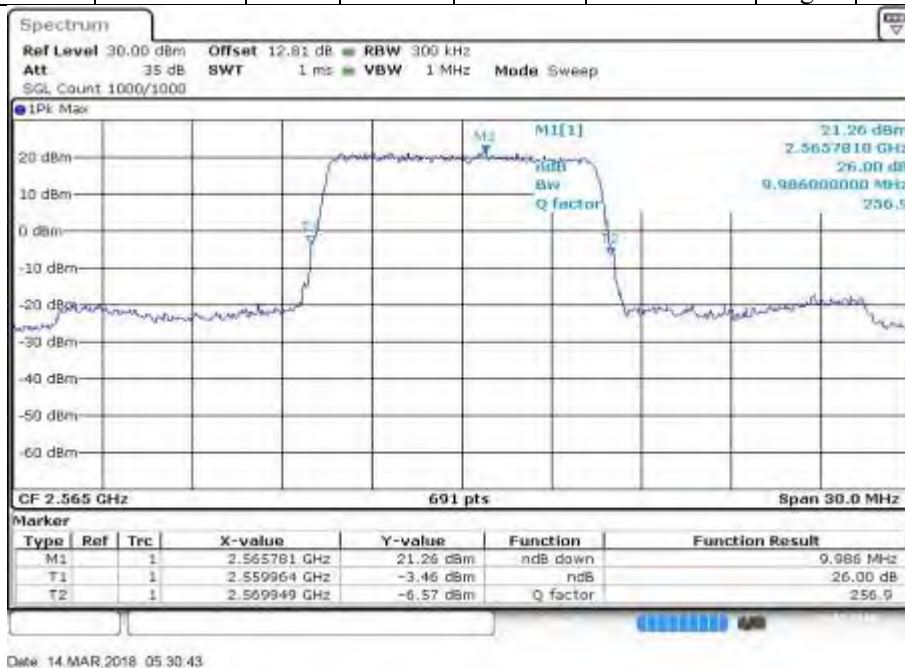


Fig.4

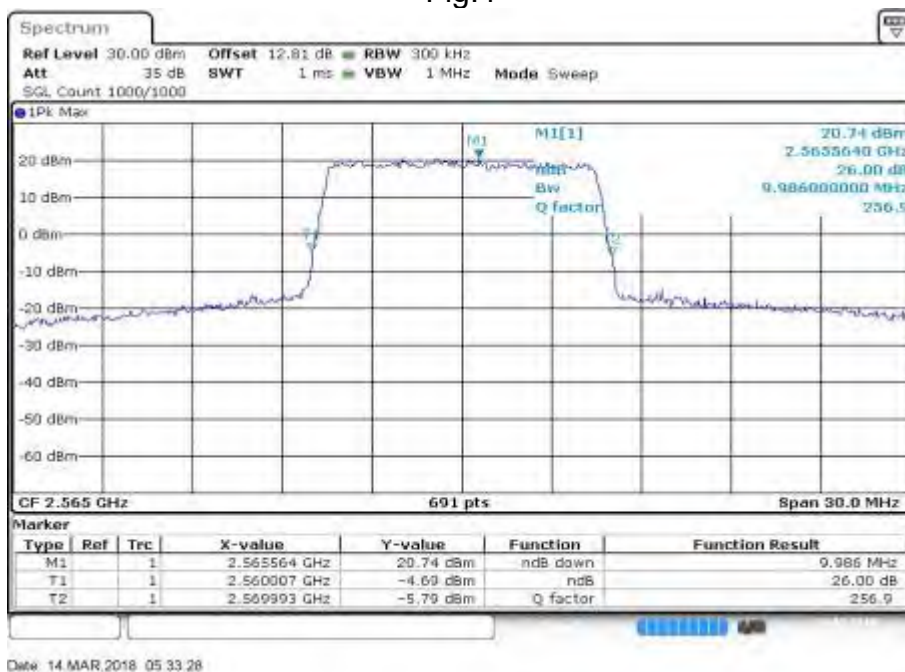


Fig.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
7	2507.5	20825	15	75	0	14.653	Fig.4	14.718	Fig.8

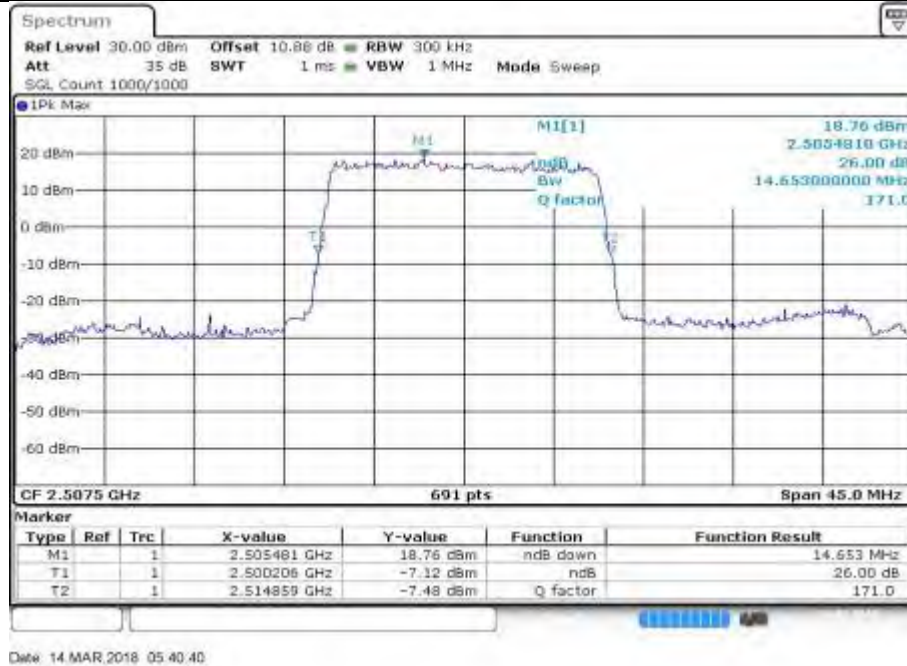


Fig.4

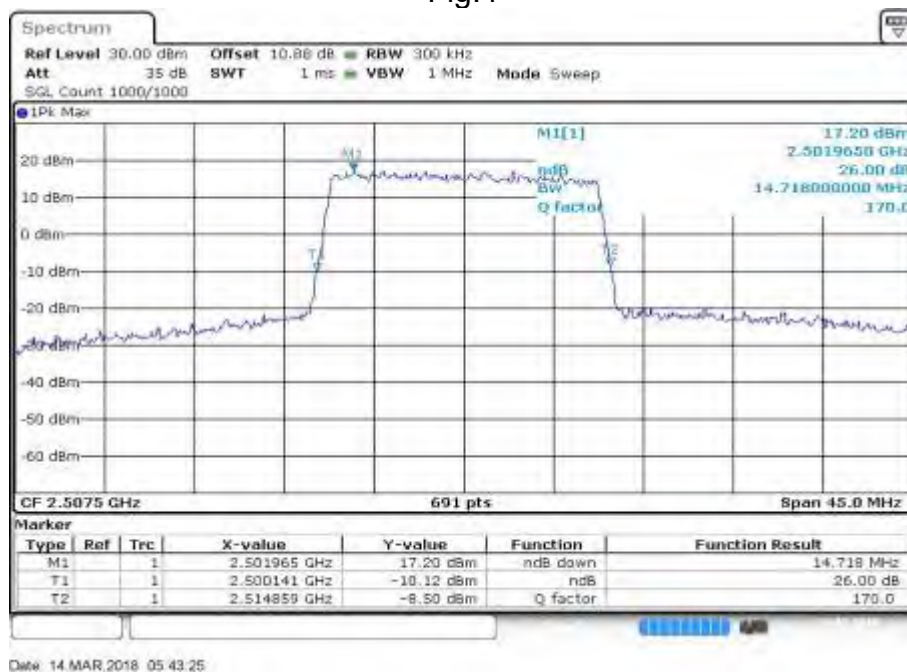


Fig.8