TESTING (OR CALIBRATION)
NVLAP LAB CODE 600141-0

Registration
No.788871

.

TEST REPORT FOR RF TESTING

Report No.: SRTC2018-9004(F)-18122402(C)

Product Name: LTE/WCDMA/GSM (GPRS) Multi-Mode
Digital Mobile Phone

Product Model: ZTE Blade V10 Vita

Applicant: ZTE Corporation

Manufacturer: ZTE Corporation

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

FCC ID: SRQ-ZTEV10VITA

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

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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.
The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

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:	Liu Jia
Tel:	+86 10 57996183
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Email:	liujiaf@srtc.org.cn

1.3 Applicant's details

Company:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South,Hi-Tech, Industrial Park, Nanshan District,Shenzhen, P.R.China
City:	Shenzhen
Country or Region:	P.R.China
Contacted person:	Gong Yu
Tel:	86-21-68895397
Fax:	---
Email:	gongyu@zte.com.cn

1.4 Manufacturer's details

Company:	ZTE Corporation
Address:	ZTE Plaza, Keji Road South,Hi-Tech, Industrial Park, Nanshan District,Shenzhen, P.R.China
City:	Shenzhen
Country or Region:	P.R.China
Contacted person:	Gong Yu
Tel:	86-21-68895397
Fax:	---
Email:	gongyu@zte.com.cn

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2018-12-24
Testing Start Date:	2018-12-24
Testing End Date:	2019-02-11

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.):	4.40
Minimum Extreme Supply Voltage (V d.c.):	3.60

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
Modulation Type	QPSK 16QAM 64QAM
Duplex Mode	FDD
Antenna Type	Fixed Internal Antenna
Power Supply	Battery/AC adapter
HW Version	ujyA
SW Version	TEL_MX_ZTE_Blade_V10_VitaV1.0
IMEI	868486040002380

2.2 Summary table

FCC Rule Part	Frequency Range(MHz)	EIRP/ERP (W)	Frequency Tolerance (ppm)	Emission Designator	Emission Bandwidth (MHz)	Measured 26dBC Bandwidth (MHz)	Communication Type
LTE BAND2							
24E	1850.7-1909.3	0.056	0.010	1M11G7D	1.4M	1.307	QPSK
	1850.7-1909.3	0.059	0.010	1M11D7W	1.4M	1.307	16QAM
	1850.7-1909.3	0.055	0.010	1M11W7D	1.4M	1.307	64QAM
	1851.5-1908.5	0.072	0.006	2M77G7D	3M	3.243	QPSK
	1851.5-1908.5	0.056	0.006	2M79D7W	3M	3.243	16QAM
	1851.5-1908.5	0.056	0.006	2M79W7D	3M	3.243	64QAM
	1852.5-1907.5	0.072	0.008	4M56G7D	5M	5.275	QPSK
	1852.5-1907.5	0.056	0.008	4M56D7W	5M	5.318	16QAM
	1852.5-1907.5	0.056	0.008	4M56W7D	5M	5.318	64QAM
	1855-1905	0.072	0.005	9M2G7D	10M	10.289	QPSK
	1855-1905	0.065	0.005	9M2D7W	10M	10.289	16QAM
	1855-1905	0.058	0.005	9M2W7D	10M	10.289	64QAM
	1857.5-1902.5	0.066	0.006	13M5G7D	15M	15.239	QPSK
	1857.5-1902.5	0.060	0.006	13M5D7W	15M	15.239	16QAM
	1857.5-1902.5	0.056	0.006	13M5W7D	15M	15.239	64QAM
	1860-1900	0.072	0.006	18M0G7D	20M	20.145	QPSK
	1860-1900	0.065	0.006	18M0D7W	20M	20.145	16QAM
	1860-1900	0.055	0.006	18M0W7D	20M	20.145	64QAM
LTE BAND4							
27L	1710.7-1754.3	0.046	0.009	1M11G7D	1.4M	1.336	QPSK
	1710.7-1754.3	0.042	0.009	1M11D7W	1.4M	1.355	16QAM
	1710.7-1754.3	0.040	0.009	1M11W7D	1.4M	1.355	64QAM
	1711.5-1753.5	0.049	0.007	2M80G7D	3M	3.165	QPSK
	1711.5-1753.5	0.041	0.007	2M80D7W	3M	3.399	16QAM
	1711.5-1753.5	0.038	0.007	2M80W7D	3M	3.399	64QAM
	1712.5-1752.5	0.050	0.006	4M54G7D	5M	5.275	QPSK
	1712.5-1752.5	0.040	0.006	4M54D7W	5M	5.297	16QAM
	1712.5-1752.5	0.037	0.006	4M54W7D	5M	5.297	64QAM
	1715-1750	0.050	0.006	9M1G7D	10M	10.376	QPSK
	1715-1750	0.047	0.006	9M1D7W	10M	10.203	16QAM
	1715-1750	0.044	0.006	9M1W7D	10M	10.203	64QAM
	1717.5-1747.5	0.049	0.006	13M5G7D	15M	15.174	QPSK
	1717.5-1747.5	0.049	0.006	13M5D7W	15M	15.109	16QAM
	1717.5-1747.5	0.045	0.006	13M5W7D	15M	15.109	64QAM
	1720-1745	0.051	0.006	18M0G7D	20M	20.058	QPSK
	1720-1745	0.048	0.006	18M1D7W	20M	19.884	16QAM
	1720-1745	0.045	0.006	18M1W7D	20M	19.884	64QAM

LTE BAND5							
22H	824.7-848.3	0.023	-0.031	1M11G7D	1.4M	1.307	QPSK
	824.7-848.3	0.012	-0.031	1M11D7W	1.4M	1.386	16QAM
	824.7-848.3	0.011	-0.031	1M11W7D	1.4M	1.386	64QAM
	825.5-847.5	0.016	-0.007	2M79G7D	3M	3.243	QPSK
	825.5-847.5	0.013	-0.007	2M77D7W	3M	3.347	16QAM
	825.5-847.5	0.012	-0.007	2M77W7D	3M	3.347	64QAM
	826.5-846.5	0.016	-0.019	4M54G7D	5M	5.284	QPSK
	826.5-846.5	0.013	-0.019	4M54D7W	5M	5.318	16QAM
	826.5-846.5	0.011	-0.019	4M54W7D	5M	5.318	64QAM
	829-844	0.024	-0.009	9M1G7D	10M	10.376	QPSK
	829-844	0.015	-0.009	9M1D7W	10M	10.289	16QAM
	829-844	0.015	-0.009	9M1W7D	10M	10.289	64QAM
LTE BAND7							
27M	2502.5-2567.5	0.031	0.005	4M54G7D	5M	5.188	QPSK
	2502.5-2567.5	0.025	0.005	4M54D7W	5M	5.275	16QAM
	2502.5-2567.5	0.024	0.005	4M54W7D	5M	5.275	64QAM
	2505-2565	0.030	0.002	9M1G7D	10M	10.333	QPSK
	2505-2565	0.029	0.002	9M1D7W	10M	10.333	16QAM
	2505-2565	0.027	0.002	9M1W7D	10M	10.333	64QAM
	2507.5-2562.5	0.031	-0.004	13M5G7D	15M	15.174	QPSK
	2507.5-2562.5	0.030	-0.004	13M5D7W	15M	15.109	16QAM
	2507.5-2562.5	0.026	-0.004	13M5W7D	15M	15.109	64QAM
	2510-2560	0.040	0.004	18M0G7D	20M	19.884	QPSK
	2510-2560	0.032	0.004	18M0D7W	20M	19.711	16QAM
	2510-2560	0.028	0.004	18M0W7D	20M	19.711	64QAM

2.3 Support Equipment

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

Equipment	Battery
Manufacturer	Zhongshan Tianmao Battery Co.,LTD
Model Number	Li3931T44P8h806139
Serial Number	---

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. He Dengshun	Issued date: 20190211

6 TEST RESULT

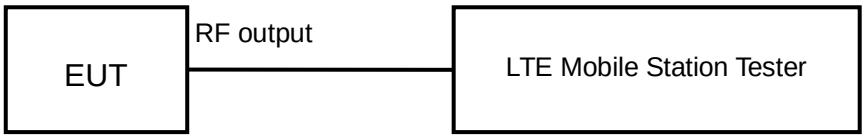
6.1 RF Power Output

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

Test result:
The test results are shown in Appendix A.

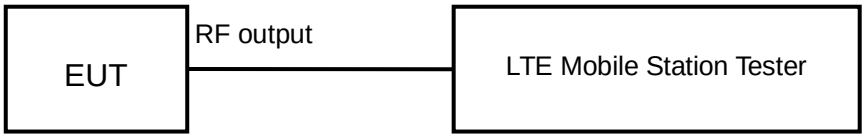
6.2 Effective Radiated Power

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:



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, ERP = EIRP – 2.15 (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.

Test result:
The test results are shown in Appendix A.

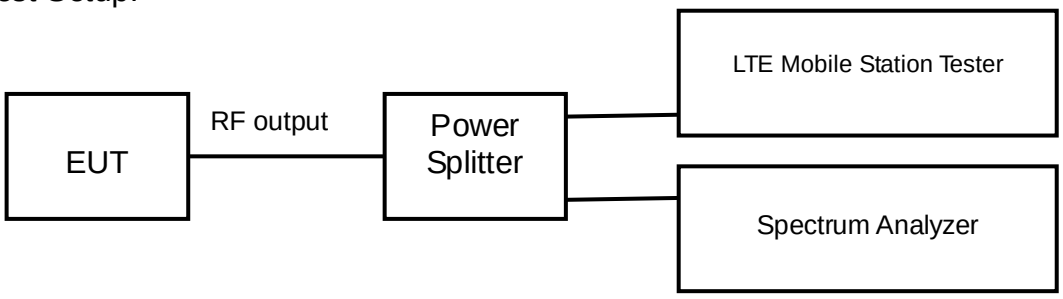
6.3 Occupied Bandwidth

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

Test result:
The test results are shown in Appendix A.

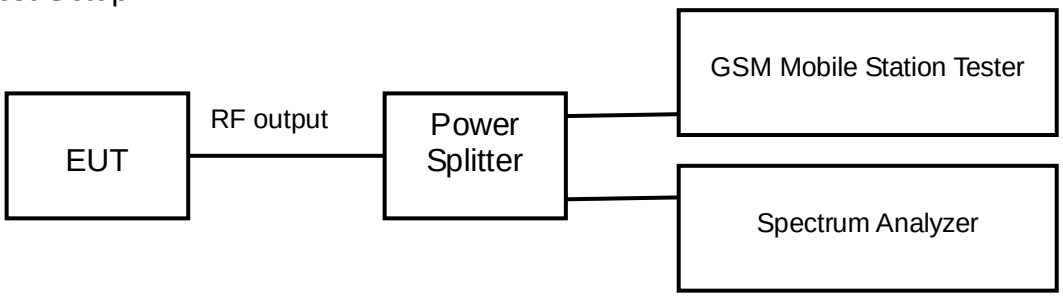
6.4 Emission Bandwidth

Rule Part(s)
FCC: 2.1049

Ambient condition:

Temperature	Relative humidity	Pressure
23℃	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)

Test result:
The test results are shown in Appendix A.

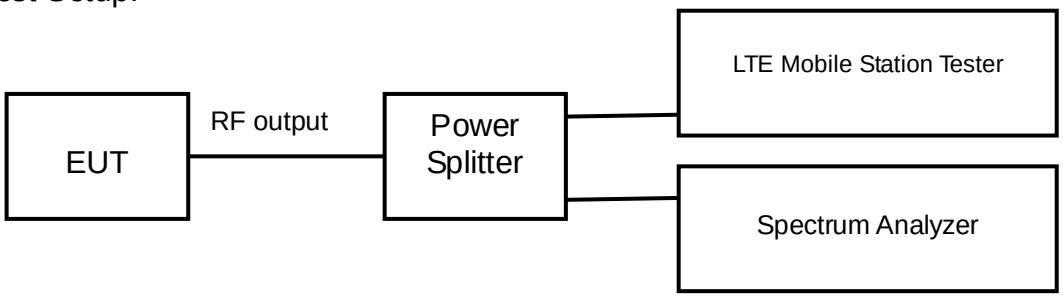
6.5 Peak-Average Ratio

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

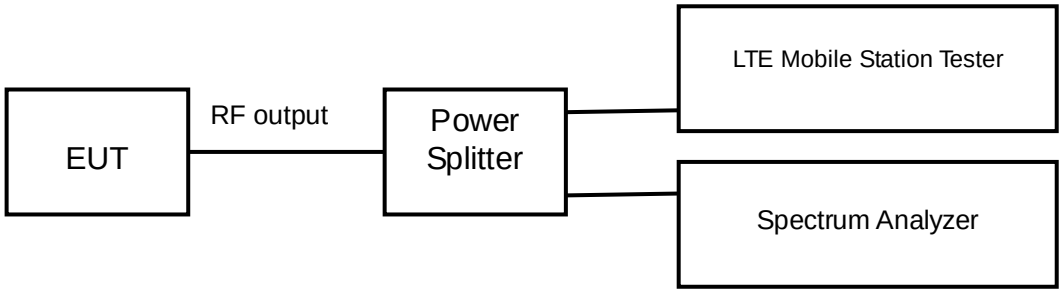
Test result:
The test results are shown in Appendix A.

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	≤-13dBm

Test result:
The test results are shown in Appendix A.

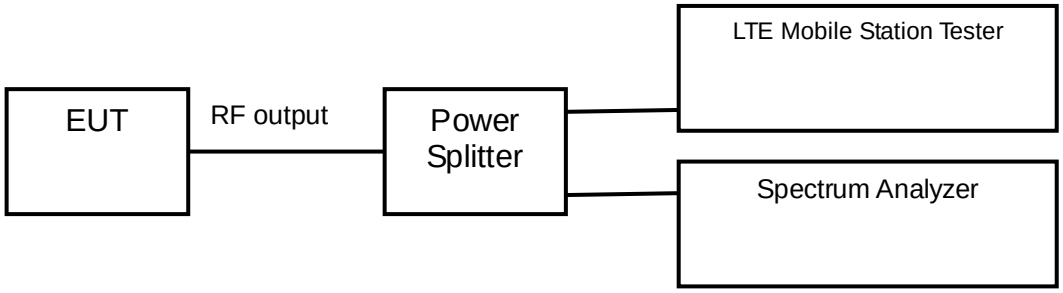
6.7 Band Edges Compliance

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	≤-13dBm

Test result:
The test results are shown in Appendix A.

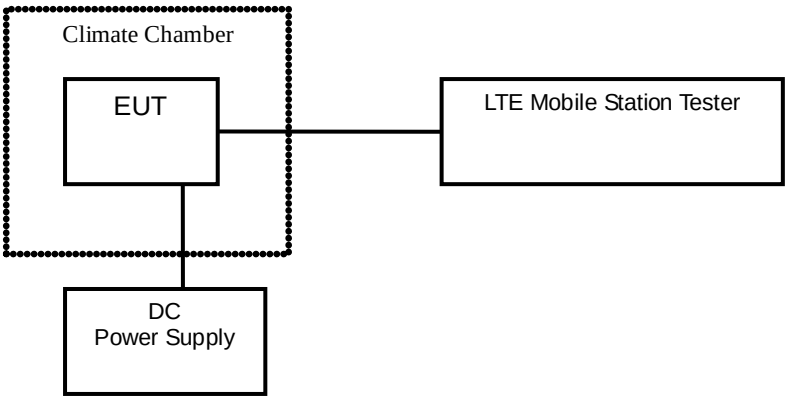
6.8 Frequency Stability

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.

Test result:
The test results are shown in Appendix A.

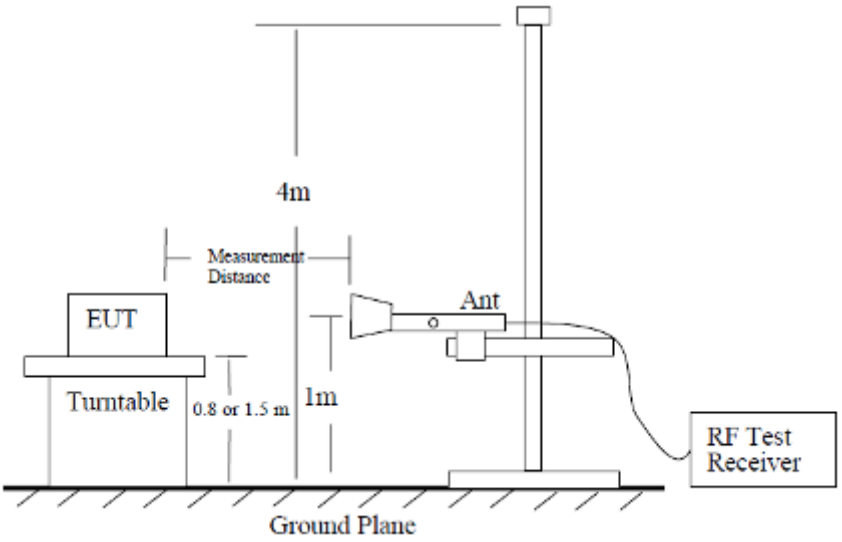
6.9 Radiated Spurious Emissions

Rule Part(s)
FCC: 2.1053, 22.917, 24.238, 27.53

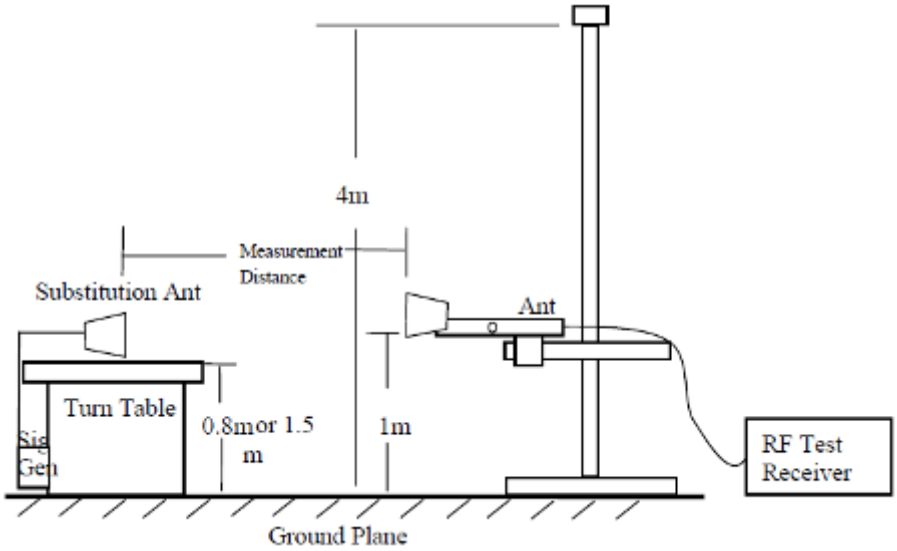
Ambient condition:

Temperature	Relative humidity	Pressure
20.8°C	36.5%	100.9kPa

Test Setup:



Step 1



Step 2

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 (Pmea) 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 (Pmea) 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 (Pca) and the Substitution Antenna Gain (Ga).

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:
Power(EIRP) = Pmea+ Pca + Ga
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 (dB).

Assumed the power of signal source record is -20dBm. A cable loss of -30dB, and an antenna gain of 11dB are added.
P=Pmea+Pca+Ga=(-20dBm)+(-30dB)+(11dB)= -39dBm

Test result:
The test results are shown in Appendix B.

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	S/N	Calibration Date	Calibration Due Date
1	MT8820C Mobile Station Tester	Anritsu	6201300660	2018.8.20	2019.8.19
2	FSV40 Spectrum Analyzer	R&S	101065	2018.8.20	2019.8.19
2	N9020A Spectrum Analyzer	Agilent	MY48010771	2017.08.20	2018.08.19
3	6007 Power Divider	Weinschel	6007-GJ-1	2018.08.20	2019.08.19
4	DC Power Supply E3645A	Agilent	MY40000741	2018.3.01	2019.2.28
5	Temperature chamber SH241	ESPEC	92013758	2018.8.20	2019.8.19
6	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA	-----	-----	-----
7	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	---	-----	-----
8	Turn table Diameter:1m	FRANKONIA	-----	-----	-----
9	Turn table Diameter:5m	FRANKONIA	-----	-----	-----
10	Antenna master FAC(MA4.0)	MATURO	-----	-----	-----
11	Antenna master SAC(MA4.0)	MATURO	-----	-----	-----
12	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	-----	-----
13	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100512	2018.08.20	2019.08.19
14	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100513	2018.08.20	2019.08.19
15	HL562 Ultra log antenna	R&S	100016	2018.08.20	2019.08.19
16	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2018.08.20	2019.08.19
17	ESI 40 EMI test receiver	R&S	100015	2018.08.20	2019.08.19
18	ESCS30 EMI test receiver	R&S	100029	2018.08.20	2019.08.19
19	HL562 Receive antenna	R&S	100167	2018.08.20	2019.08.19
20	ENV216 AMN	R&S	3560.6550.12	2018.08.20	2019.08.19

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: -5.7dBi

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	22.8	17.1
				1	5	22.9	17.2
				3	2	22.8	17.1
				6	0	22.3	16.6
	1880	18900		1	0	23.0	17.3
				1	5	23.1	17.4
				3	2	23.2	17.5
				6	0	22.6	16.9
	1909.3	19193		1	0	23.0	17.3
				1	5	22.9	17.2
				3	2	23.0	17.3
				6	0	22.4	16.7

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	22.8	17.1
				1	5	22.8	17.1
				3	2	22.5	16.8
				6	0	21.6	15.9
	1880	18900		1	0	23.4	17.7
				1	5	23.3	17.6
				3	2	22.5	16.8
				6	0	21.8	16.1
	1909.3	19193		1	0	22.1	16.4
				1	5	22.1	16.4
				3	2	22.3	16.6
				6	0	21.8	16.1

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	1850.7	18607	1.4	1	0	22.6	16.9
				1	5	22.4	16.7
				3	2	22.2	16.5
				6	0	21.4	15.7
	1880	18900		1	0	23.1	17.4
				1	5	23.1	17.4
				3	2	22.3	16.6
				6	0	21.6	15.9
	1909.3	19193		1	0	22.1	16.4
				1	5	22.1	16.4
				3	2	22.3	16.6
				6	0	21.4	15.7

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1851.5	18615	3	1	0	22.9	17.2
				1	14	22.8	17.1
				8	4	22.4	16.7
				15	0	22.4	16.7
	1880	18900		1	0	23.8	18.1
				1	14	23.9	18.2
				8	4	22.8	17.1
				15	0	22.9	17.2
	1908.5	19185		1	0	24.3	18.6
				1	14	24.3	18.6
				8	4	23.3	17.6
				15	0	23.3	17.6

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1851.5	18615	3	1	0	22.7	17.0
				1	14	22.6	16.9
				8	4	21.6	15.9
				15	0	21.6	15.9
	1880	18900		1	0	23.2	17.5
				1	14	23.2	17.5
				8	4	22.0	16.3
				15	0	22.0	16.3
	1908.5	19185		1	0	22.9	17.2
				1	14	22.9	17.2
				8	4	22.4	16.7
				15	0	22.4	16.7

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	1851.5	18615	3	1	0	22.4	16.7
				1	14	22.3	16.6
				8	4	21.3	15.6
				15	0	21.2	15.5
	1880	18900		1	0	23.2	17.5
				1	14	23.1	17.4
				8	4	22.0	16.3
				15	0	22.0	16.3
	1908.5	19185		1	0	22.4	16.7
				1	14	22.4	16.7
				8	4	22.1	16.4
				15	0	22.2	16.5

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1852.5	18625	5	1	0	22.9	17.2
				1	24	22.8	17.1
				12	6	22.4	16.7
				25	0	22.4	16.7
	1880	18900		1	0	23.8	18.1
				1	24	23.9	18.2
				12	6	22.8	17.1
				25	0	22.9	17.2
	1907.5	19175		1	0	24.3	18.6
				1	24	24.3	18.6
				12	6	23.3	17.6
				25	0	23.3	17.6

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1852.5	18625	5	1	0	22.7	17.0
				1	24	22.6	16.9
				12	6	21.6	15.9
				25	0	21.6	15.9
	1880	18900		1	0	23.2	17.5
				1	24	23.2	17.5
				12	6	22.0	16.3
				25	0	22.0	16.3
	1907.5	19175		1	0	22.9	17.2
				1	24	22.9	17.2
				12	6	22.4	16.7
				25	0	22.4	16.7

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	1852.5	18625	5	1	0	22.5	16.8
				1	24	22.2	16.5
				12	6	21.6	15.9
				25	0	21.3	15.6
	1880	18900		1	0	23.2	17.5
				1	24	23.1	17.4
				12	6	22.0	16.3
				25	0	22.0	16.3
	1907.5	19175		1	0	22.4	16.7
				1	24	22.6	16.9
				12	6	22.4	16.7
				25	0	22.2	16.5

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1855	18650	10	1	0	23.1	17.4
				1	49	22.9	17.2
				24	12	22.4	16.7
				50	0	22.6	16.9
	1880	18900		1	0	23.8	18.1
				1	49	22.7	17.0
				24	12	22.9	17.2
				50	0	23.0	17.3
	1905	19150		1	0	24.2	18.5
				1	49	24.3	18.6
				24	12	23.2	17.5
				50	0	23.2	17.5

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1855	18650	10	1	0	22.9	17.2
				1	49	22.8	17.1
				24	12	21.6	15.9
				50	0	21.6	15.9
	1880	18900		1	0	23.8	18.1
				1	49	23.7	18.0
				24	12	22.0	16.3
				50	0	22.0	16.3
	1905	19150		1	0	23.1	17.4
				1	49	23.1	17.4
				24	12	22.3	16.6
				50	0	22.3	16.6

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	1855	18650	10	1	0	22.4	16.7
				1	49	22.8	17.1
				24	12	21.5	15.8
				50	0	21.3	15.6
	1880	18900		1	0	23.2	17.5
				1	49	23.3	17.6
				24	12	22.0	16.3
				50	0	22.0	16.3
	1905	19150		1	0	23.0	17.3
				1	49	23.1	17.4
				24	12	22.1	16.4
				50	0	22.1	16.4

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1857.5	18675	15	1	0	23.7	18.0
				1	74	23.9	18.2
				40	18	23.0	17.3
				75	0	22.9	17.2
	1880	18900		1	0	23.6	17.9
				1	74	23.8	18.1
				40	18	23.2	17.5
				75	0	23.2	17.5
	1902.5	19125		1	0	22.9	17.2
				1	74	22.8	17.1
				40	18	22.5	16.8
				75	0	22.3	16.6

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1857.5	18675	15	1	0	23.2	17.5
				1	74	23.2	17.5
				40	18	22.1	16.4
				75	0	22.1	16.4
	1880	18900		1	0	23.5	17.8
				1	74	23.2	17.5
				40	18	22.4	16.7
				75	0	22.3	16.6
	1902.5	19125		1	0	22.9	17.2
				1	74	22.9	17.2
				40	18	21.5	15.8
				75	0	21.5	15.8

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	1857.5	18675	15	1	0	23.1	17.4
				1	74	23.1	17.4
				40	18	22.1	16.4
				75	0	22.1	16.4
	1880	18900		1	0	23.2	17.5
				1	74	23.0	17.3
				40	18	22.2	16.5
				75	0	22.1	16.4
	1902.5	19125		1	0	22.3	16.6
				1	74	22.4	16.7
				40	18	21.1	15.4
				75	0	21.3	15.6

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	1860	18700	20	1	0	23.2	17.5
				1	99	22.9	17.2
				50	25	22.5	16.8
				100	0	22.6	16.9
	1880	18900		1	0	24.0	18.3
				1	99	24.1	18.4
				50	25	23.0	17.3
				100	0	22.9	17.2
	1900	19100		1	0	24.3	18.6
				1	99	24.2	18.5
				50	25	23.1	17.4
				100	0	23.2	17.5

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	1860	18700	20	1	0	22.7	17.0
				1	99	22.5	16.8
				50	25	21.6	15.9
				100	0	21.5	15.8
	1880	18900		1	0	23.1	17.4
				1	99	23.1	17.4
				50	25	22.1	16.4
				100	0	22.0	16.3
	1900	19100		1	0	23.7	18.0
				1	99	23.8	18.1
				50	25	22.3	16.6
				100	0	22.3	16.6

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	1860	18700	20	1	0	22.3	16.6
				1	99	22.5	16.8
				50	25	21.2	15.5
				100	0	21.5	15.8
	1880	18900		1	0	23.0	17.3
				1	99	23.1	17.4
				50	25	22.1	16.4
				100	0	22.0	16.3
	1900	19100		1	0	23.1	17.4
				1	99	23.1	17.4
				50	25	22.3	16.6
				100	0	22.1	16.4

2 Occupied Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1850.7	18607	1.4	6	0	1.100	Fig.1	1.112	Fig.2	1.112	Fig.3

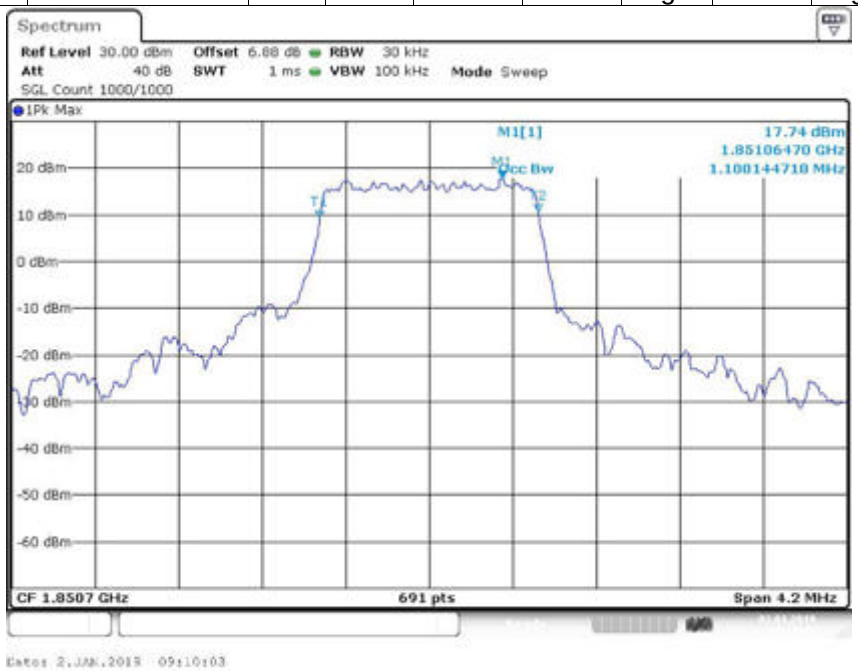


Fig.1

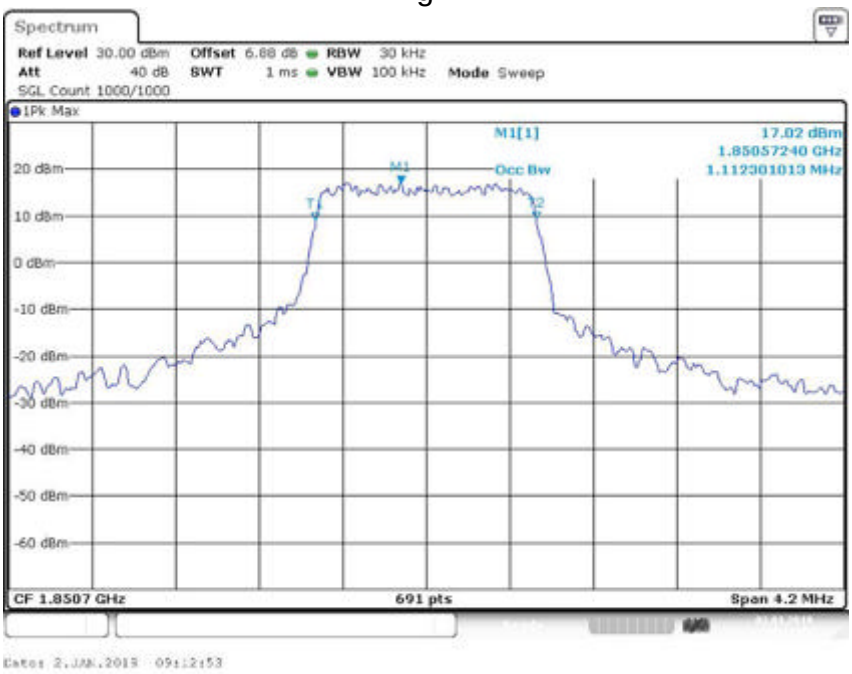


Fig.2

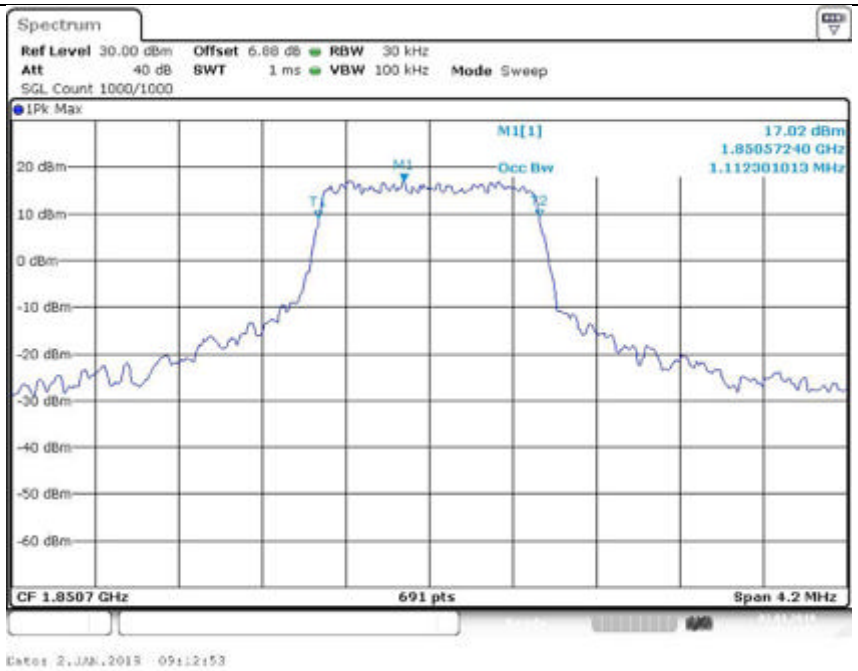


Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	1.4	6	0	1.100	Fig.1	1.106	Fig.2	1.106	Fig.3

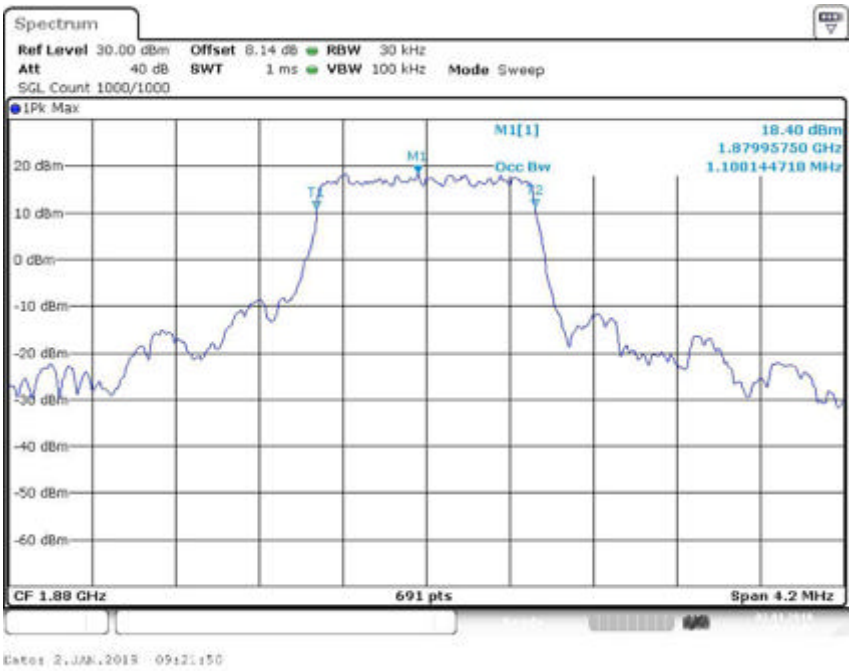


Fig.1

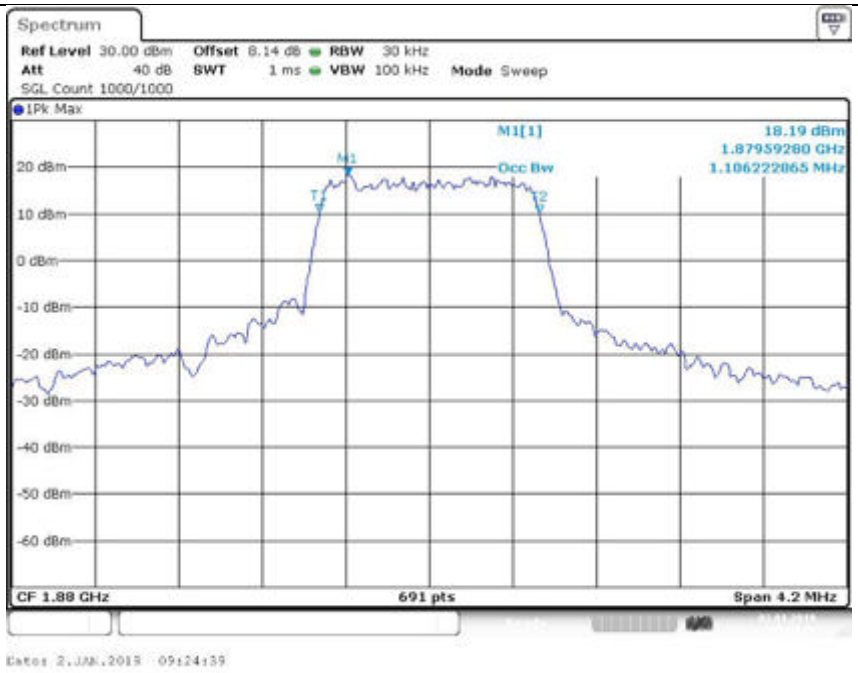

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 30 kHz
Att 40 dB SWT 1 ms VBW 100 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 18.19 dBm
1.87959280 GHz
1.106222065 MHz
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 4.2 MHz

Fig.2

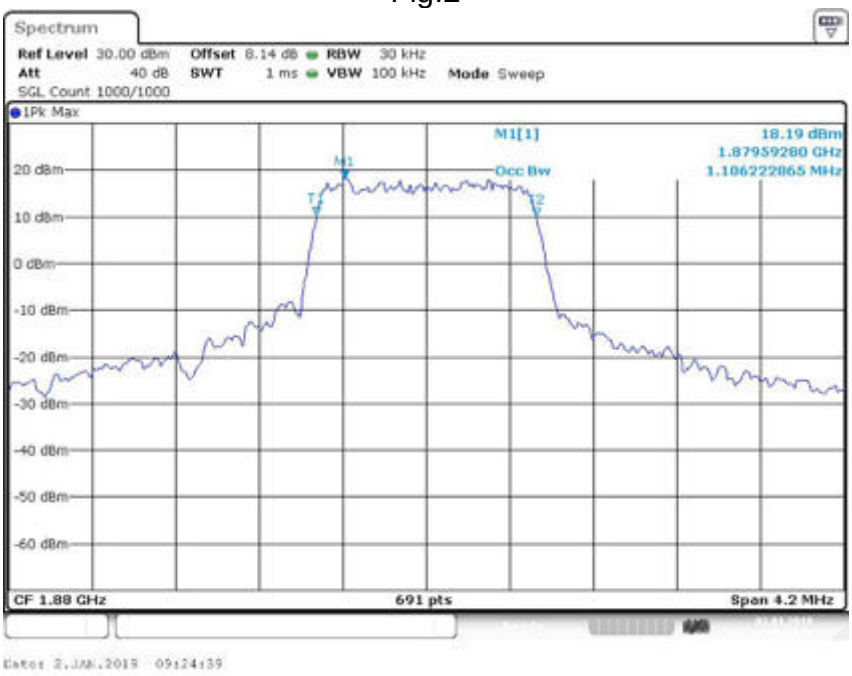

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 30 kHz
Att 40 dB SWT 1 ms VBW 100 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 18.19 dBm
1.87959280 GHz
1.106222065 MHz
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 4.2 MHz

Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1909.3	19193	1.4	6	0	1.106	Fig.1	1.100	Fig.2	1.100	Fig.3

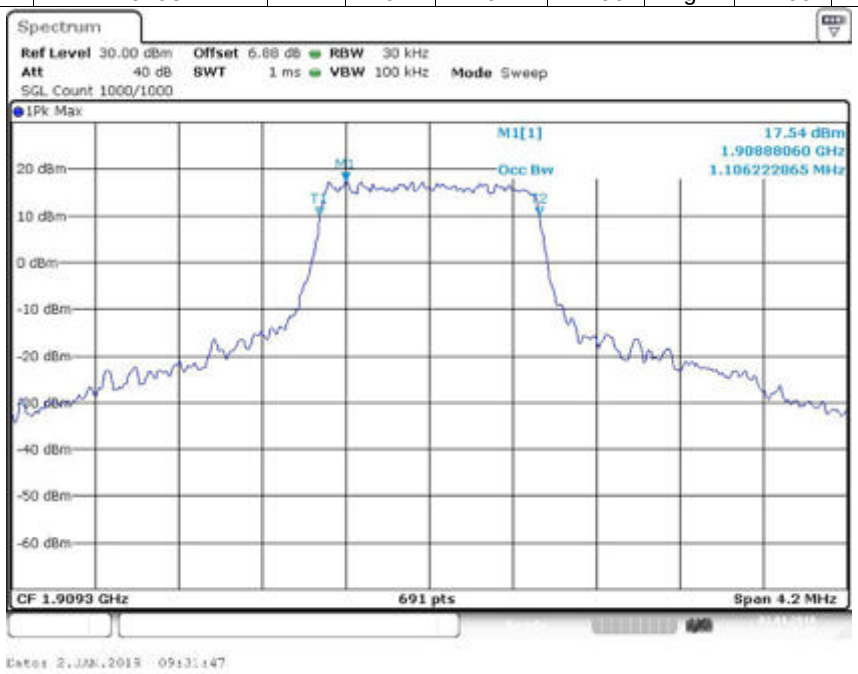


Fig.1

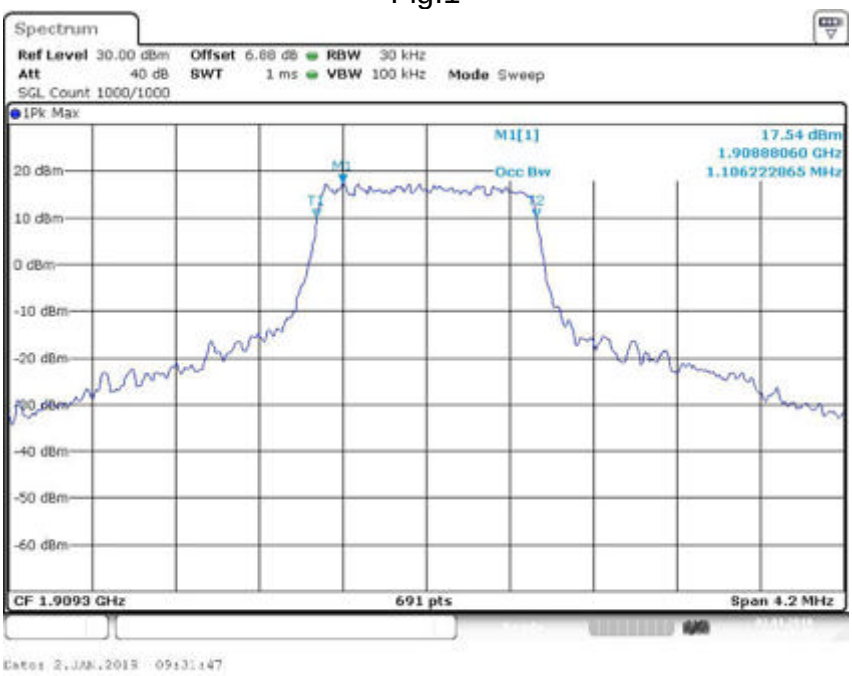


Fig.2

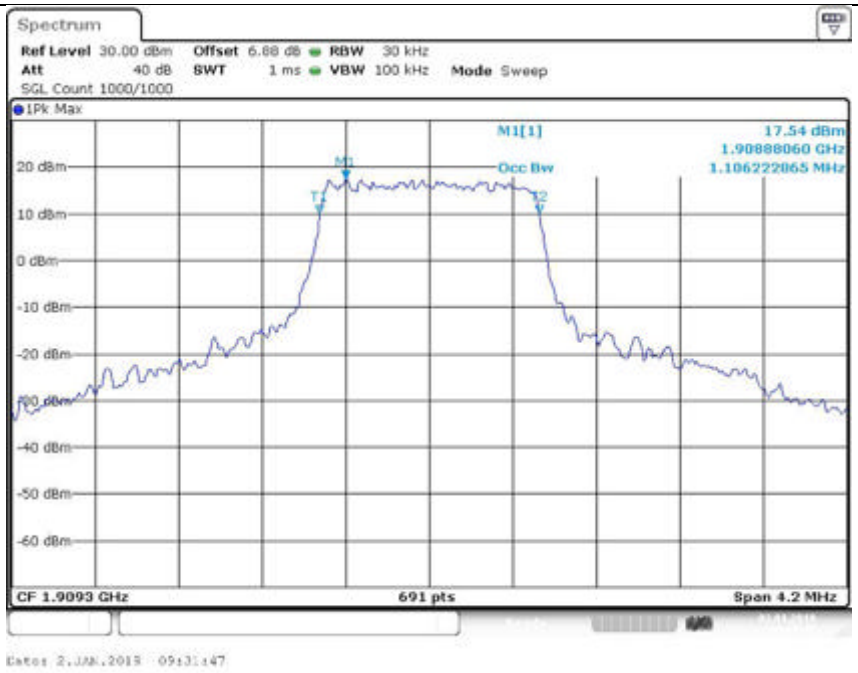


Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1851.5	18615	3	15	0	2.774	Fig.1	2.774	Fig.2	2.774	Fig.3

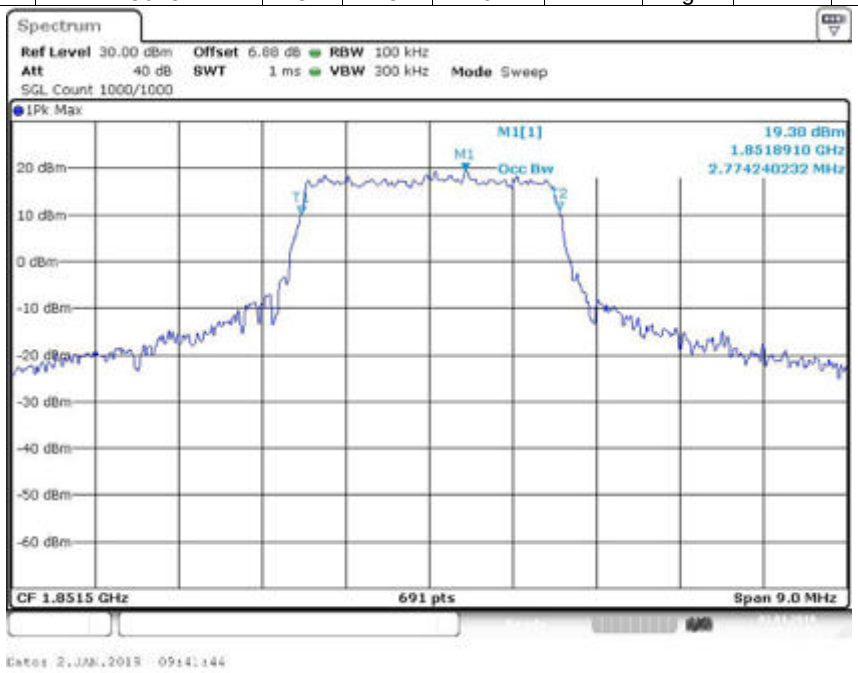


Fig.1

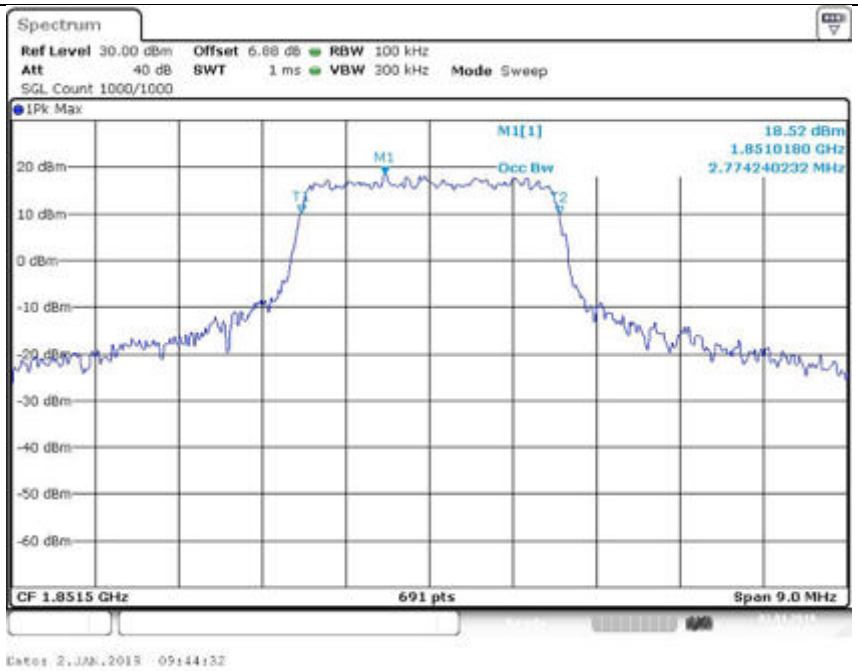
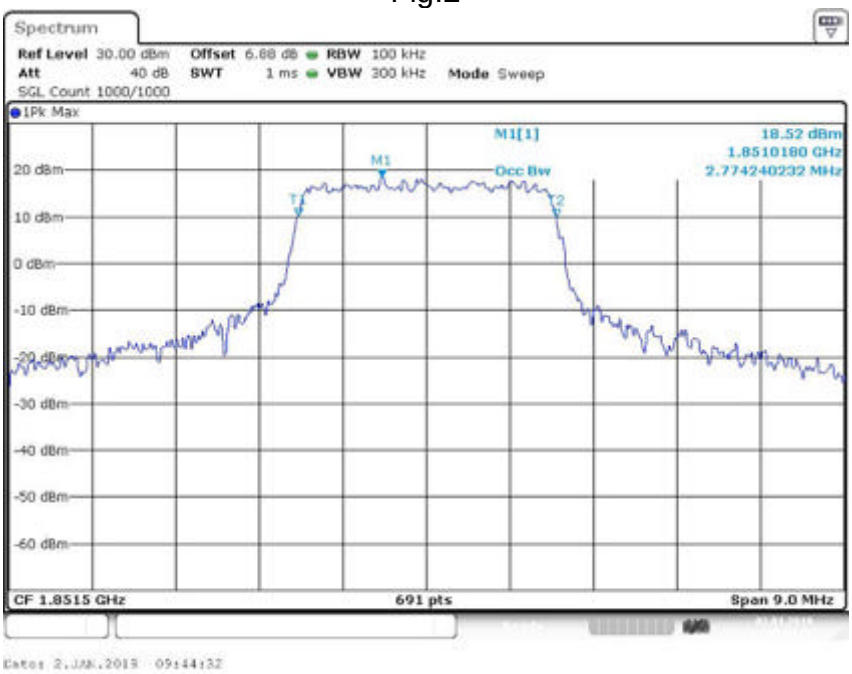

Spectrum
Ref Level 30.00 dBm Offset 6.88 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 18.52 dBm
1.8510180 GHz
2.774240232 MHz
M1
Occ Bw
T1
T2
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.8515 GHz
691 pts
Span 9.0 MHz

Fig.2


Spectrum
Ref Level 30.00 dBm Offset 6.88 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 18.52 dBm
1.8510180 GHz
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M1
Occ Bw
T1
T2
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.8515 GHz
691 pts
Span 9.0 MHz

Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	3	15	0	2.761	Fig.1	2.787	Fig.2	2.787	Fig.3

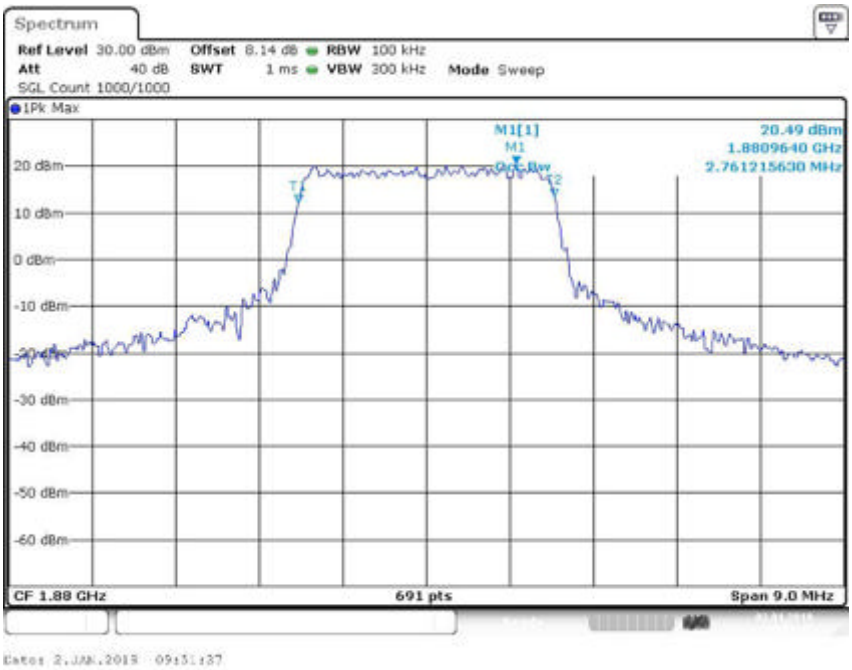


Fig.1

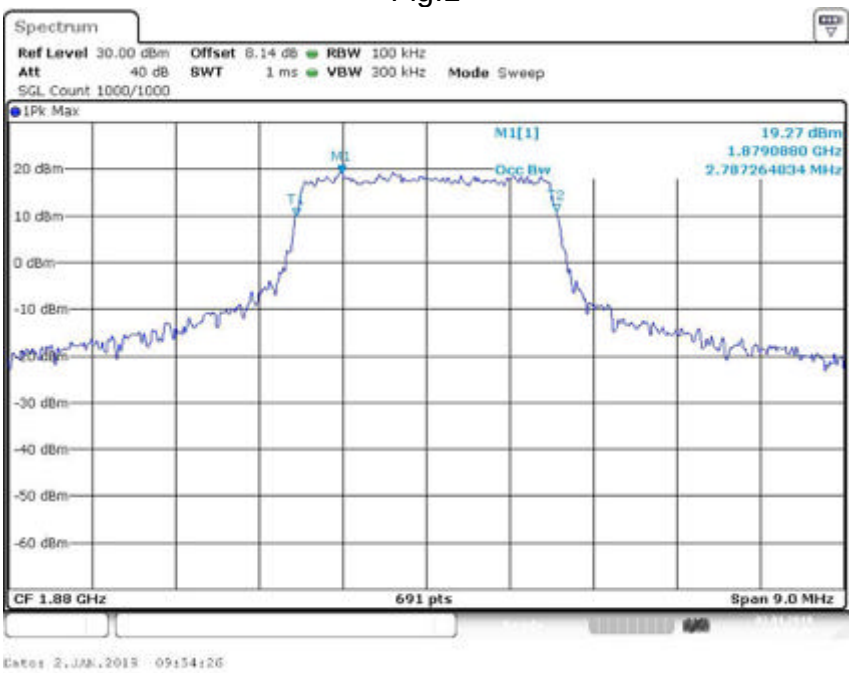


Fig.2

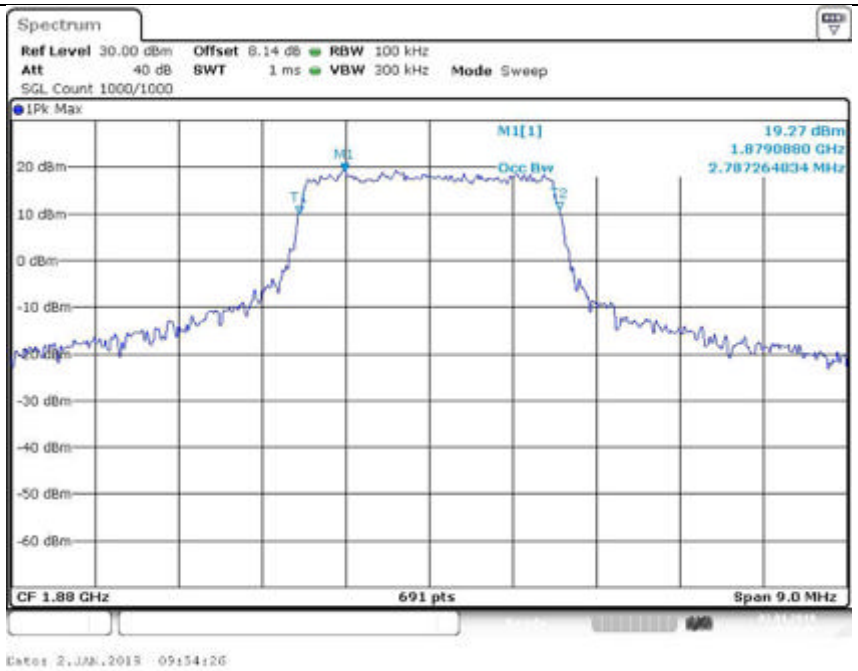


Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1908.5	19185	3	15	0	2.774	Fig.1	2.774	Fig.2	2.774	Fig.3

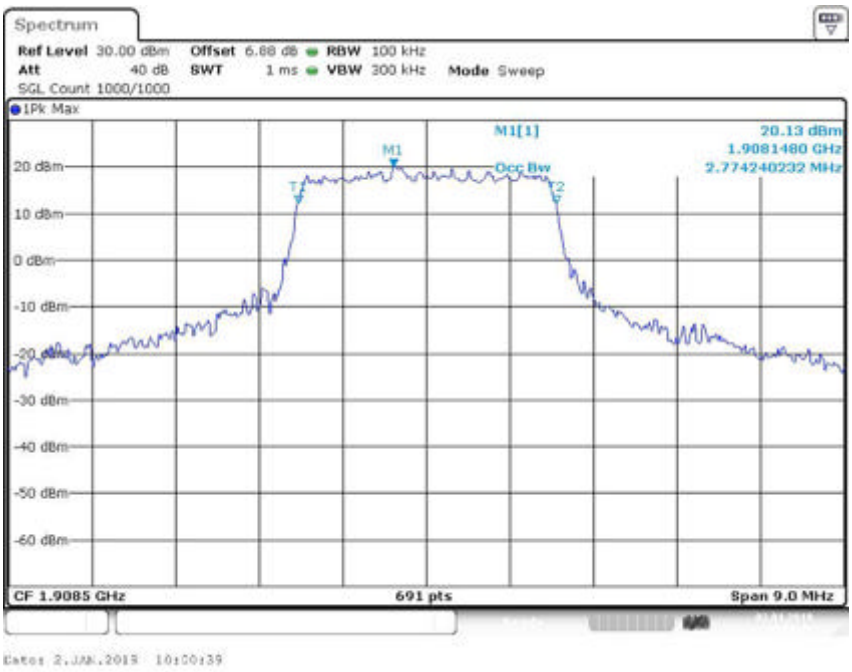
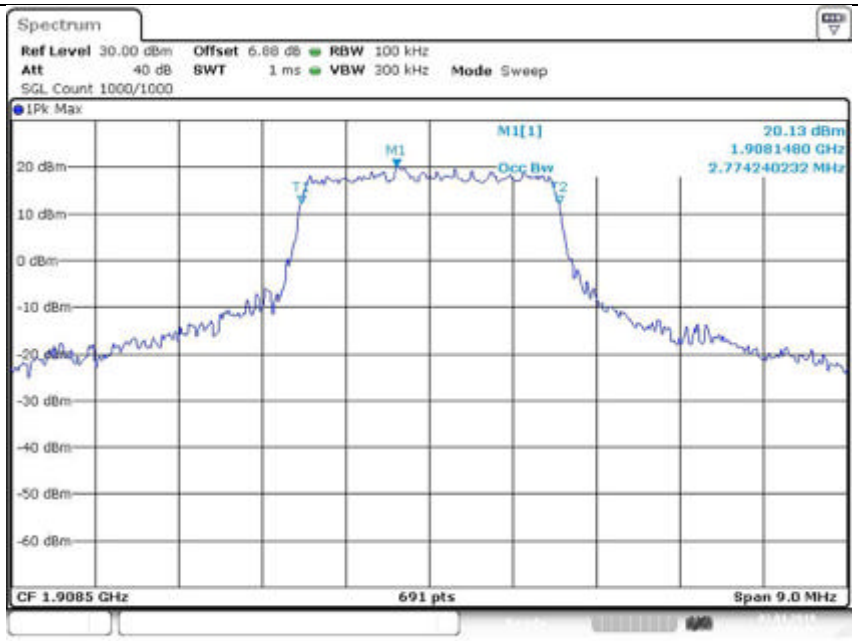
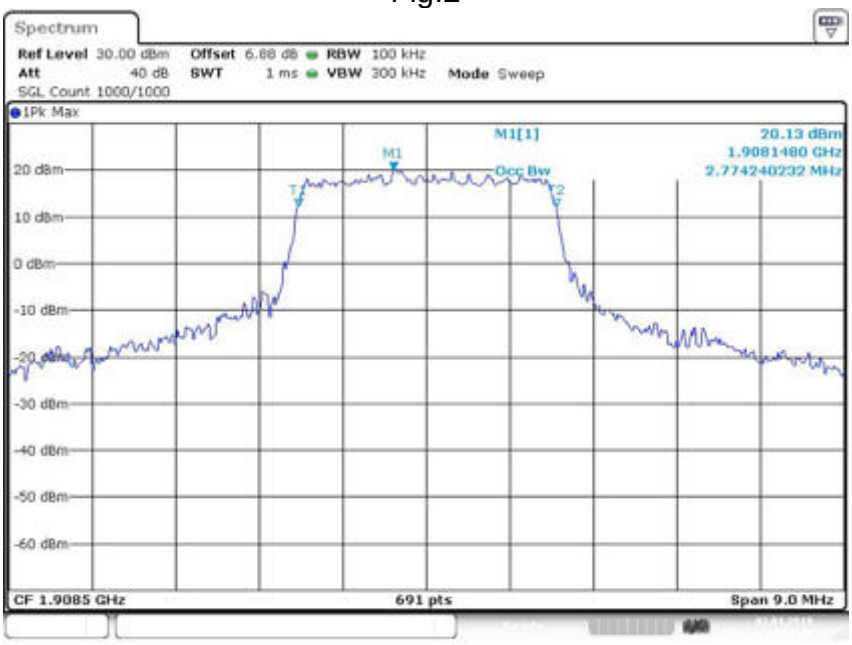


Fig.1



Date: 2.JAN.2018 10:00:39

Fig.2



Date: 2.JAN.2018 10:00:39

Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		16-QAM	
2	1852.5	18625	5	25	0	4.559	Fig.4	4.515	Fig.8	4.515	Fig.8

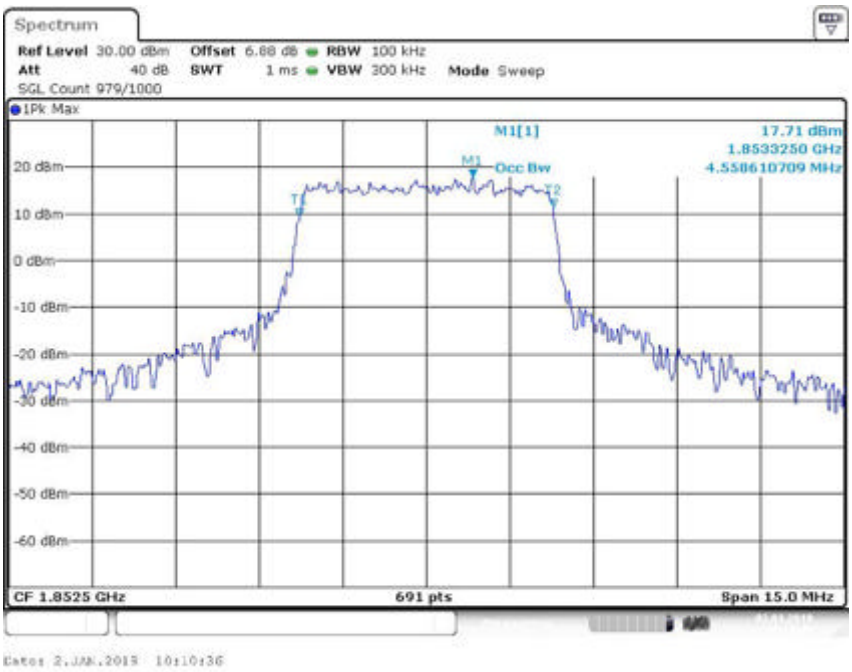


Fig.1

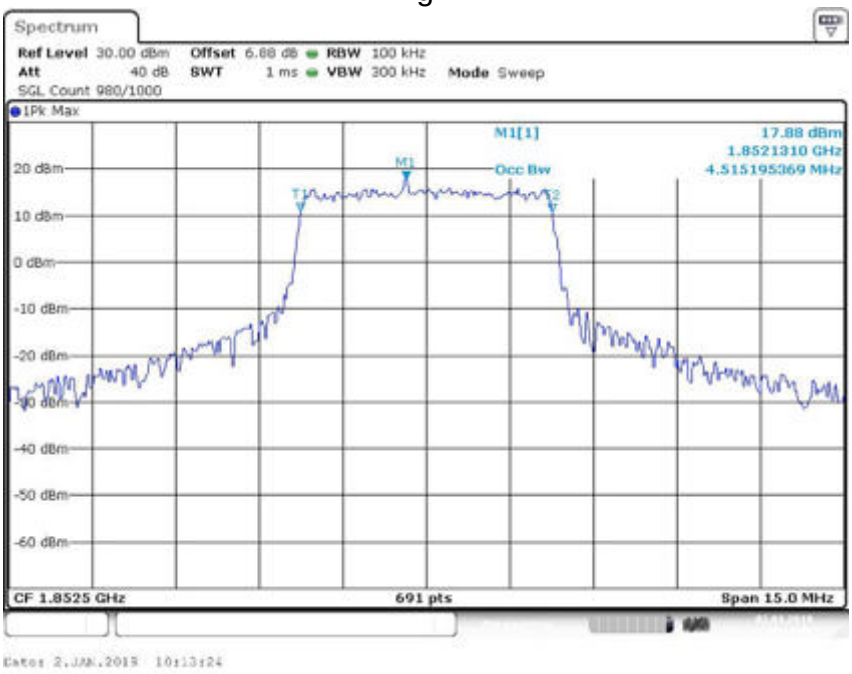


Fig.2

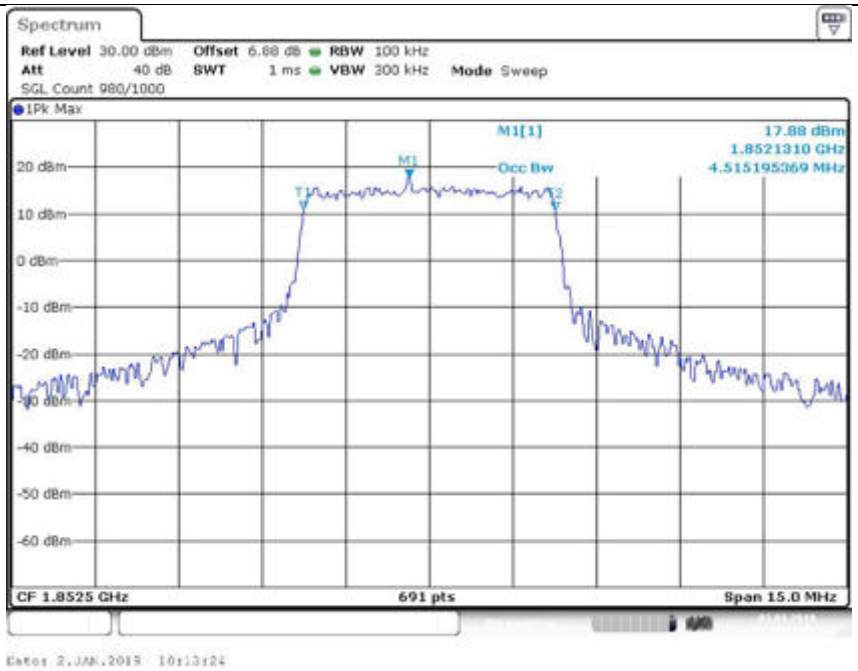


Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	5	25	0	4.515	Fig.1	4.559	Fig.2	4.559	Fig.3

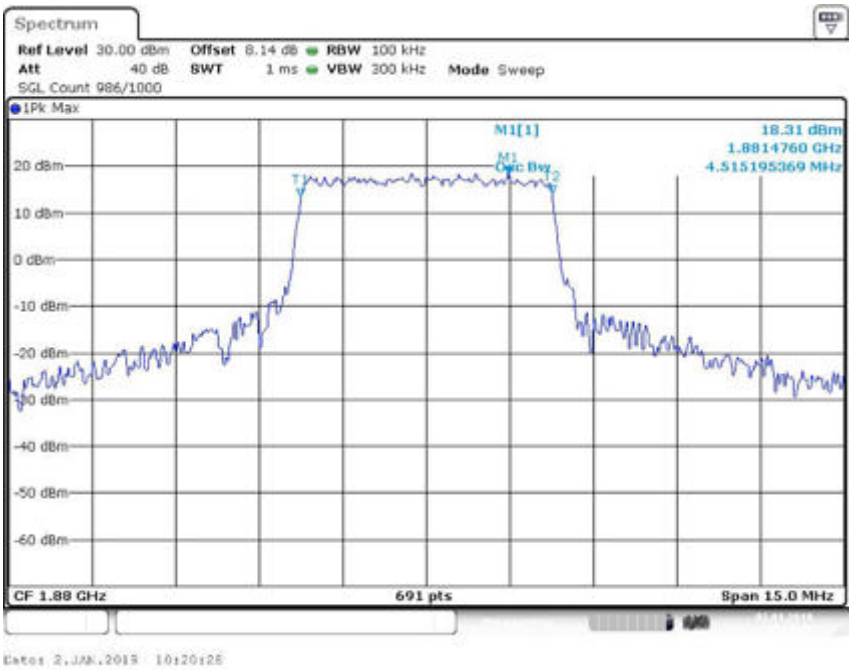


Fig.1

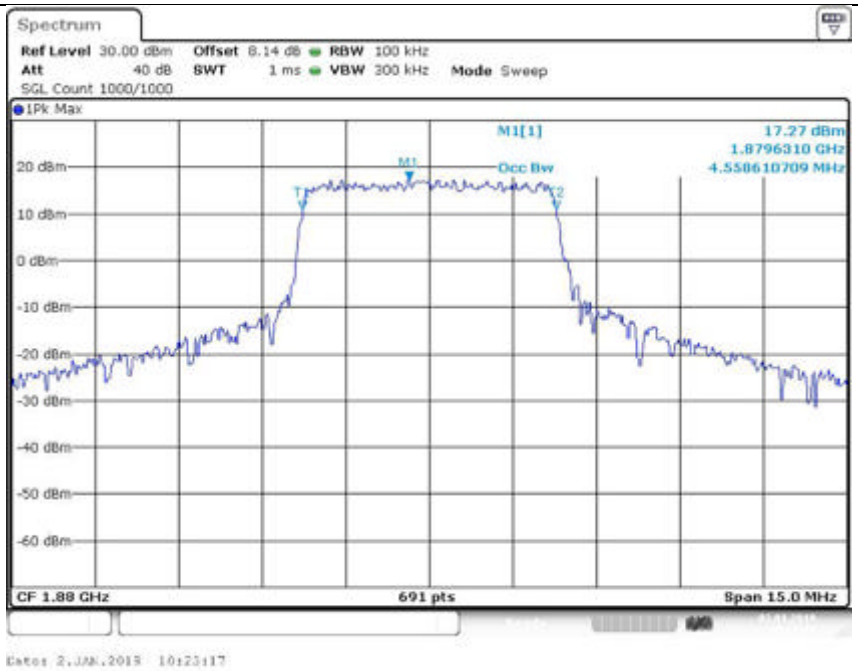
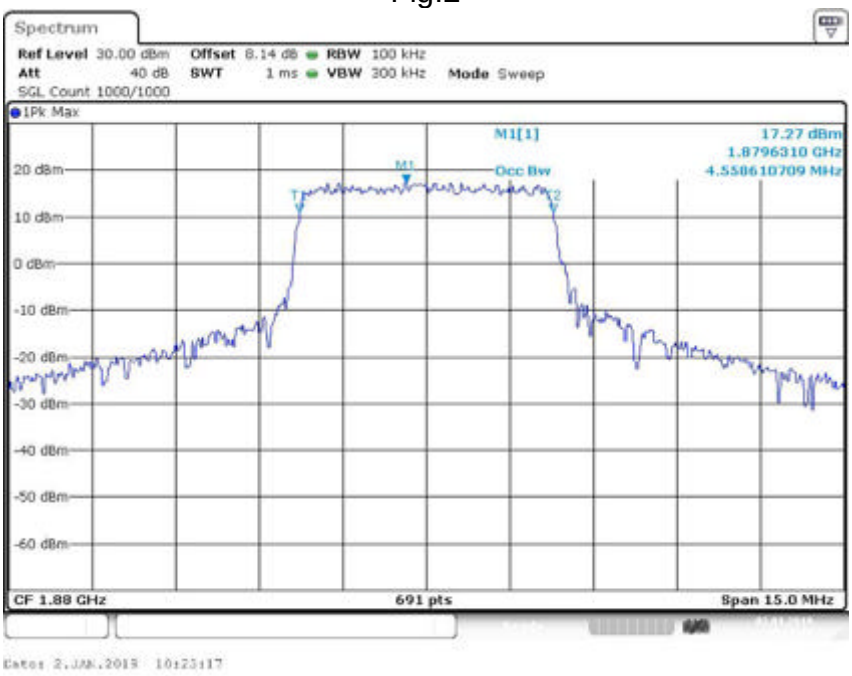

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.27 dBm
1.8796310 GHz
4.558610709 MHz
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 15.0 MHz

Fig.2


Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.27 dBm
1.8796310 GHz
4.558610709 MHz
Occ Bw
20 dBm
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0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 15.0 MHz

Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1907.5	19175	5	25	0	4.515	Fig.1	4.515	Fig.2	4.515	Fig.3

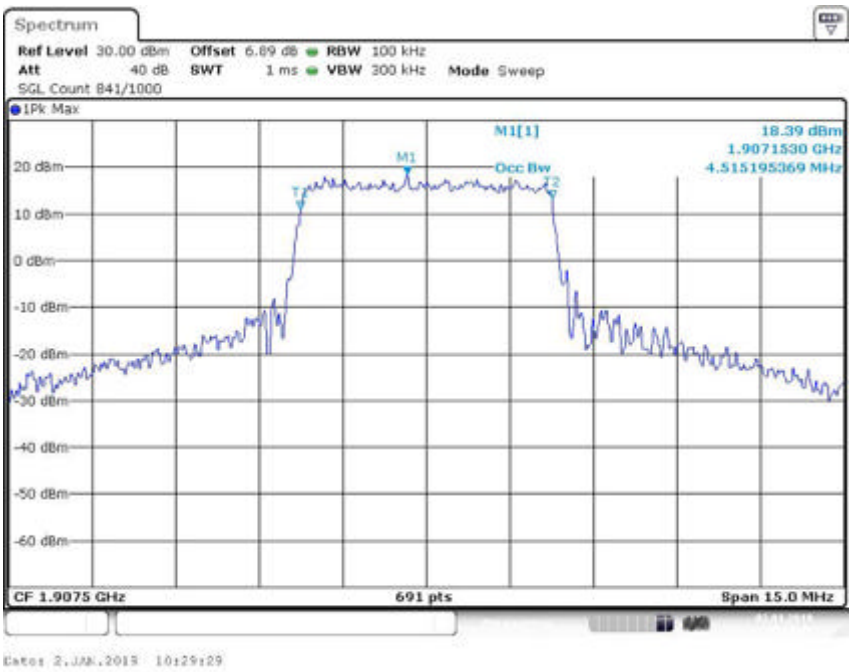


Fig.1

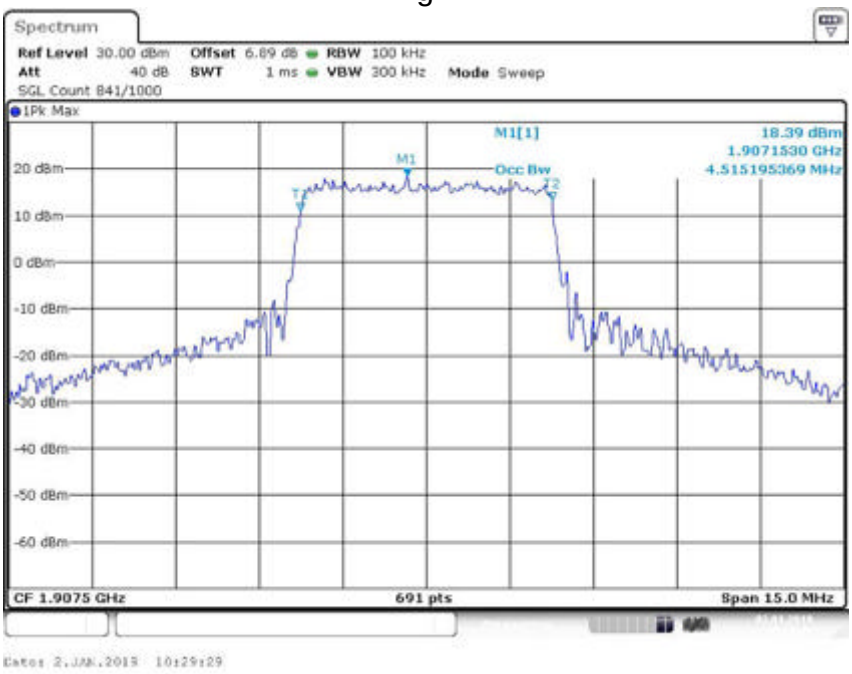


Fig.2

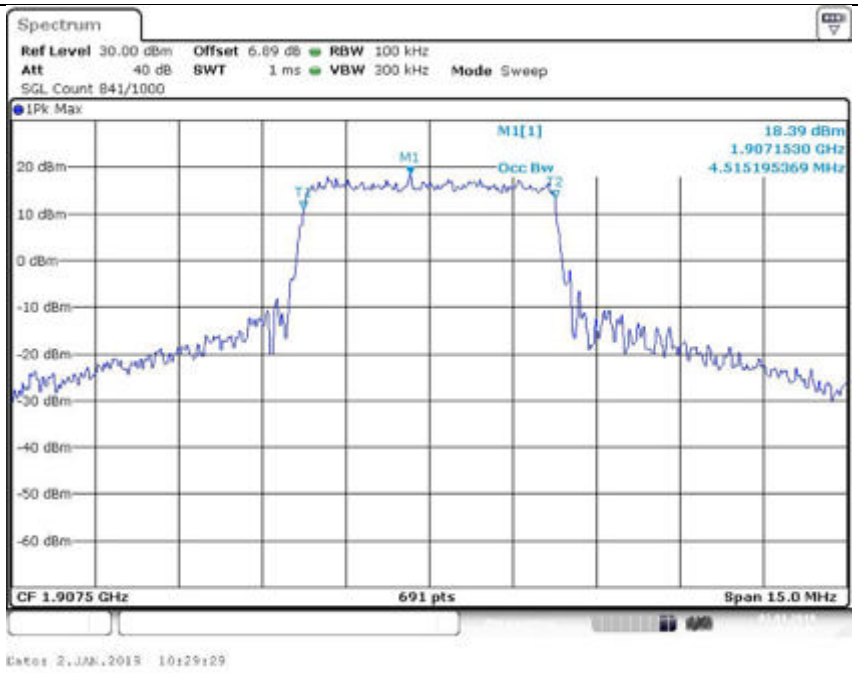


Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1855	18650	10	50	0	9.074	Fig.1	9.074	Fig.2	9.074	Fig.3

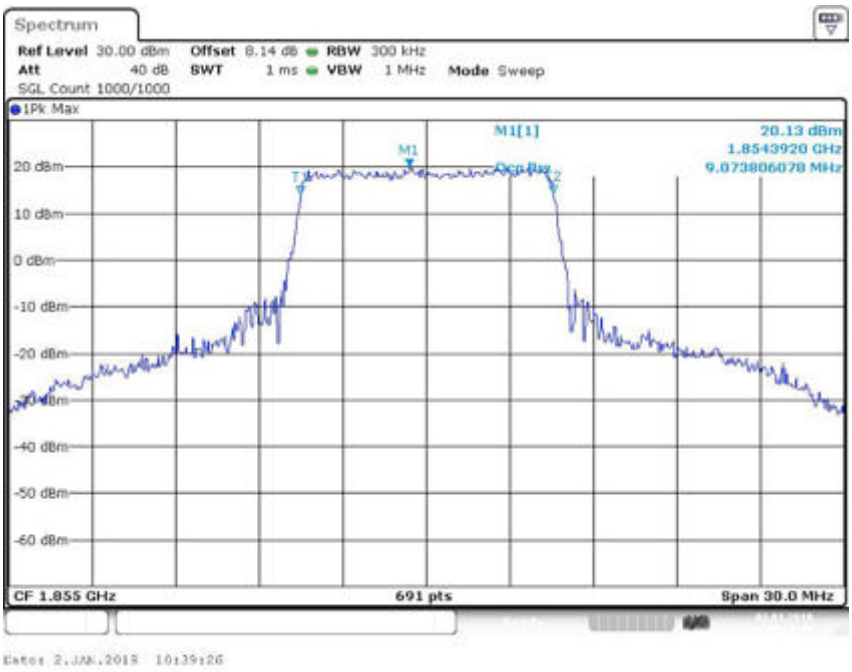


Fig.1

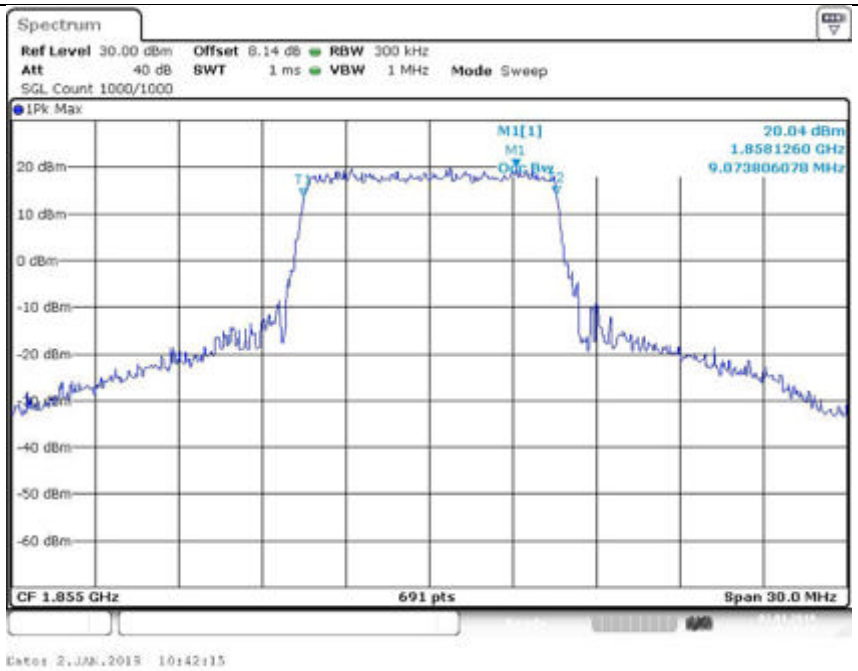
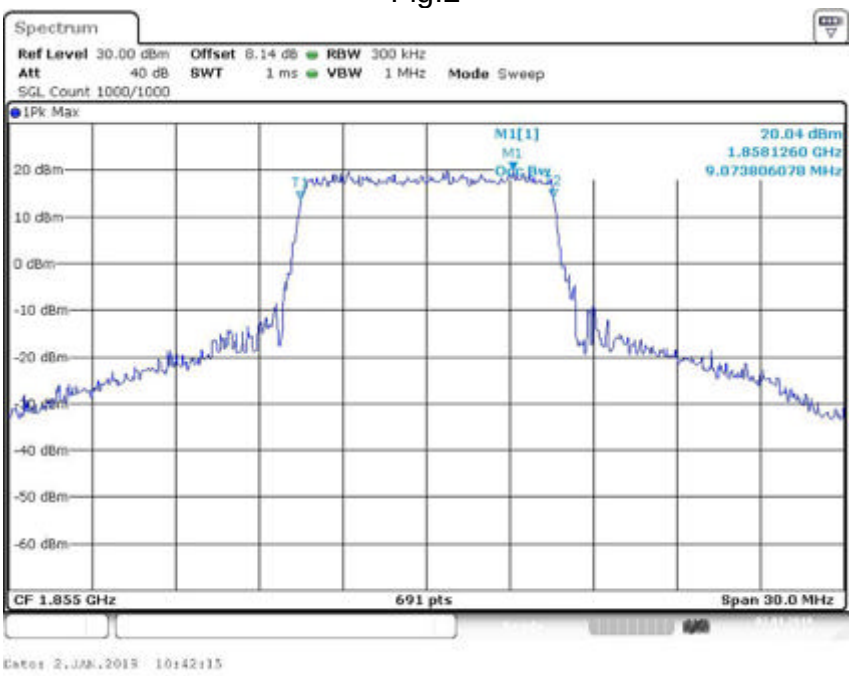

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 20.04 dBm
1.8581260 GHz
9.073806078 MHz
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.855 GHz
691 pts
Span 30.0 MHz

Fig.2


Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 20.04 dBm
1.8581260 GHz
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20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.855 GHz
691 pts
Span 30.0 MHz

Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	10	50	0	9.030	Fig.1	9.030	Fig.2	9.030	Fig.3

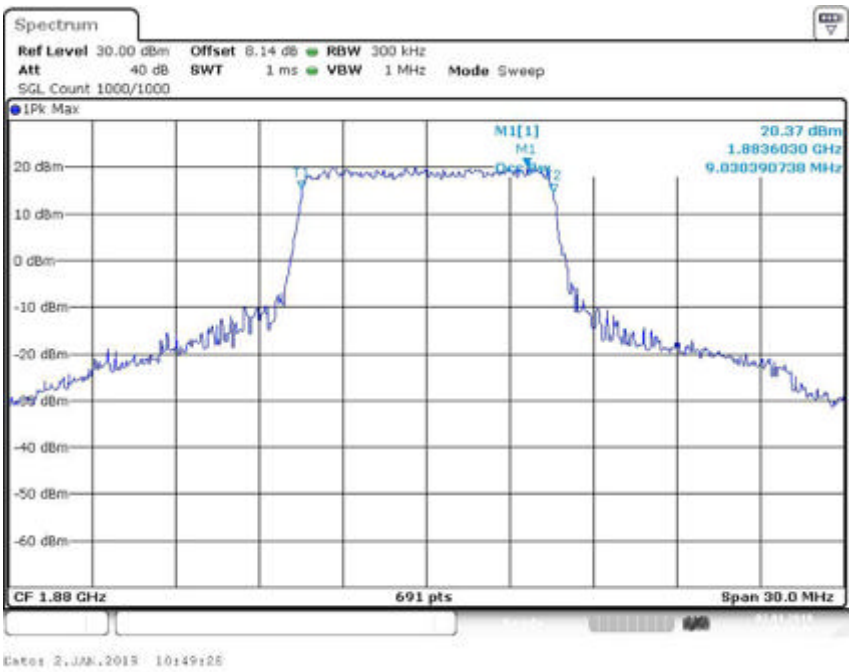


Fig.1

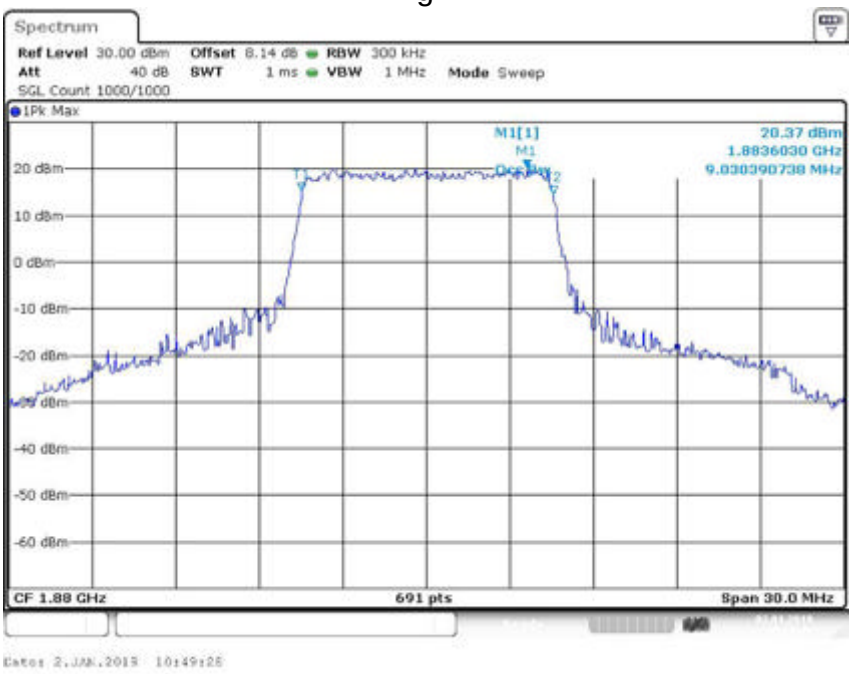


Fig.2

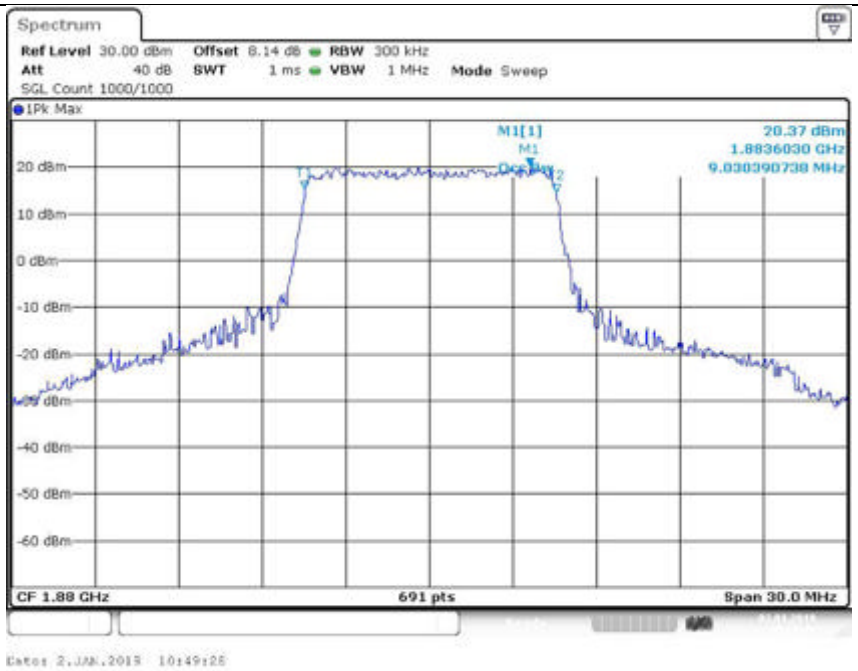


Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1905	19150	10	50	0	9.160	Fig.1	9.160	Fig.2	9.160	Fig.3

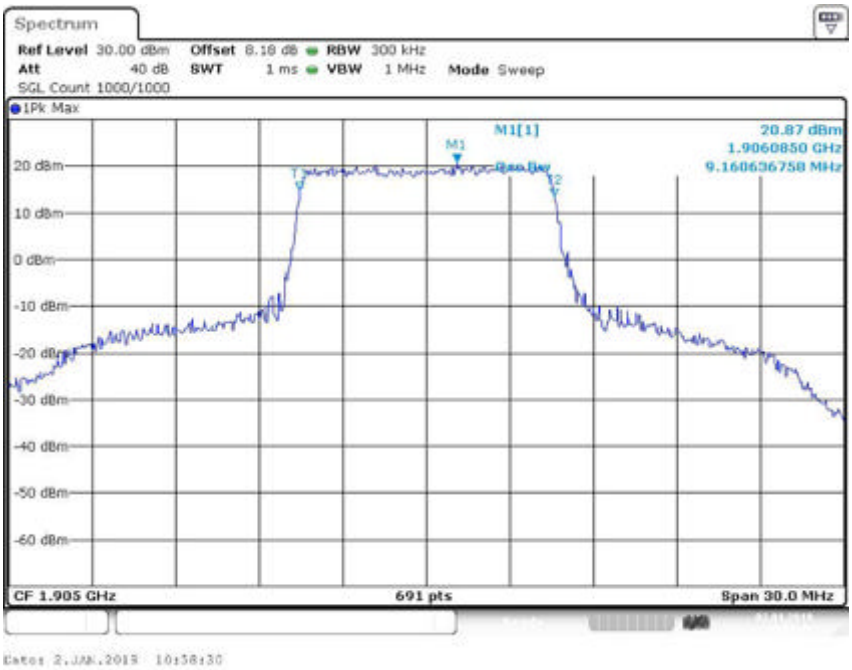


Fig.1

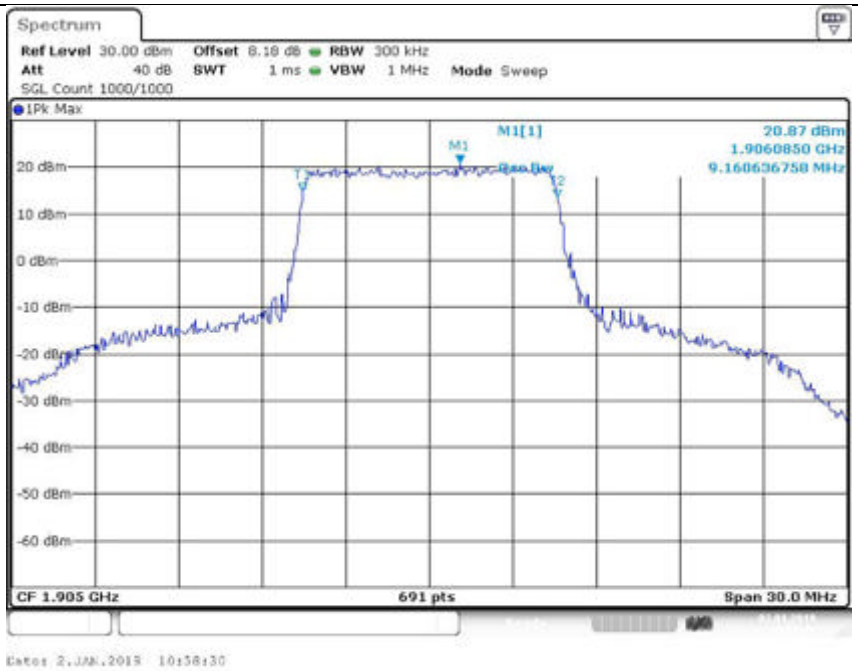
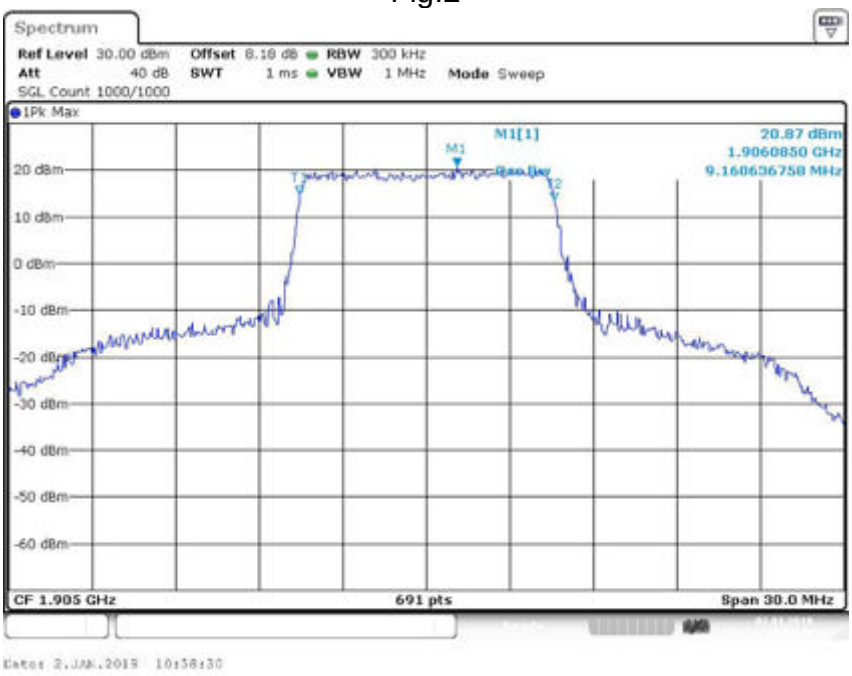

Spectrum
Ref Level 30.00 dBm Offset 8.18 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 20.87 dBm
1.9060850 GHz
9.160636758 MHz
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.905 GHz
691 pts
Span 30.0 MHz

Fig.2


Spectrum
Ref Level 30.00 dBm Offset 8.18 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 20.87 dBm
1.9060850 GHz
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0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.905 GHz
691 pts
Span 30.0 MHz

Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1857.5	18675	15	75	0	13.546	Fig.1	13.546	Fig.2	13.546	Fig.3

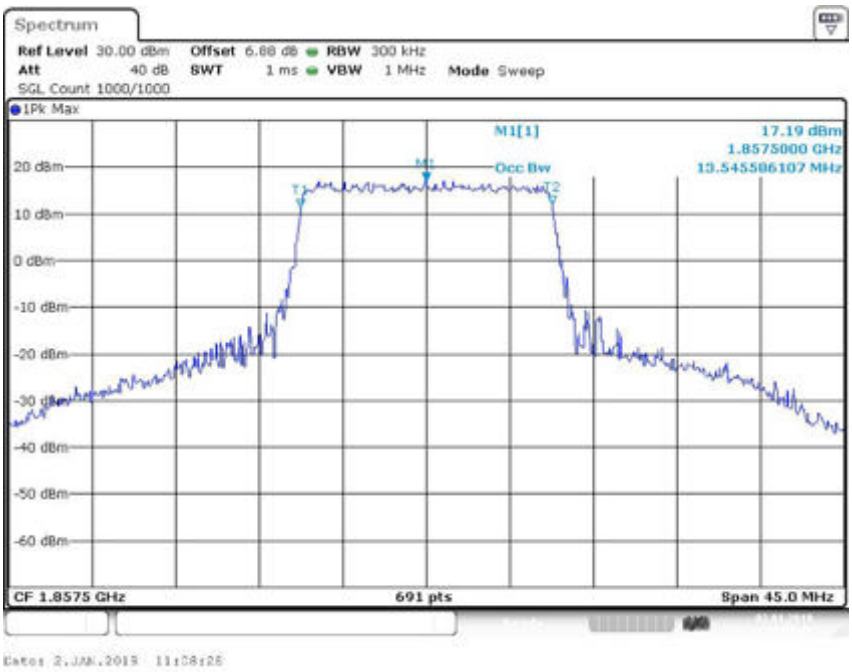


Fig.1

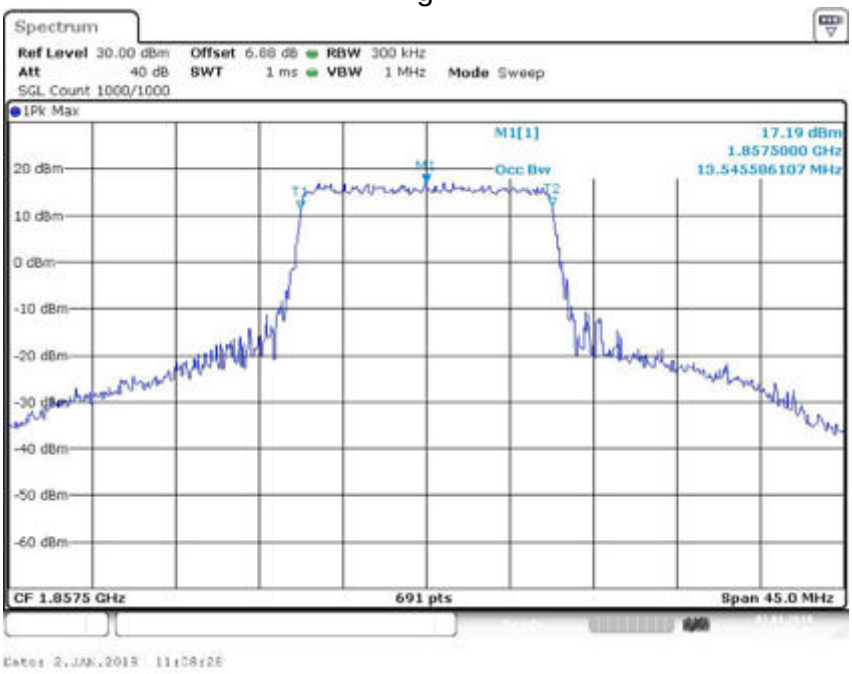


Fig.2

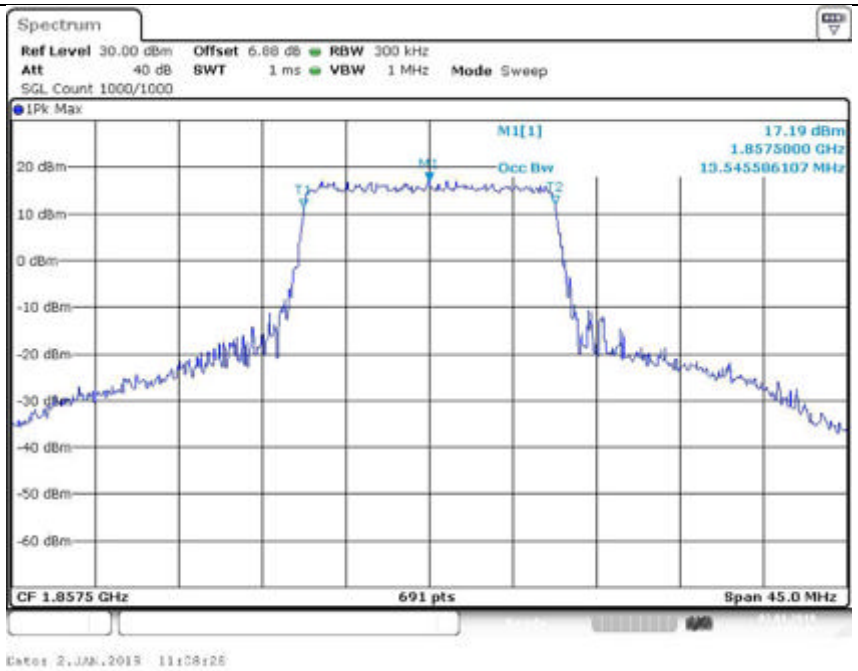


Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	15	75	0	13.546	Fig.1	13.480	Fig.2	13.480	Fig.3

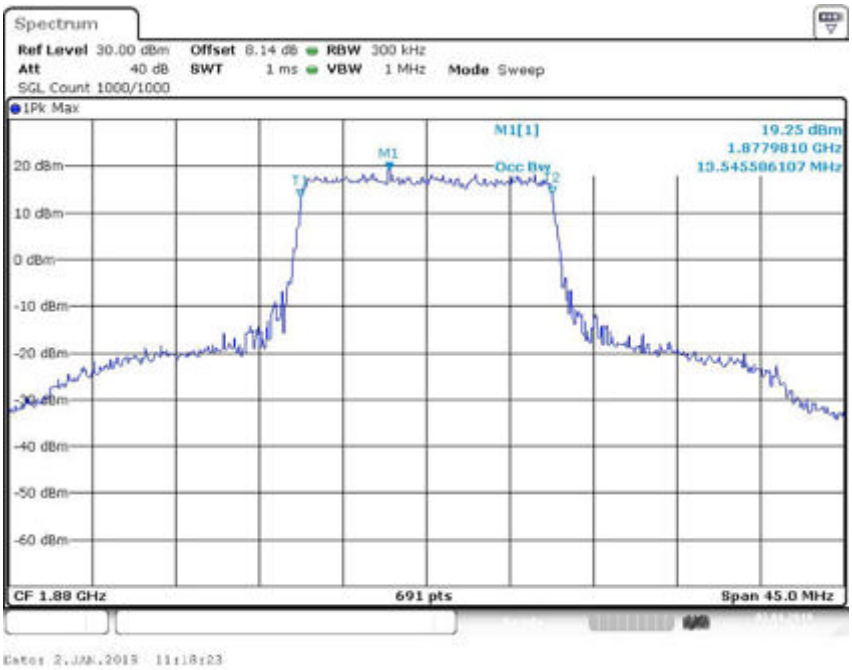


Fig.1

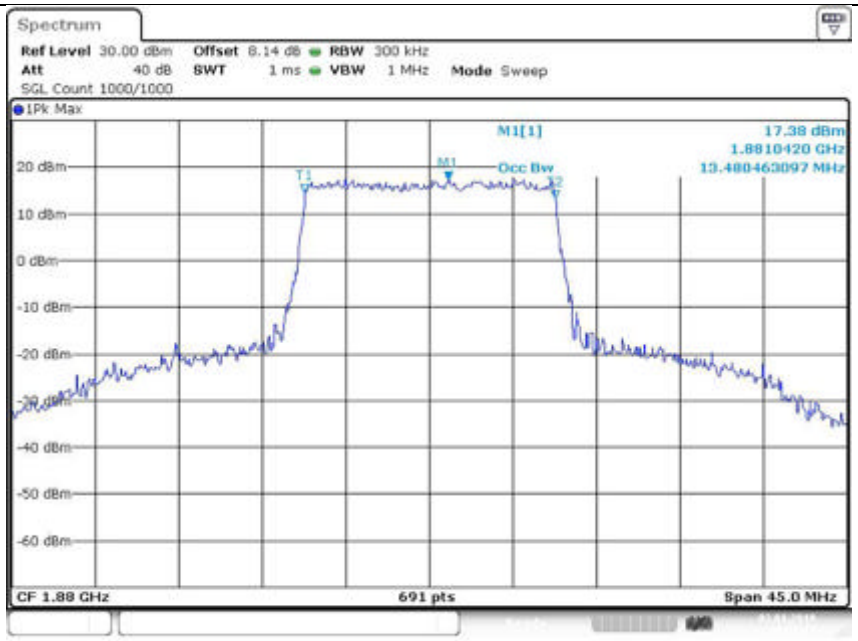

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.38 dBm
1.8810420 GHz
13.480463097 MHz
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 45.0 MHz

Fig.2

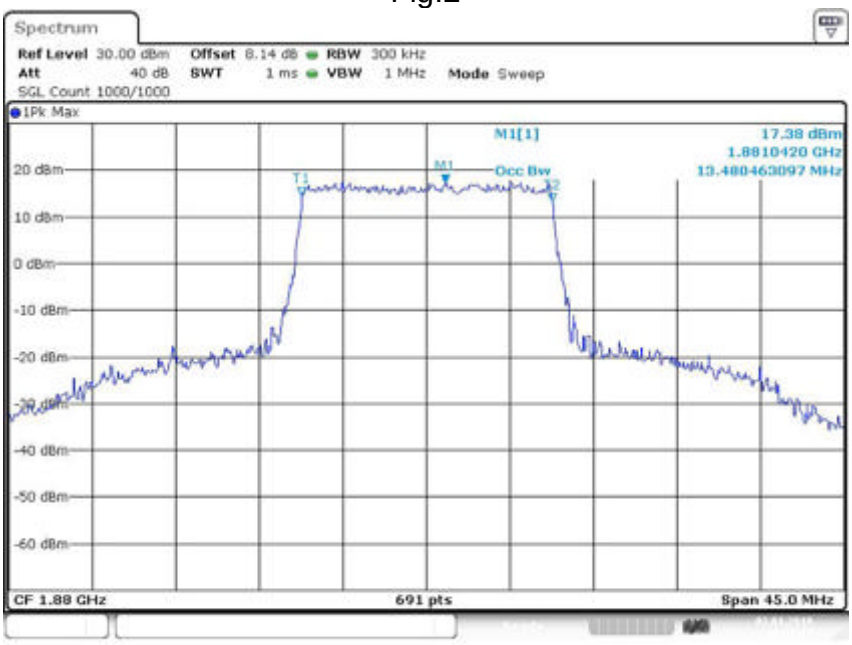

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.38 dBm
1.8810420 GHz
13.480463097 MHz
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 45.0 MHz

Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1902.5	19125	15	75	0	13.480	Fig.1	13.480	Fig.2	13.480	Fig.3

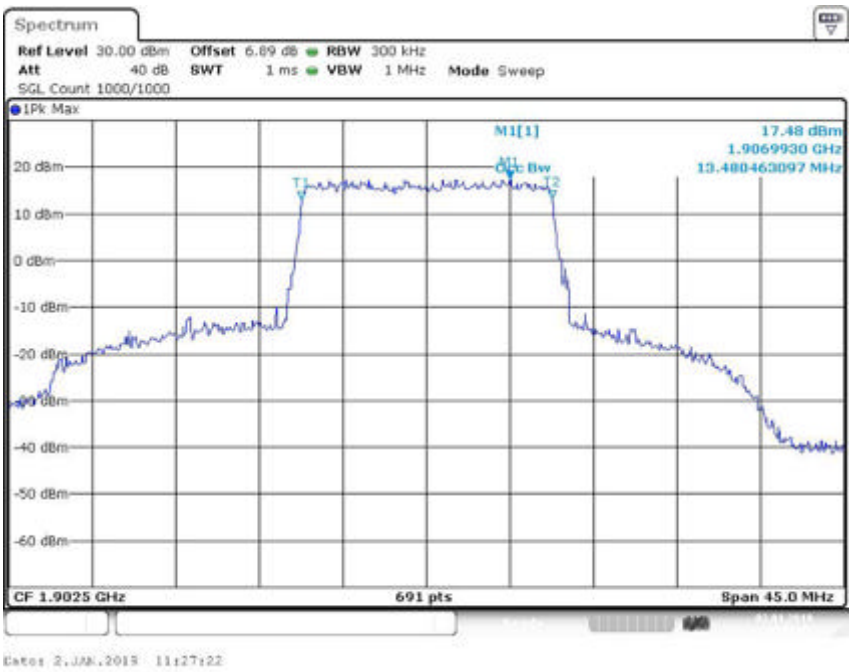


Fig.1

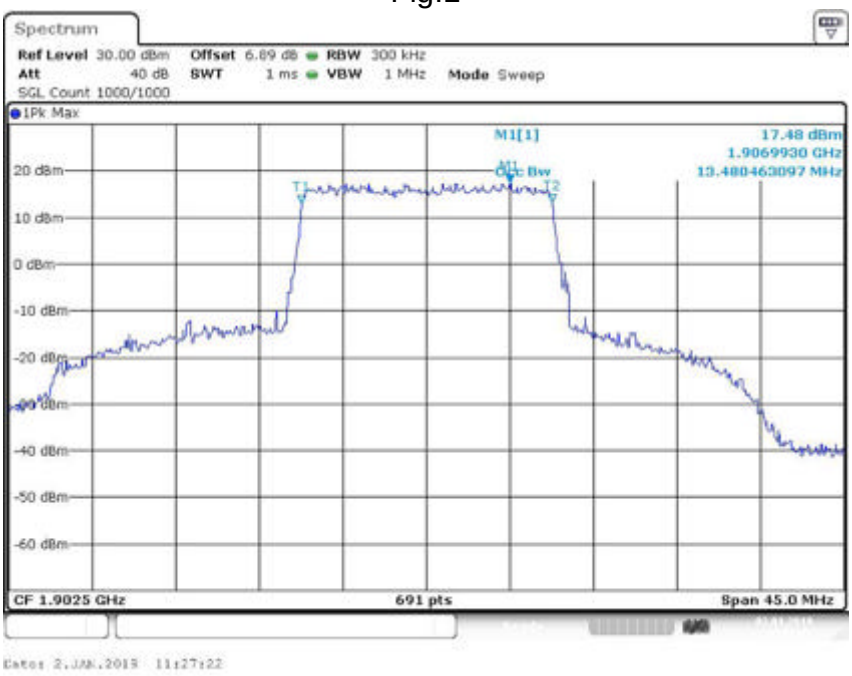


Fig.1

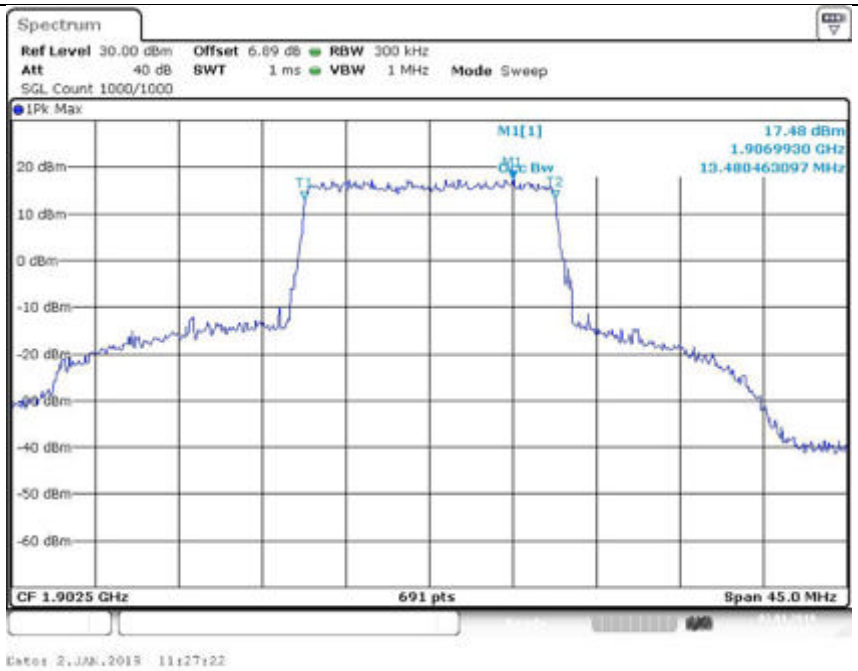


Fig.2

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1860	18700	20	100	0	17.974	Fig.1	17.974	Fig.2	17.974	Fig.3

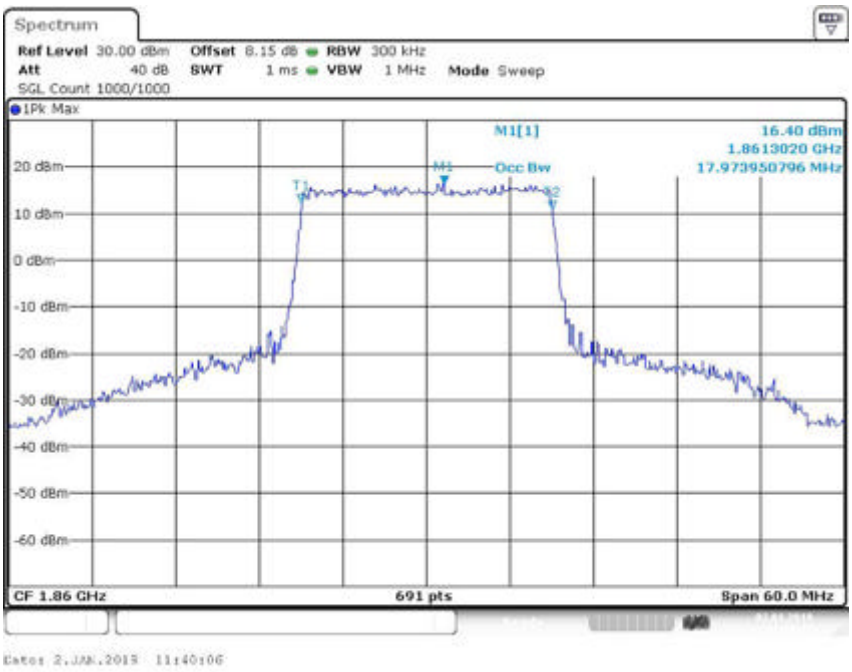


Fig.1

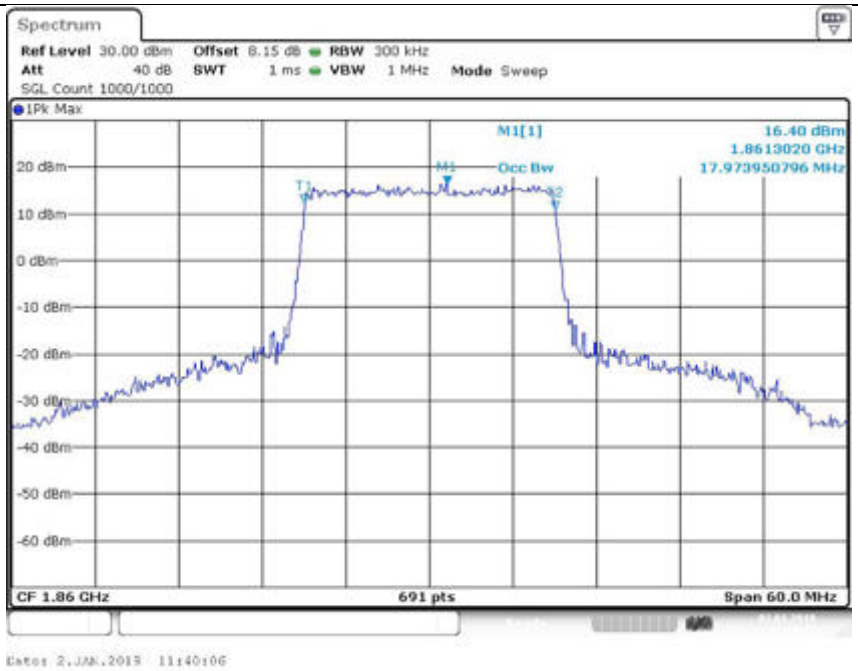

Spectrum
Ref Level 30.00 dBm Offset 8.15 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 16.40 dBm
1.8613020 GHz
17.973950796 MHz
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.86 GHz
691 pts
Span 60.0 MHz

Fig.2

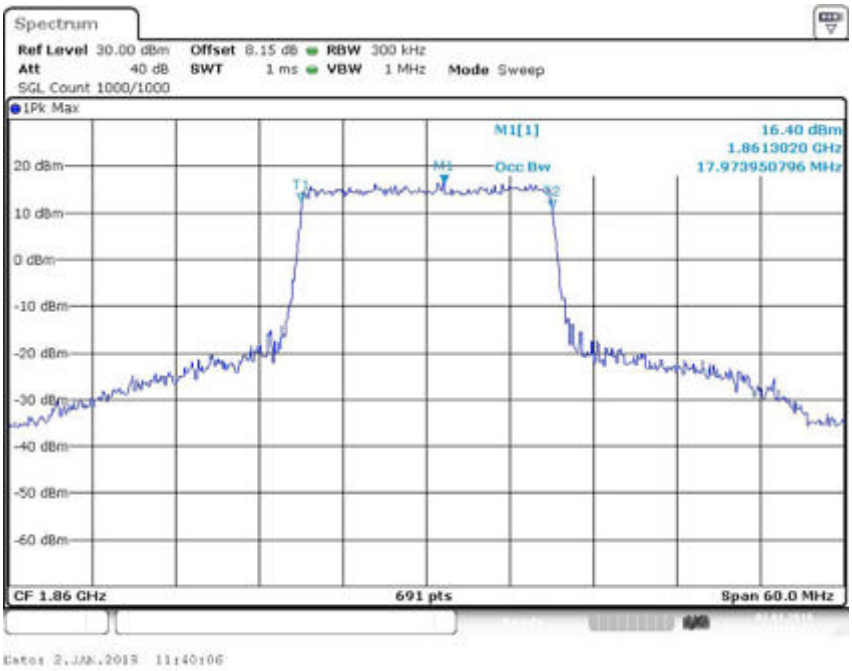

Spectrum
Ref Level 30.00 dBm Offset 8.15 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 16.40 dBm
1.8613020 GHz
17.973950796 MHz
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.86 GHz
691 pts
Span 60.0 MHz

Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	20	100	0	17.887	Fig.4	17.974	Fig.8	17.887	Fig.4

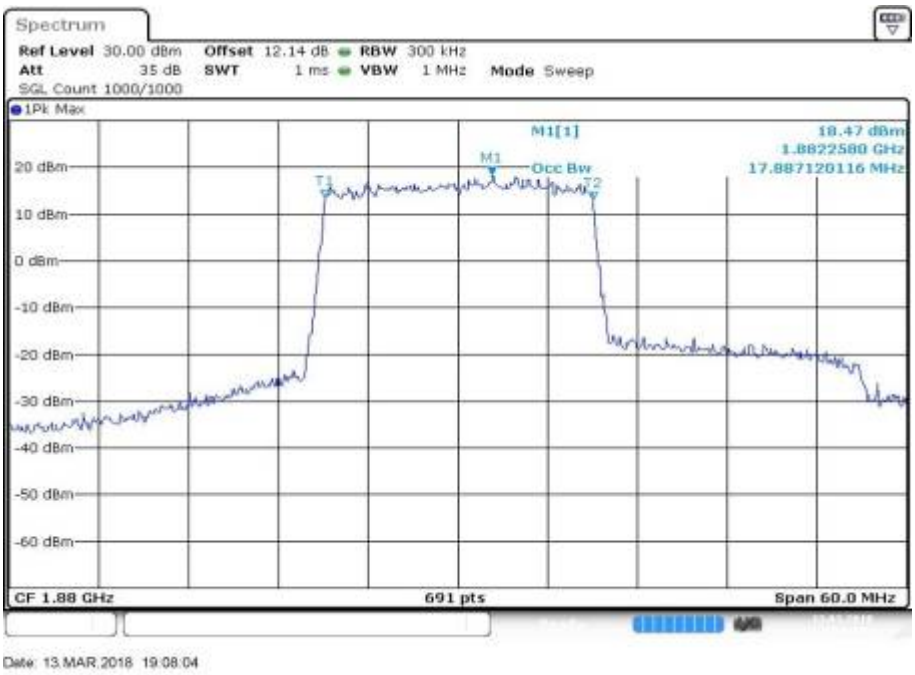


Fig.4

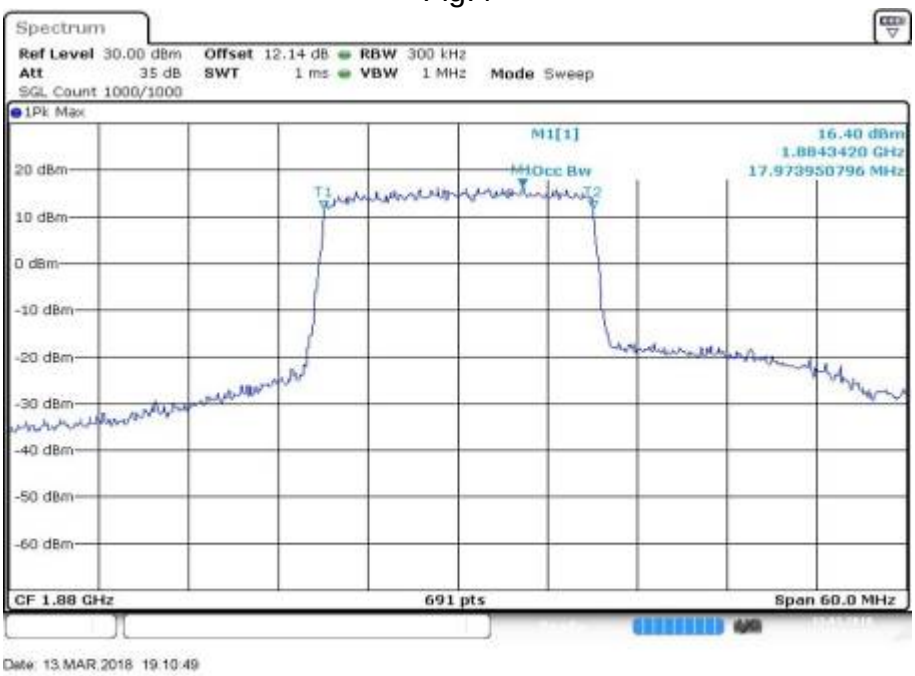


Fig.8

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1900	19100	20	100	0	17.974	Fig.1	17.974	Fig.2	17.974	Fig.3

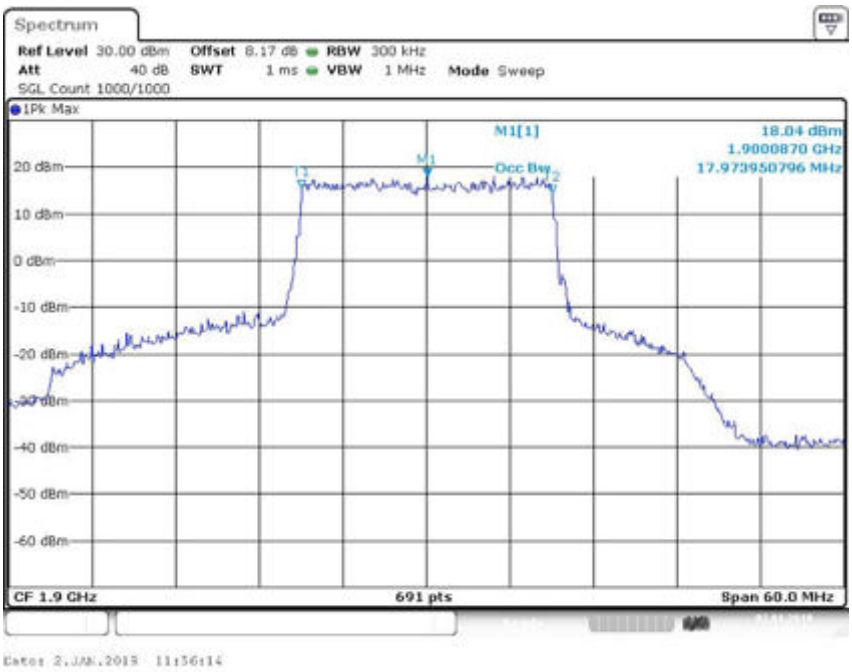


Fig.1

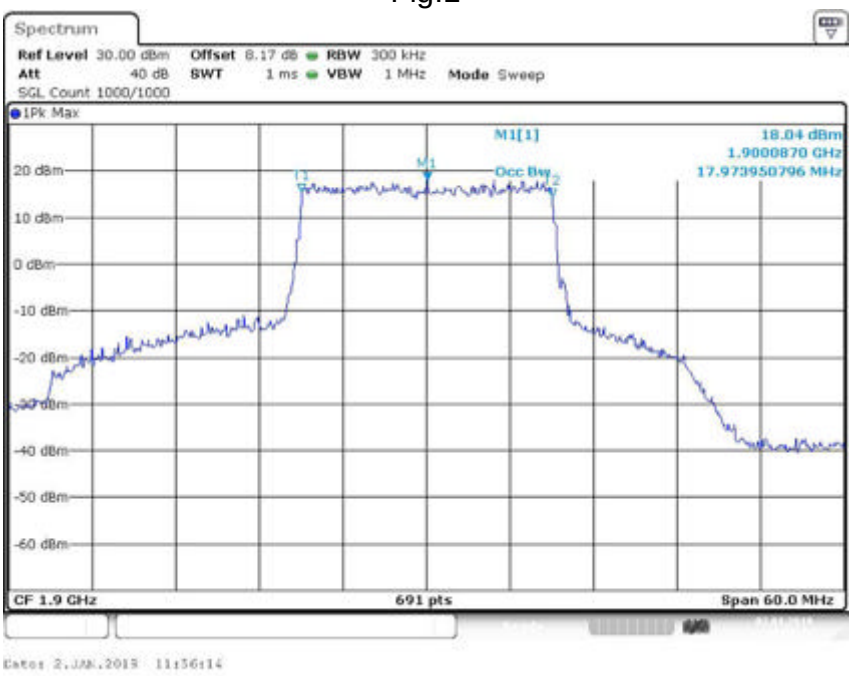


Fig.2

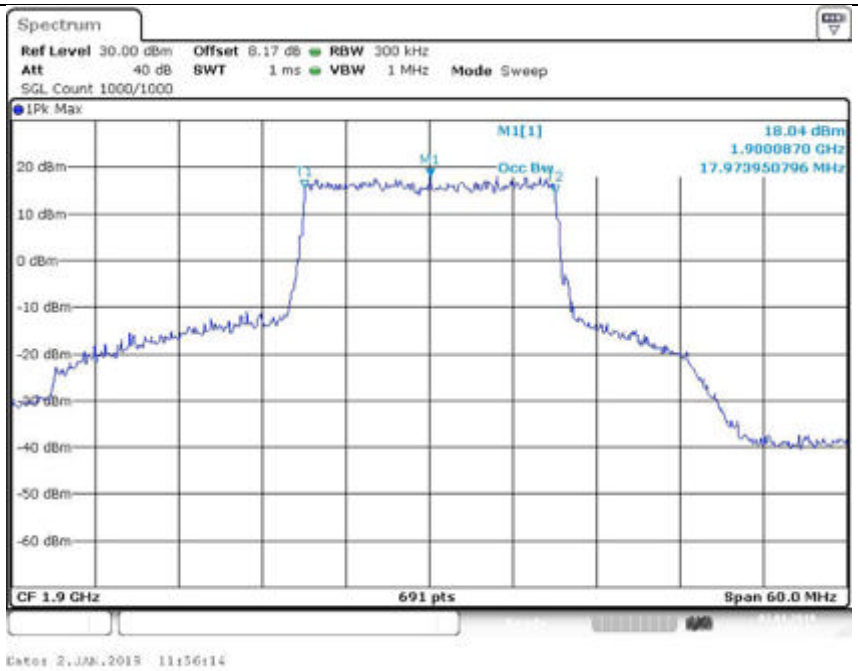

Spectrum
Ref Level 30.00 dBm Offset 8.17 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 18.04 dBm
1.9000870 GHz
17.973950796 MHz
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.9 GHz
691 pts
Span 60.0 MHz

Fig.3

3 Emission Bandwidth

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1850.7	18607	1.4	6	0	1.2946	Fig.1	1.2946	Fig.2	1.2946	Fig.3

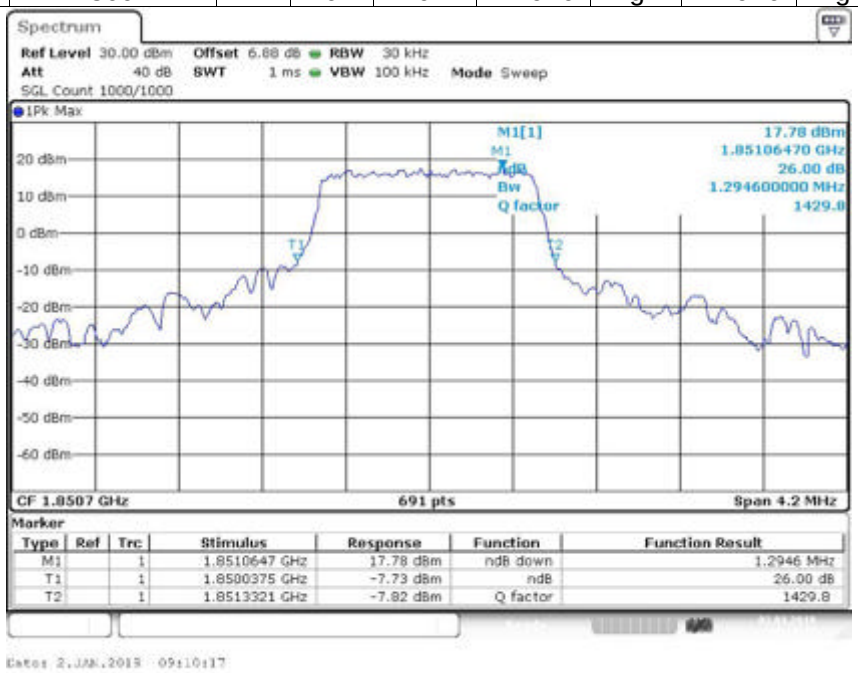


Fig.1

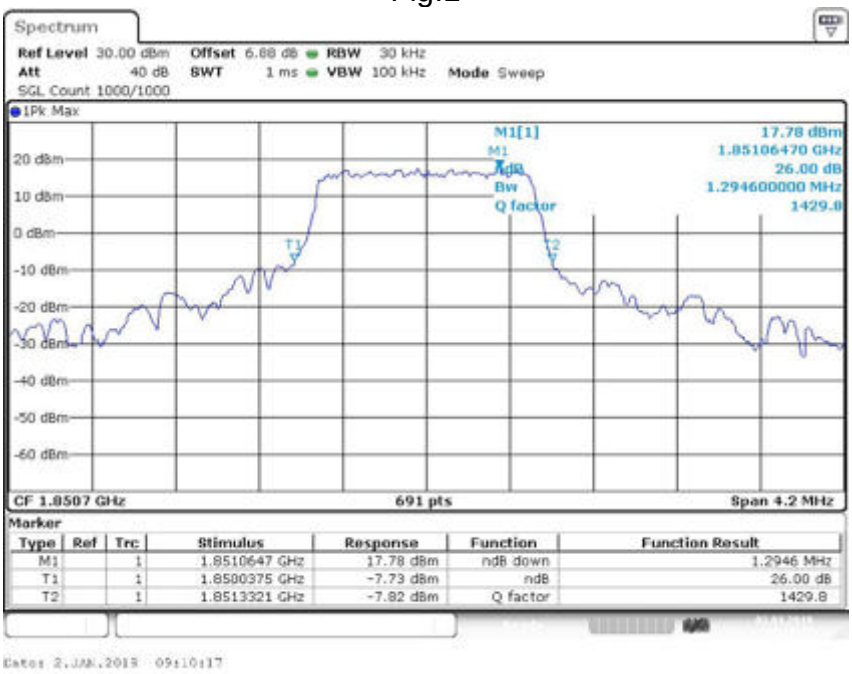


Fig.2

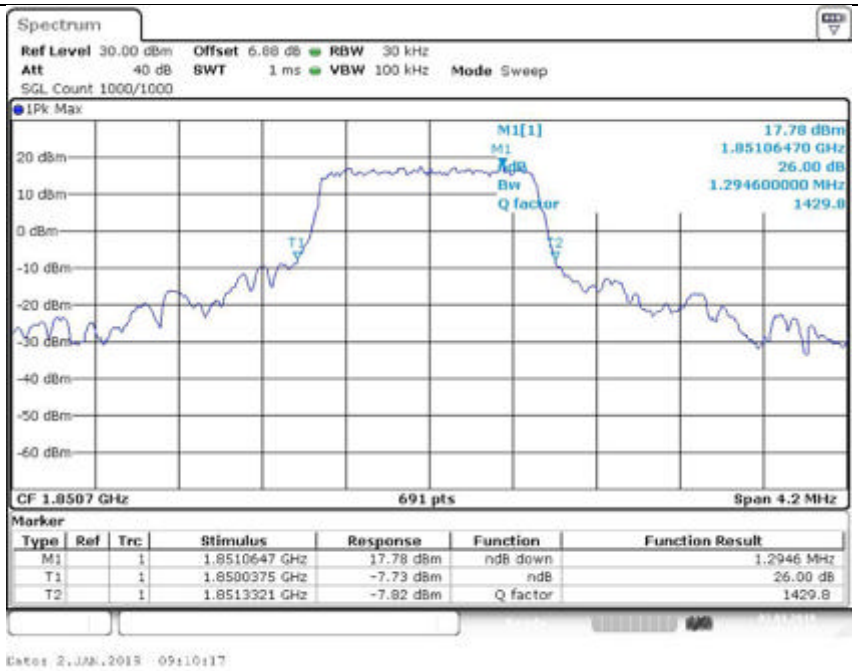


Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	1.4	6	0	1.2886	Fig.1	1.2886	Fig.2	1.2886	Fig.3

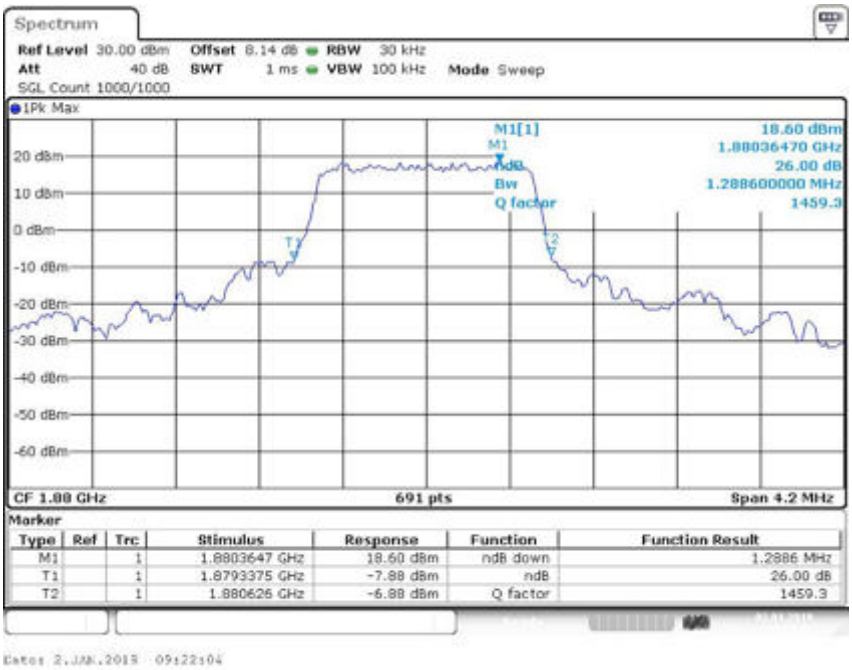


Fig.1

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 30 kHz
Att 40 dB SWT 1 ms VBW 100 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 18.60 dBm
M1 1.88036470 GHz
ndB 26.00 dB
Bw 1.288600000 MHz
Q factor 1459.3
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 4.2 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.8803647 GHz 18.60 dBm ndB down 1.2886 MHz
T1 1 1.8793375 GHz -7.88 dBm ndB 26.00 dB
T2 1 1.880626 GHz -6.88 dBm Q factor 1459.3
Date: 2.JAN.2019 09:22:04

Fig.2

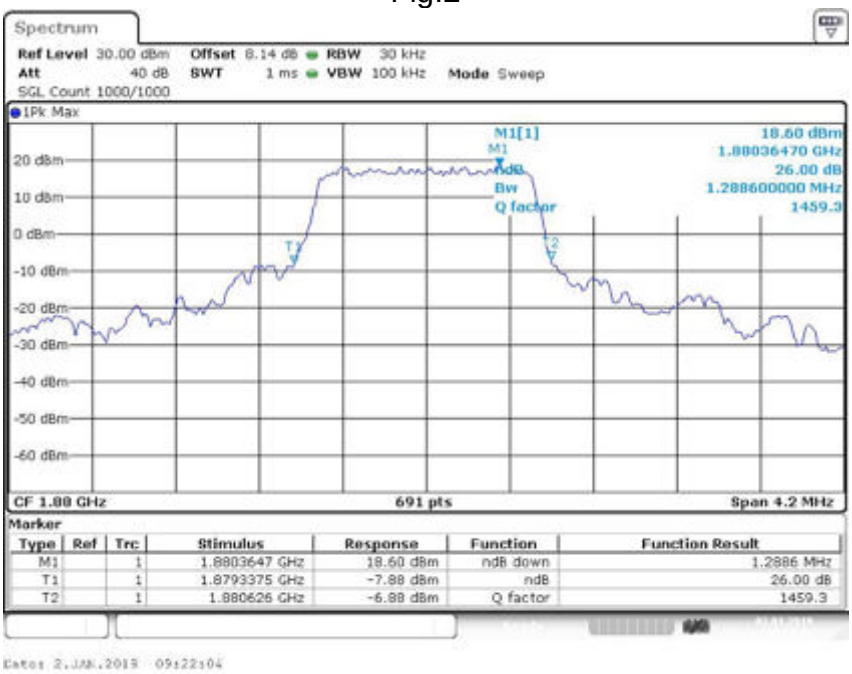

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 30 kHz
Att 40 dB SWT 1 ms VBW 100 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 18.60 dBm
M1 1.88036470 GHz
ndB 26.00 dB
Bw 1.288600000 MHz
Q factor 1459.3
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 4.2 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.8803647 GHz 18.60 dBm ndB down 1.2886 MHz
T1 1 1.8793375 GHz -7.88 dBm ndB 26.00 dB
T2 1 1.880626 GHz -6.88 dBm Q factor 1459.3
Date: 2.JAN.2019 09:22:04

Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1909.3	19193	1.4	6	0	1.3068	Fig.1	1.3068	Fig.2	1.3068	Fig.3

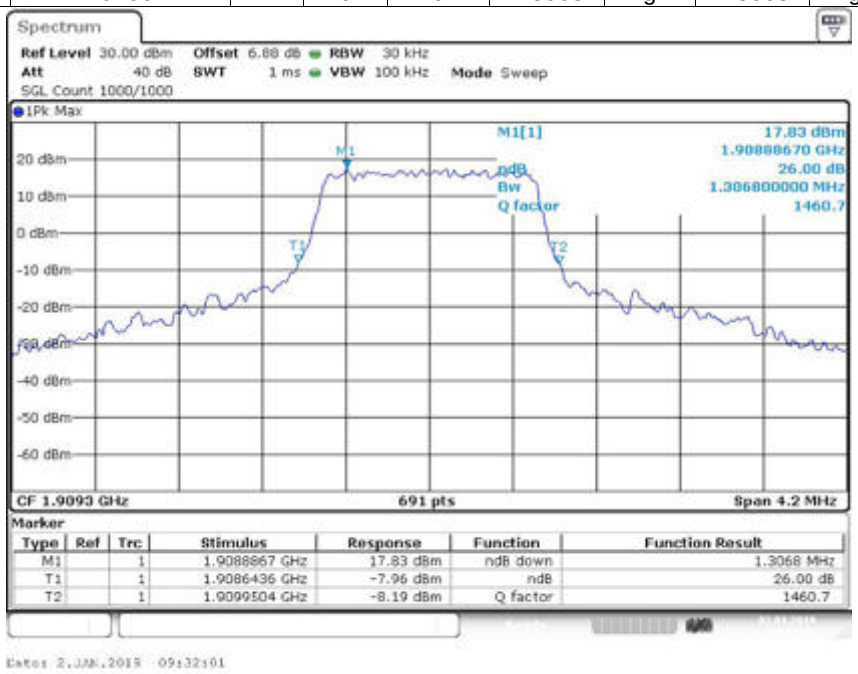


Fig.1

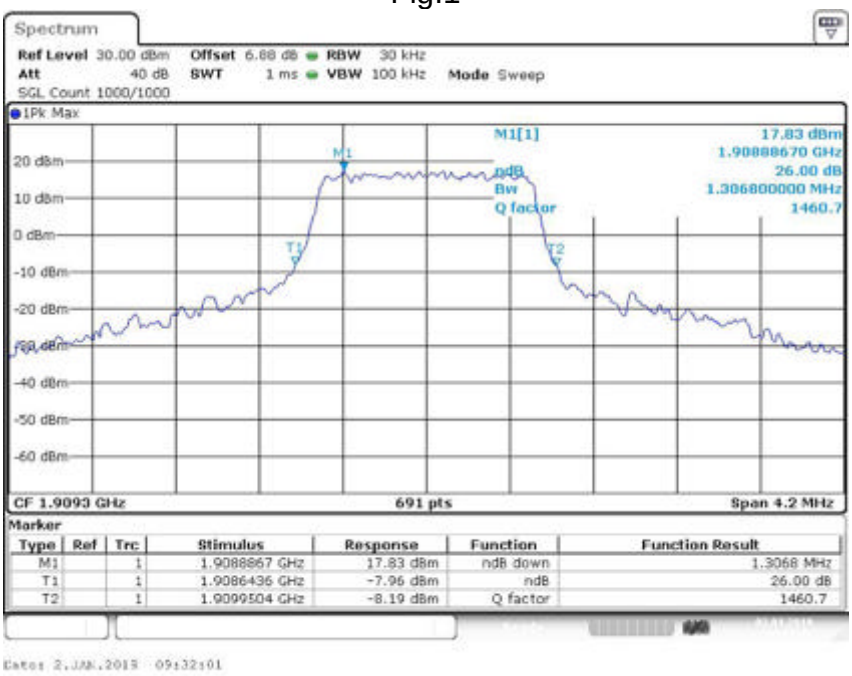


Fig.2

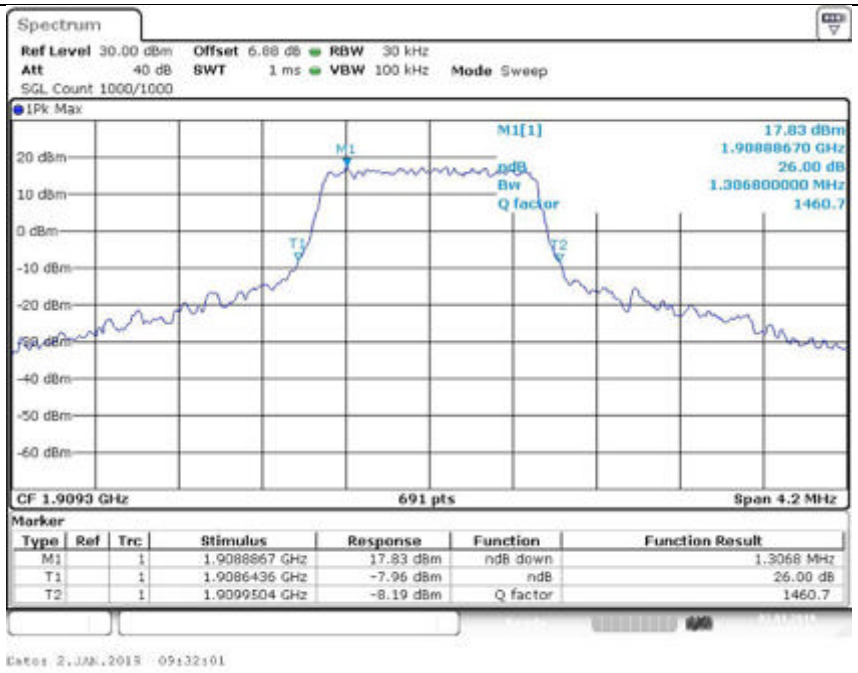


Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1851.5	18615	3	15	0	3.191	Fig.1	3.191	Fig.2	3.191	Fig.3

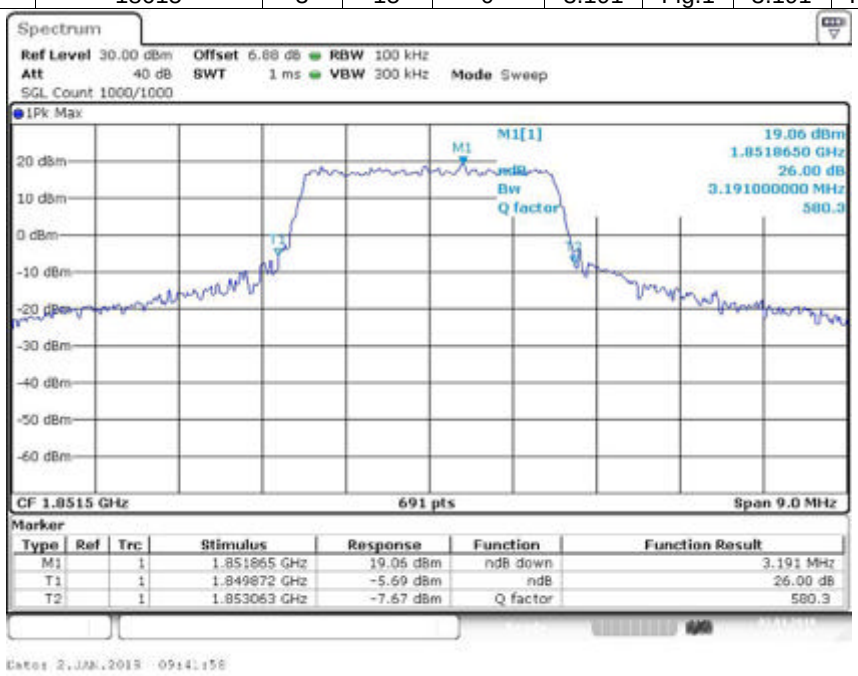


Fig.1

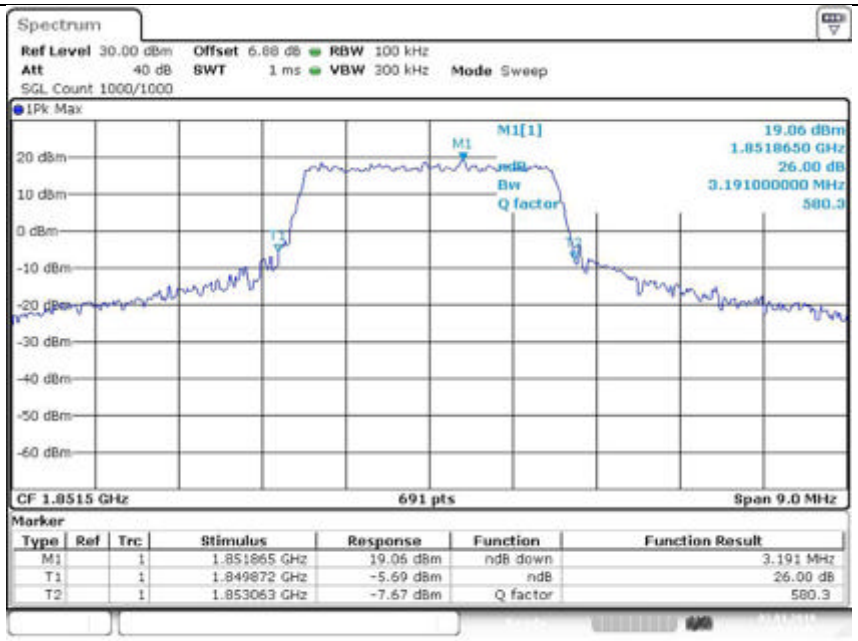

Spectrum
Ref Level 30.00 dBm Offset 6.88 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 19.06 dBm
1.8518650 GHz
ndB 26.00 dB
Bw 3.191000000 MHz
Q factor 580.3
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.8515 GHz
691 pts
Span 9.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.851865 GHz 19.06 dBm ndB down 3.191 MHz
T1 1 1.849872 GHz -5.69 dBm ndB 26.00 dB
T2 1 1.853063 GHz -7.67 dBm Q factor 580.3

Fig.2

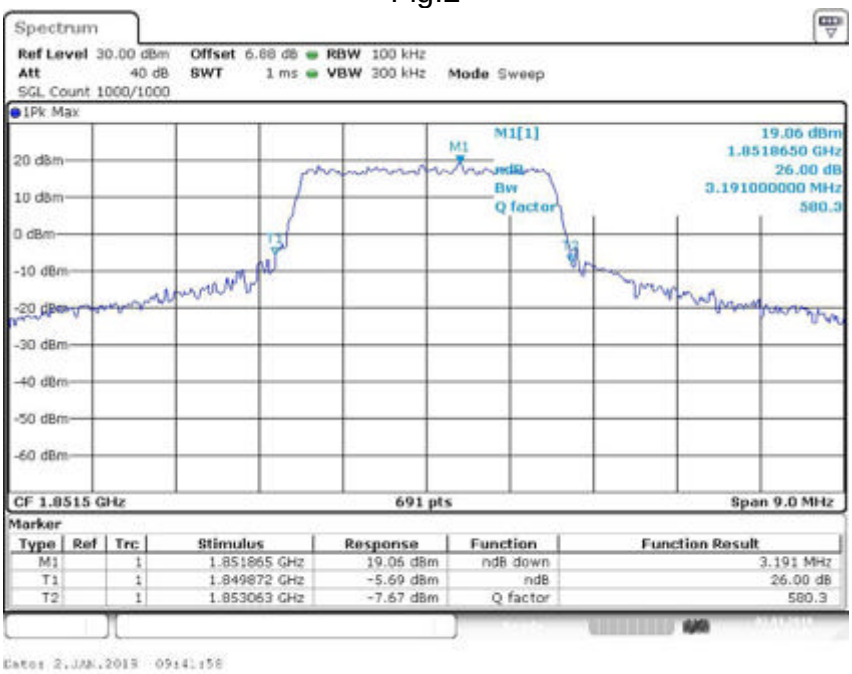

Spectrum
Ref Level 30.00 dBm Offset 6.88 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 19.06 dBm
1.8518650 GHz
ndB 26.00 dB
Bw 3.191000000 MHz
Q factor 580.3
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.8515 GHz
691 pts
Span 9.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.851865 GHz 19.06 dBm ndB down 3.191 MHz
T1 1 1.849872 GHz -5.69 dBm ndB 26.00 dB
T2 1 1.853063 GHz -7.67 dBm Q factor 580.3

Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	3	15	0	3.243	Fig.1	3.243	Fig.2	3.243	Fig.3

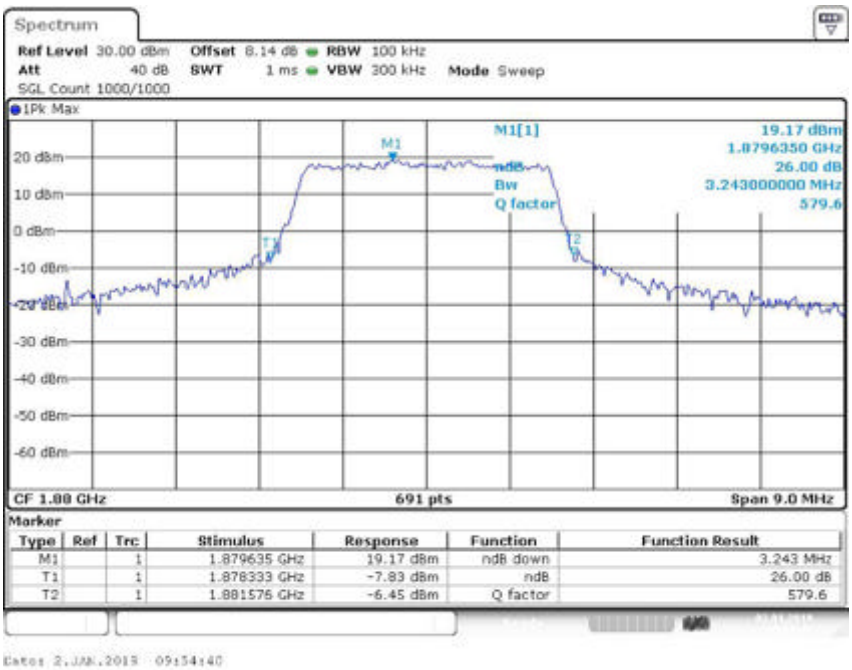


Fig.1

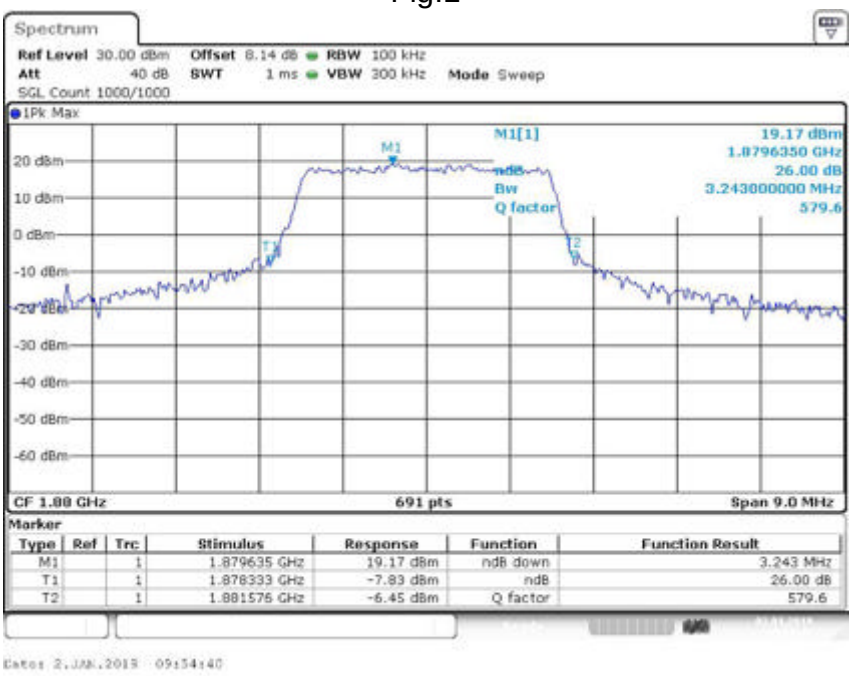


Fig.2

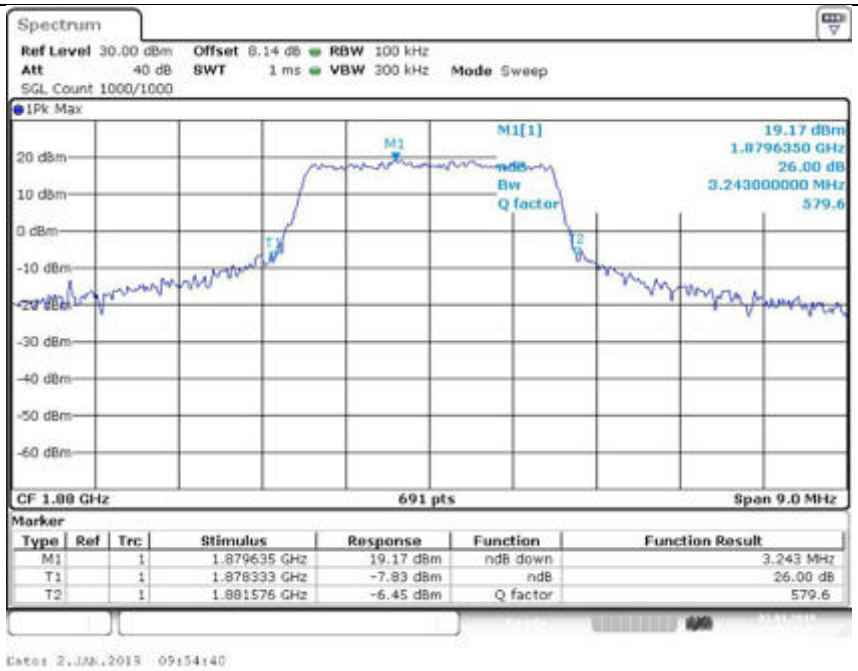


Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1908.5	19185	3	15	0	3.152	Fig.1	3.152	Fig.2	3.152	Fig.3

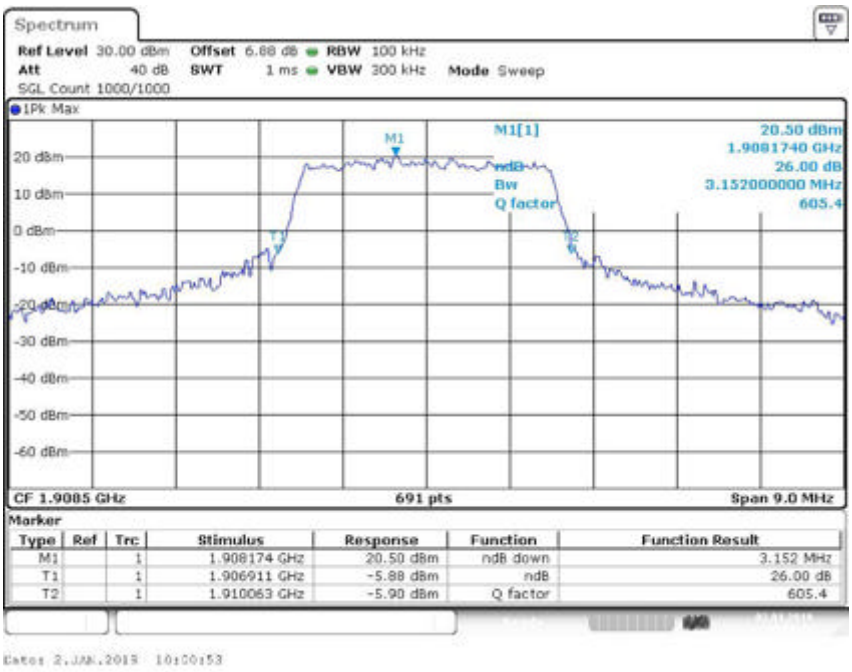


Fig.1

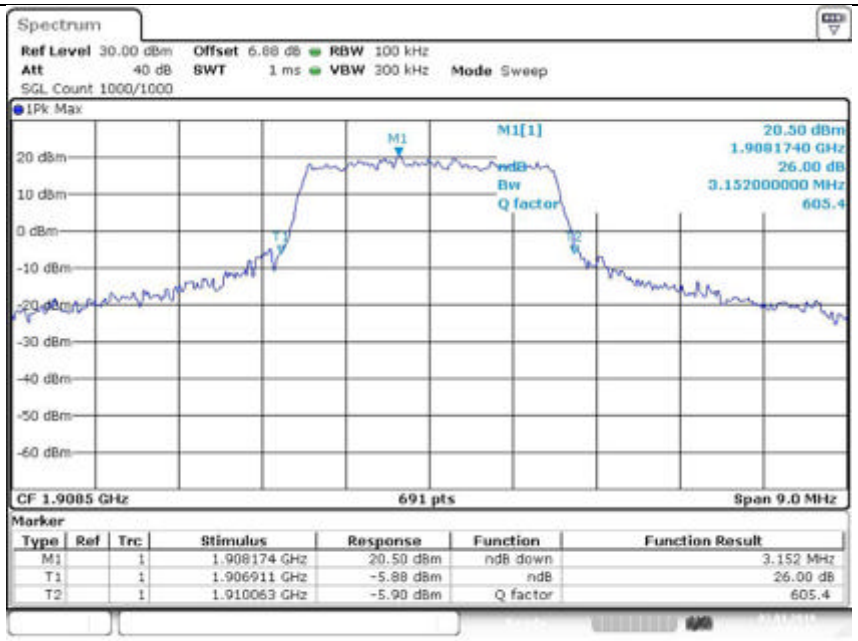

Spectrum
Ref Level 30.00 dBm Offset 6.88 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1]
20.50 dBm
1.9081740 GHz
ndB 26.00 dB
Bw 3.152000000 MHz
Q factor 605.4
M1
T1
T2
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.9085 GHz
691 pts
Span 9.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.908174 GHz 20.50 dBm ndB down 3.152 MHz
T1 1 1.906911 GHz -5.88 dBm ndB 26.00 dB
T2 1 1.910063 GHz -5.90 dBm Q factor 605.4

Fig.2

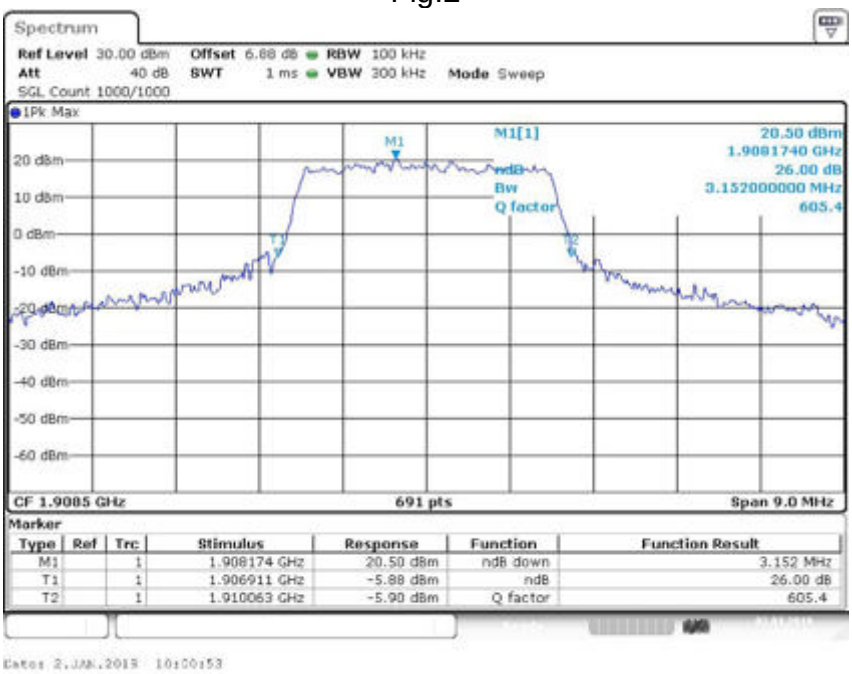

Spectrum
Ref Level 30.00 dBm Offset 6.88 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1]
20.50 dBm
1.9081740 GHz
ndB 26.00 dB
Bw 3.152000000 MHz
Q factor 605.4
M1
T1
T2
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.9085 GHz
691 pts
Span 9.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.908174 GHz 20.50 dBm ndB down 3.152 MHz
T1 1 1.906911 GHz -5.88 dBm ndB 26.00 dB
T2 1 1.910063 GHz -5.90 dBm Q factor 605.4

Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		16-QAM	
2	1852.5	18625	5	25	0	5.123	Fig.1	5.188	Fig.2	5.188	Fig.3

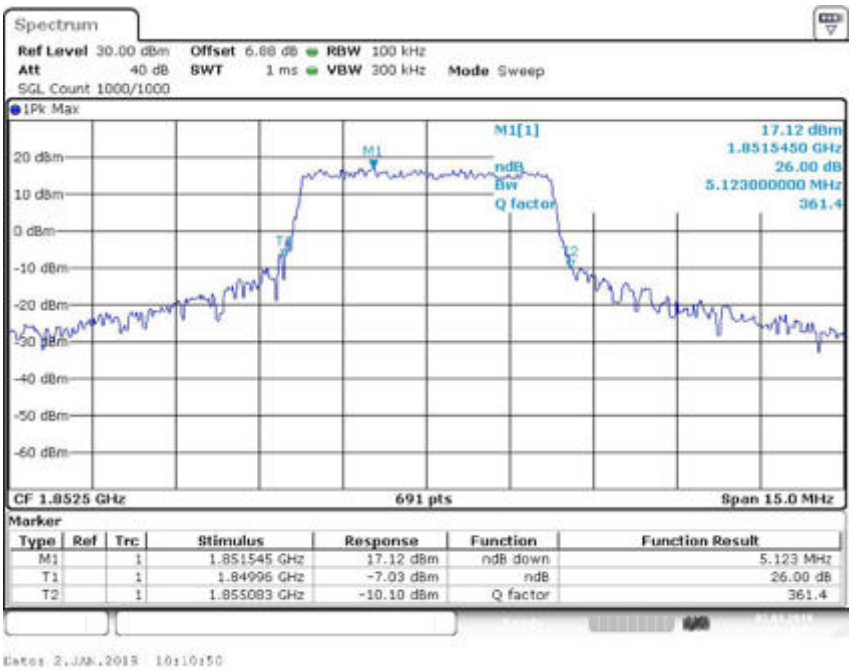


Fig.1

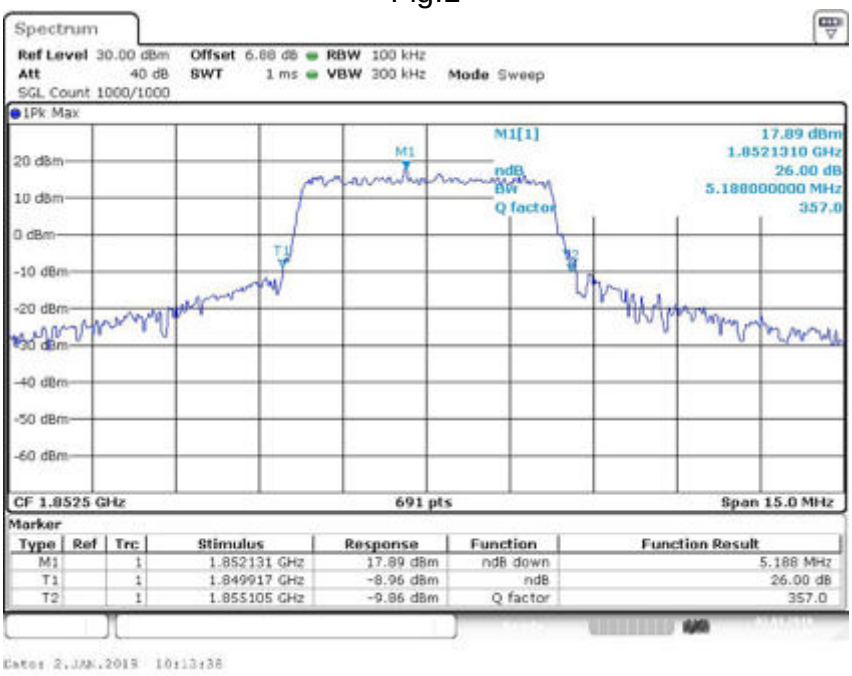


Fig.2

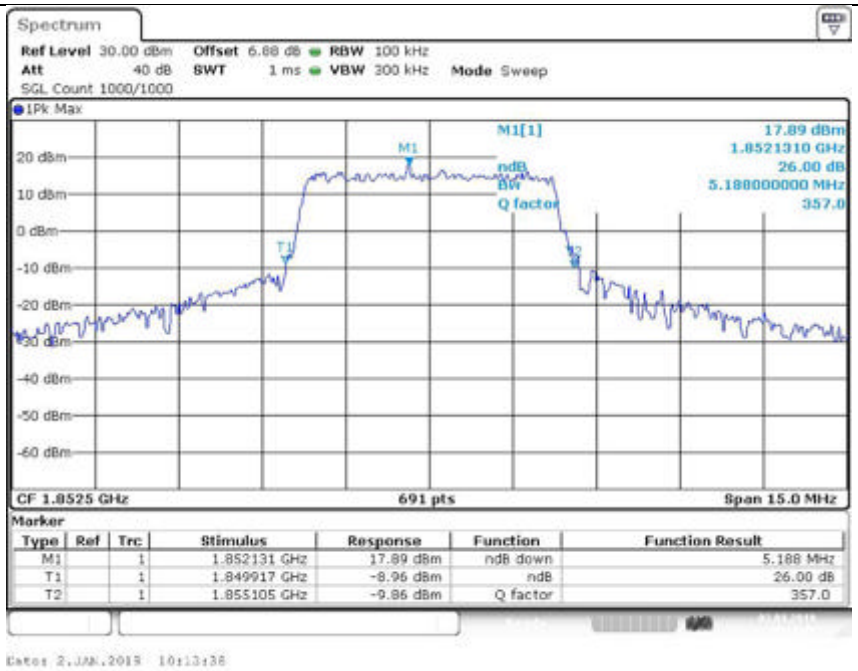


Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	5	25	0	5.08	Fig.1	5.318	Fig.2	5.318	Fig.3

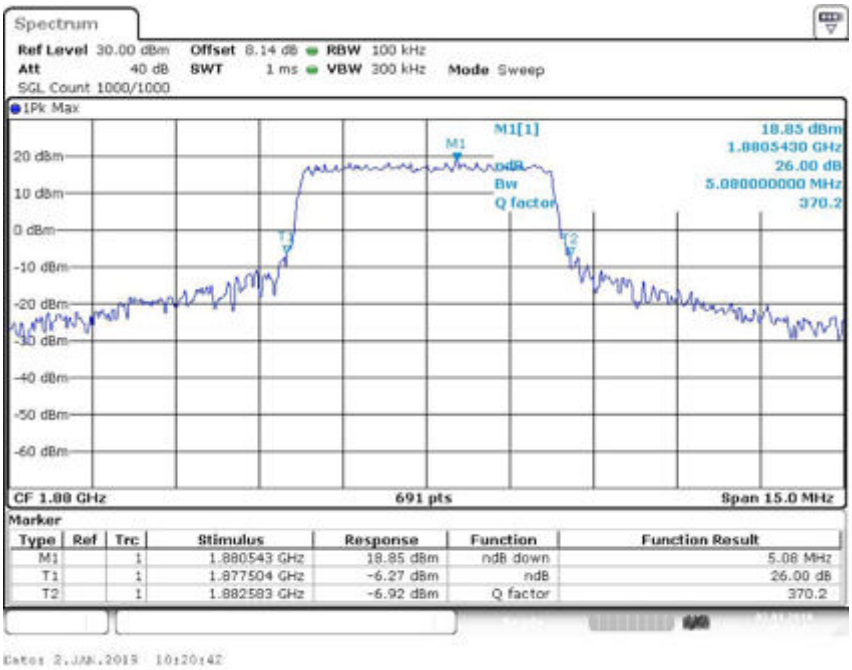


Fig.1

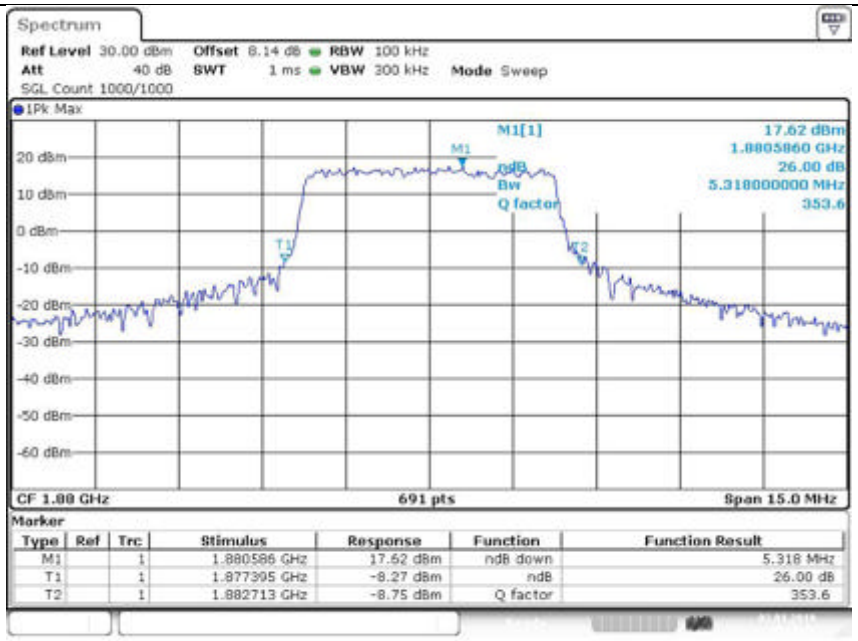

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.62 dBm
1.8805860 GHz
ndB 26.00 dB
Bw 5.318000000 MHz
Q factor 353.6
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 15.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.880586 GHz 17.62 dBm ndB down 5.318 MHz
T1 1 1.877395 GHz -8.27 dBm ndB 26.00 dB
T2 1 1.882713 GHz -8.75 dBm Q factor 353.6

Fig.2

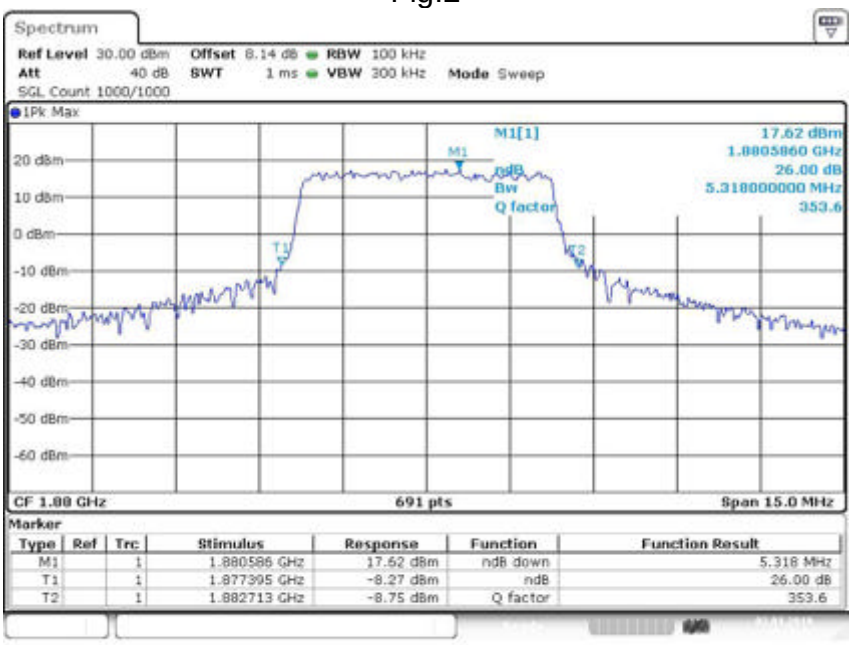

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 100 kHz
Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.62 dBm
1.8805860 GHz
ndB 26.00 dB
Bw 5.318000000 MHz
Q factor 353.6
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 15.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.880586 GHz 17.62 dBm ndB down 5.318 MHz
T1 1 1.877395 GHz -8.27 dBm ndB 26.00 dB
T2 1 1.882713 GHz -8.75 dBm Q factor 353.6

Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1907.5	19175	5	25	0	5.275	Fig.1	5.275	Fig.2	5.275	Fig.3

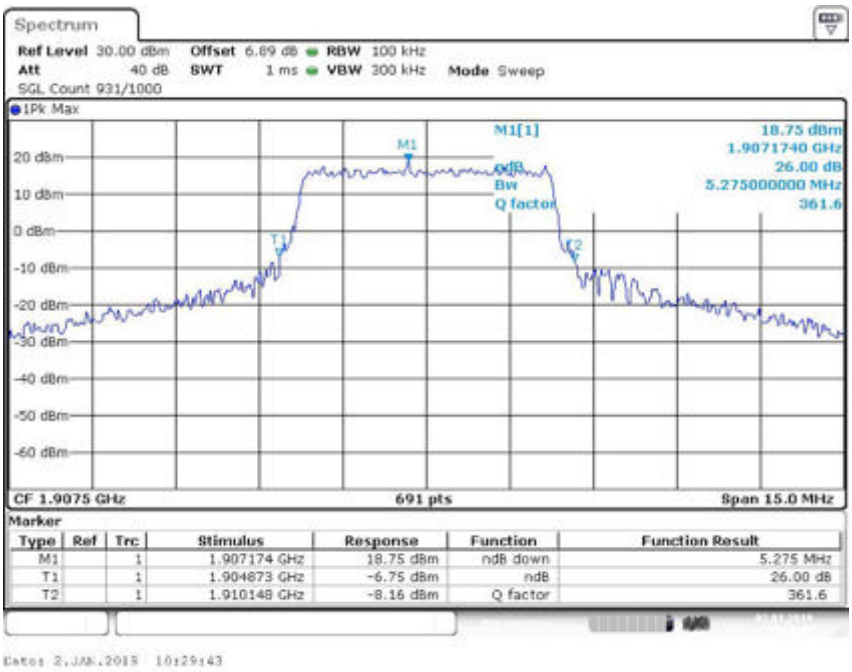


Fig.1

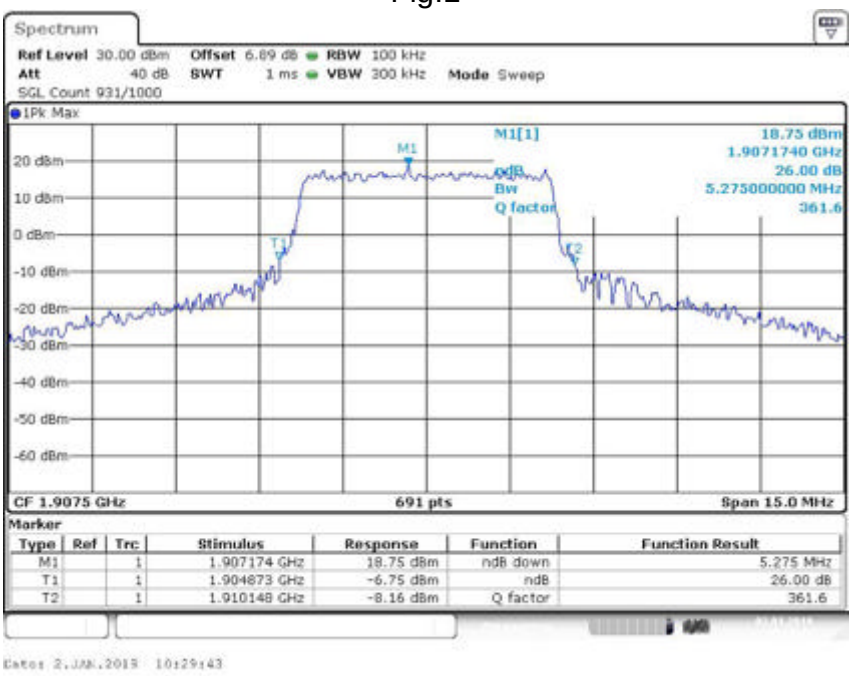


Fig.2

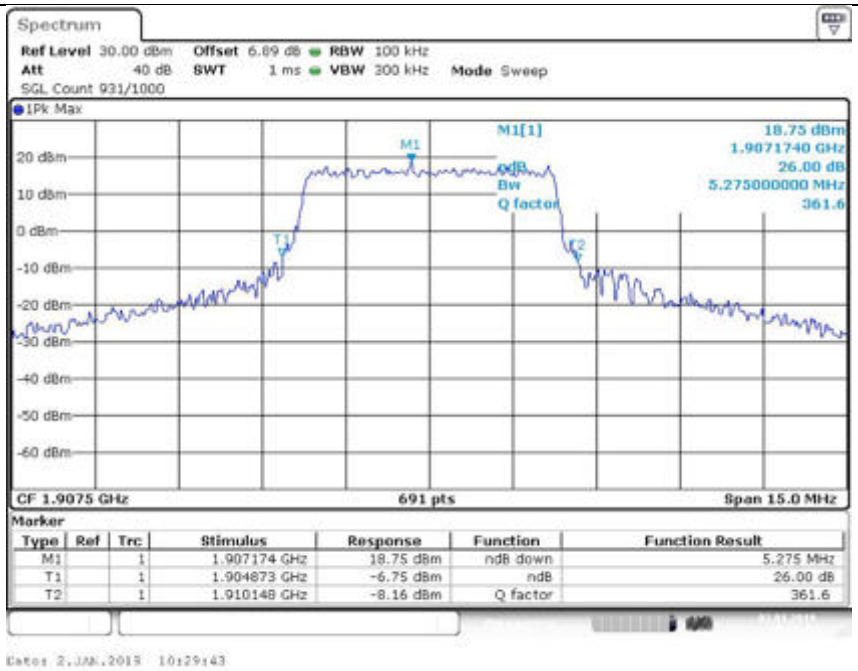


Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1855	18650	10	50	0	10.289	Fig.1	10.159	Fig.2	10.159	Fig.3

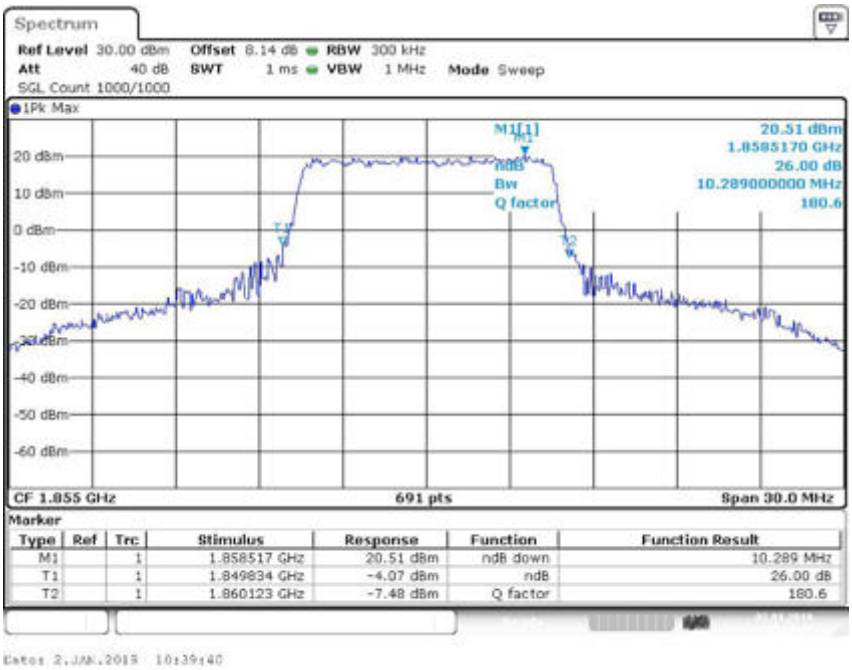


Fig.1

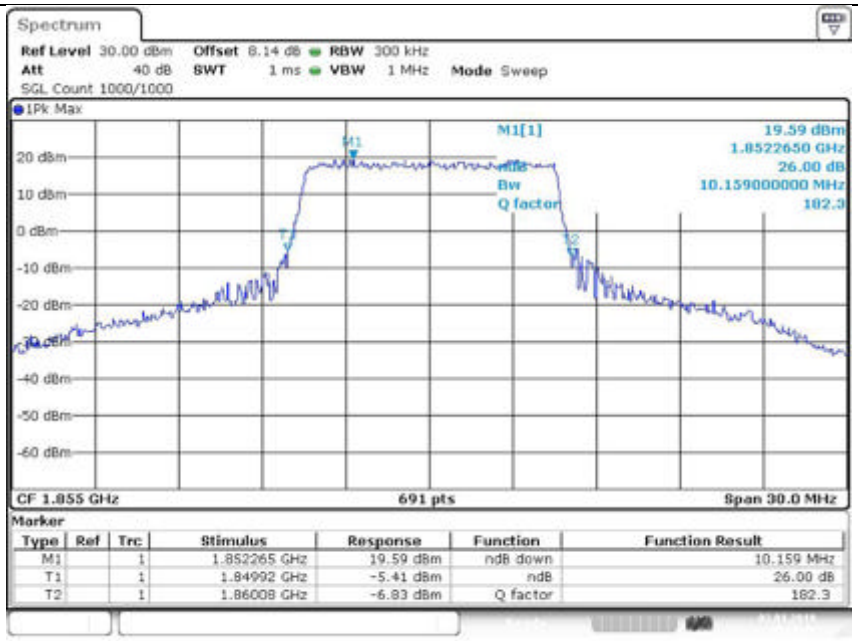

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 19.59 dBm
1.8522650 GHz
ndB 26.00 dB
Bw 10.159000000 MHz
Q factor 182.3
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.855 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.852265 GHz 19.59 dBm ndB down 10.159 MHz
T1 1 1.84992 GHz -5.41 dBm ndB 26.00 dB
T2 1 1.86008 GHz -6.83 dBm Q factor 182.3

Fig.2

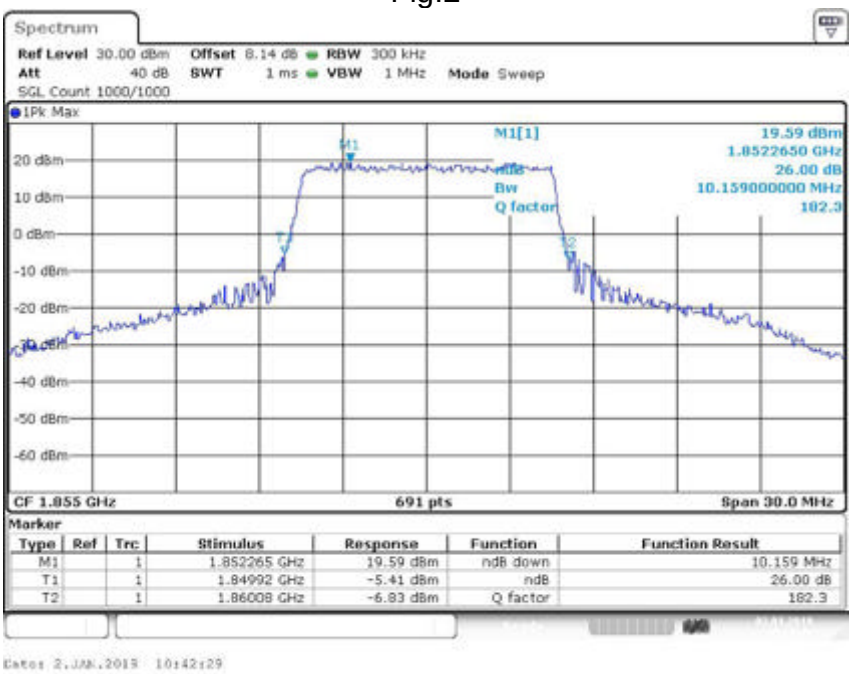

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 19.59 dBm
1.8522650 GHz
ndB 26.00 dB
Bw 10.159000000 MHz
Q factor 182.3
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.855 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.852265 GHz 19.59 dBm ndB down 10.159 MHz
T1 1 1.84992 GHz -5.41 dBm ndB 26.00 dB
T2 1 1.86008 GHz -6.83 dBm Q factor 182.3

Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	10	50	0	10.203	Fig.1	10.116	Fig.2	10.116	Fig.3

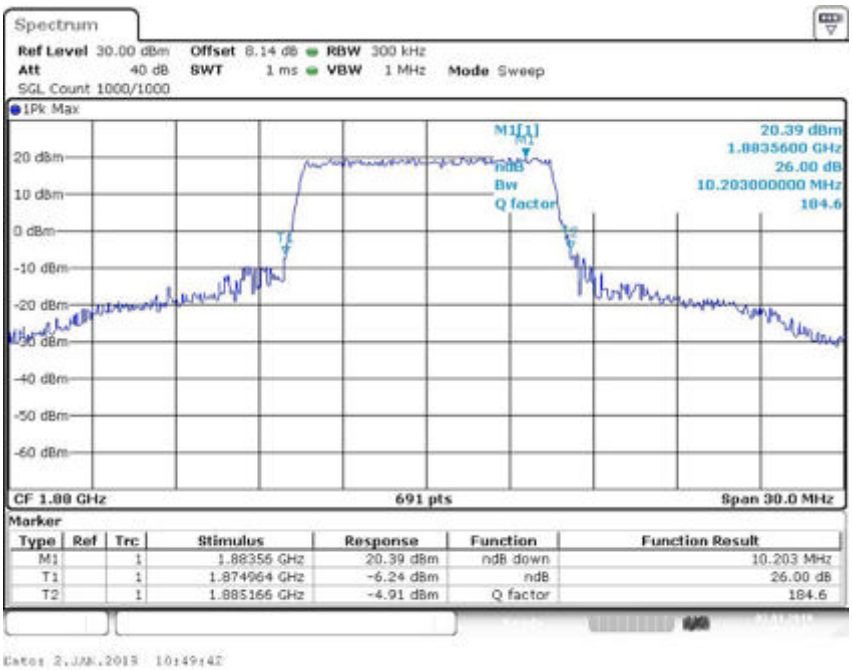


Fig.1

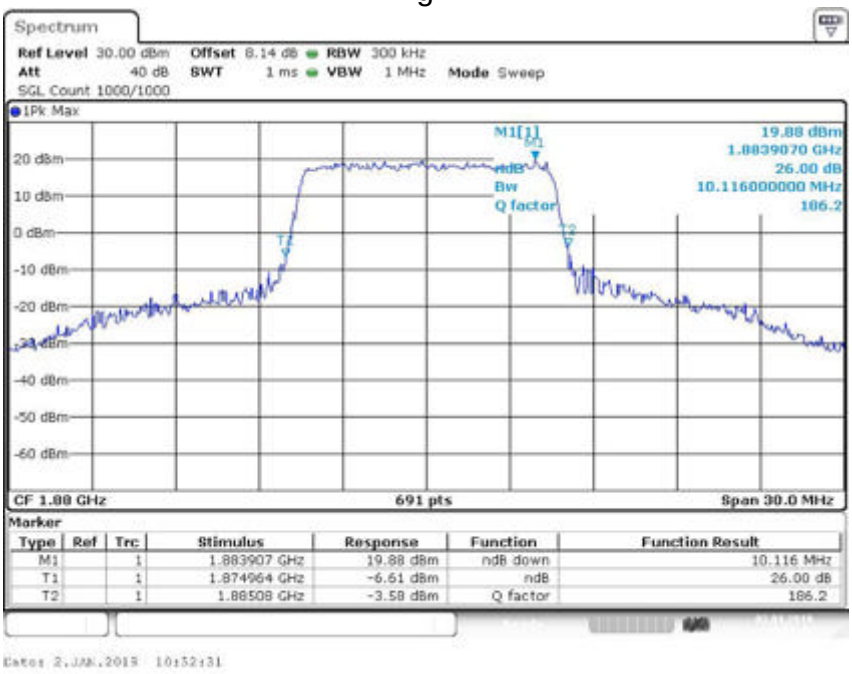


Fig.2

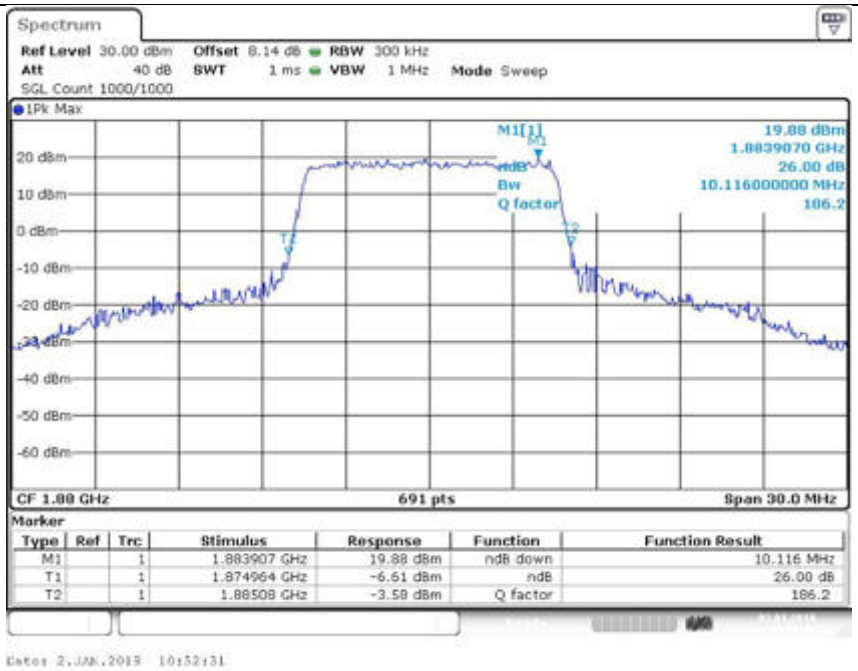


Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1905	19150	10	50	0	10.289	Fig.1	10.289	Fig.2	10.289	Fig.3

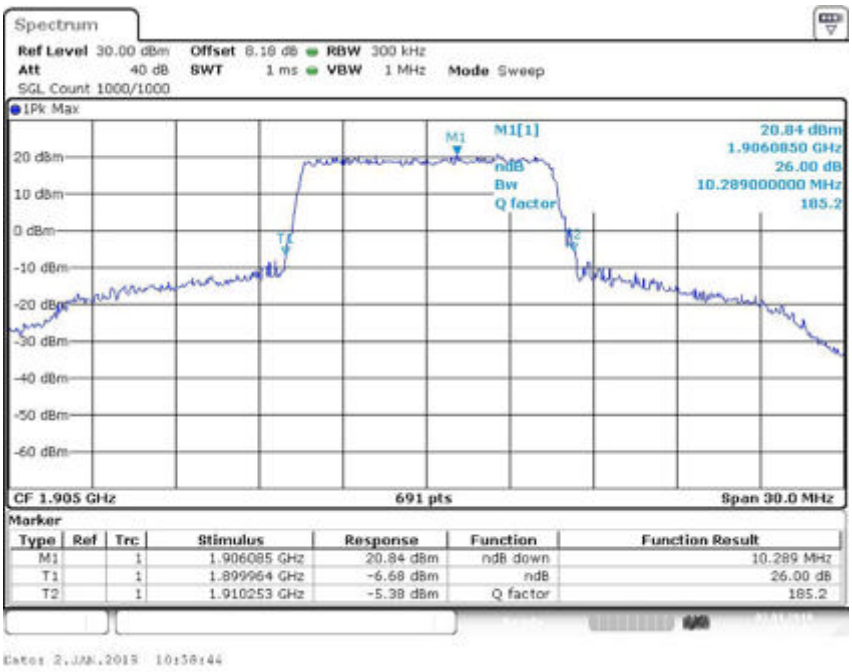


Fig.1

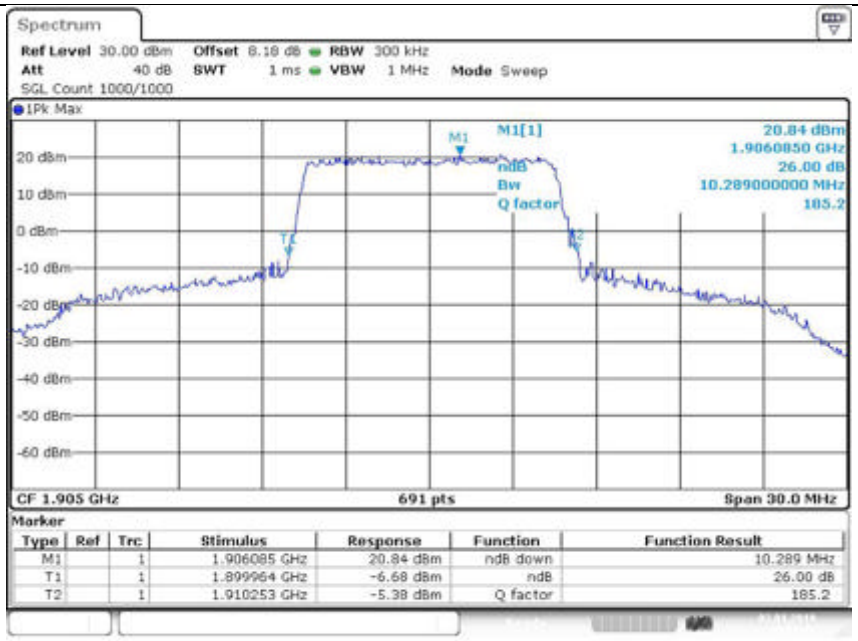

Spectrum
Ref Level 30.00 dBm Offset 8.18 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 20.84 dBm
1.9060850 GHz
ndB 26.00 dB
Bw 10.289000000 MHz
Q factor 185.2
CF 1.905 GHz 691 pts Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.906085 GHz 20.84 dBm ndB down 10.289 MHz
T1 1 1.899964 GHz -6.68 dBm ndB 26.00 dB
T2 1 1.910253 GHz -5.38 dBm Q factor 185.2

Fig.2

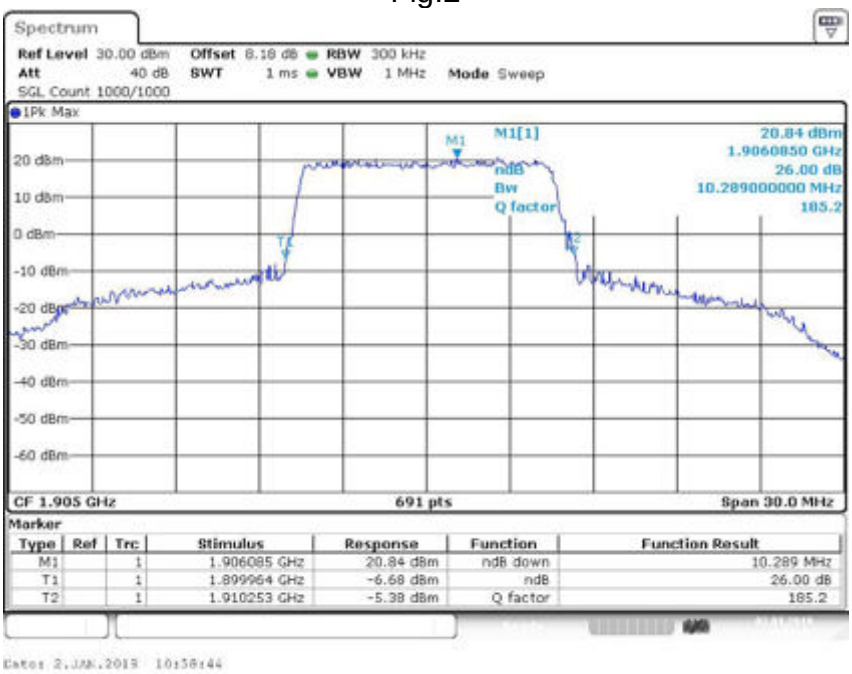

Spectrum
Ref Level 30.00 dBm Offset 8.18 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 20.84 dBm
1.9060850 GHz
ndB 26.00 dB
Bw 10.289000000 MHz
Q factor 185.2
CF 1.905 GHz 691 pts Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.906085 GHz 20.84 dBm ndB down 10.289 MHz
T1 1 1.899964 GHz -6.68 dBm ndB 26.00 dB
T2 1 1.910253 GHz -5.38 dBm Q factor 185.2

Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1857.5	18675	15	75	0	15.174	Fig.1	14.848	Fig.2	14.848	Fig.3

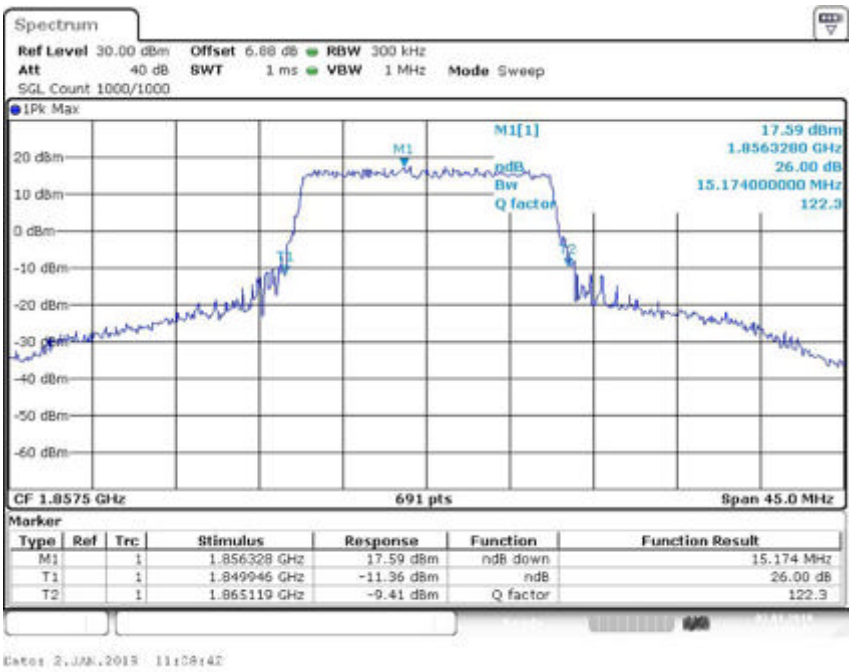


Fig.1

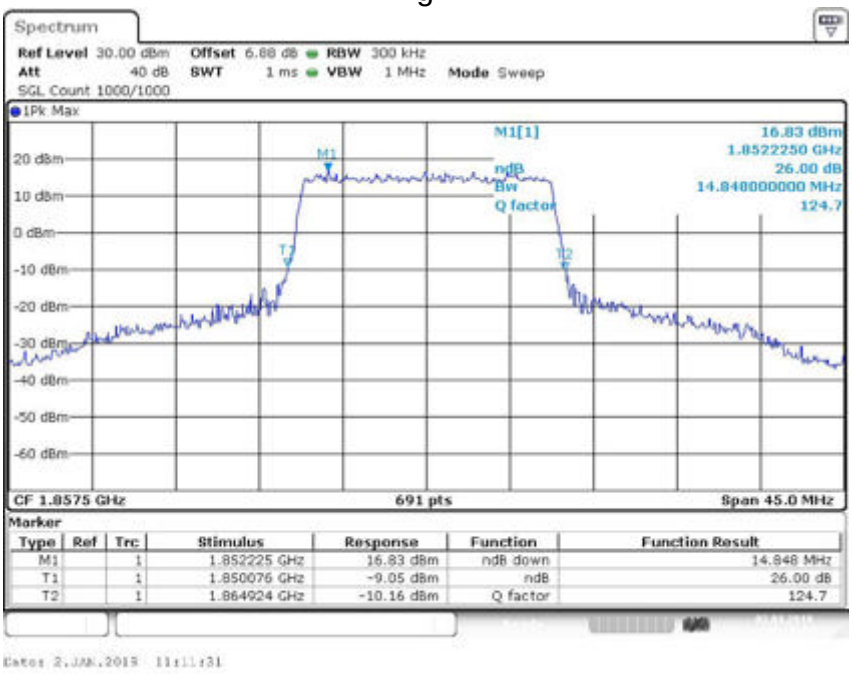


Fig.2

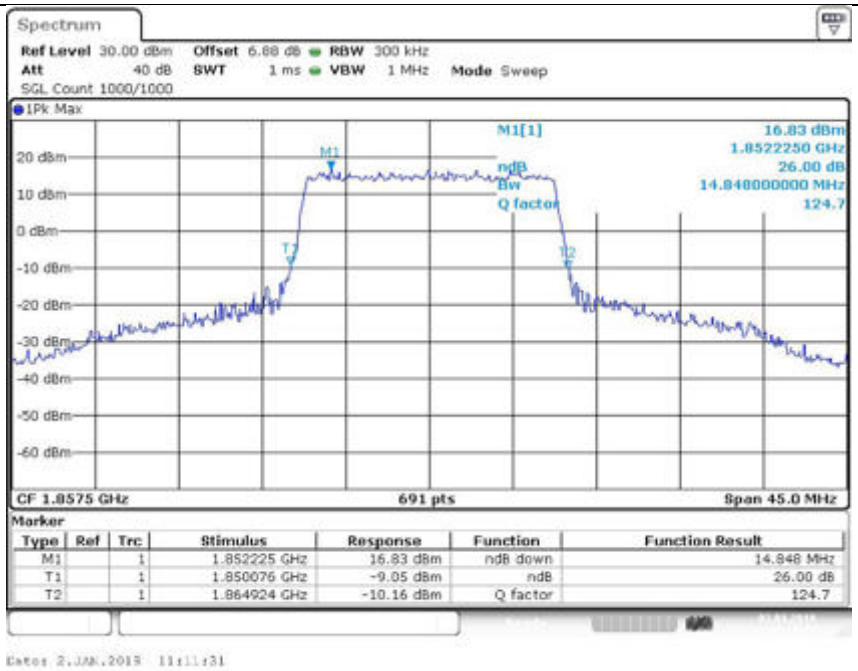


Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	15	75	0	15.239	Fig.1	14.978	Fig.2	14.978	Fig.3

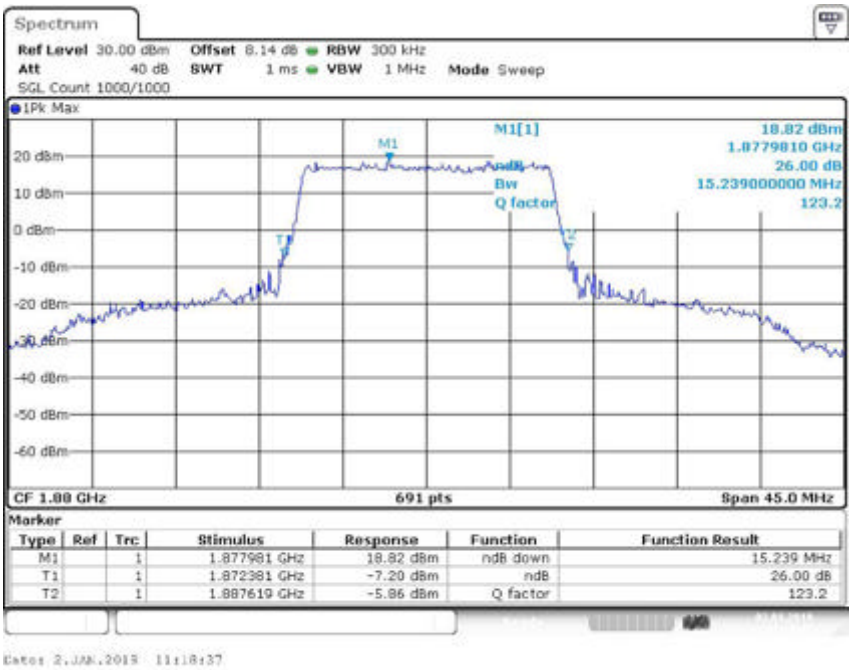


Fig.1

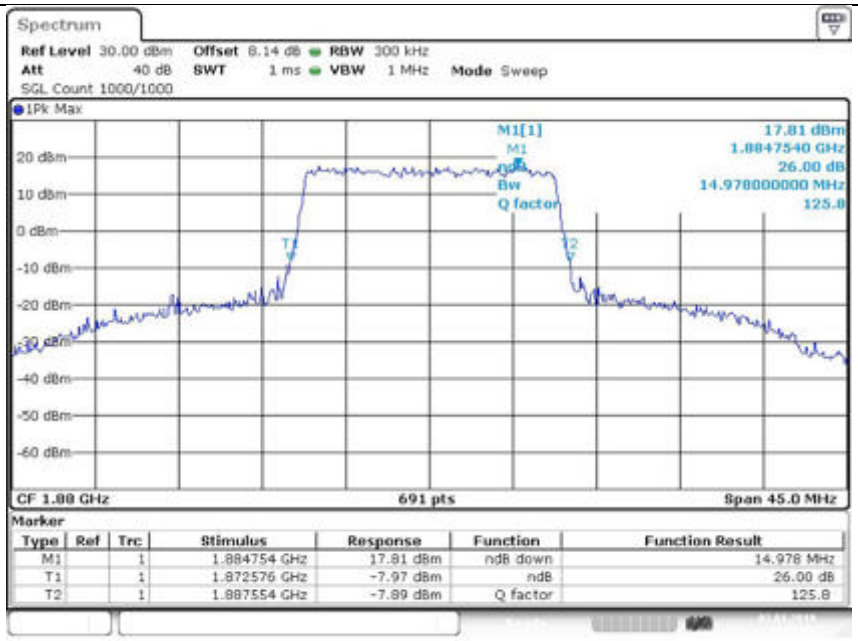

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.81 dBm
M1 1.8847540 GHz
ndB 26.00 dB
Bw 14.978000000 MHz
Q factor 125.8
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 45.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.884754 GHz 17.81 dBm ndB down 14.978 MHz
T1 1 1.872576 GHz -7.97 dBm ndB 26.00 dB
T2 1 1.887554 GHz -7.89 dBm Q factor 125.8

Fig.2

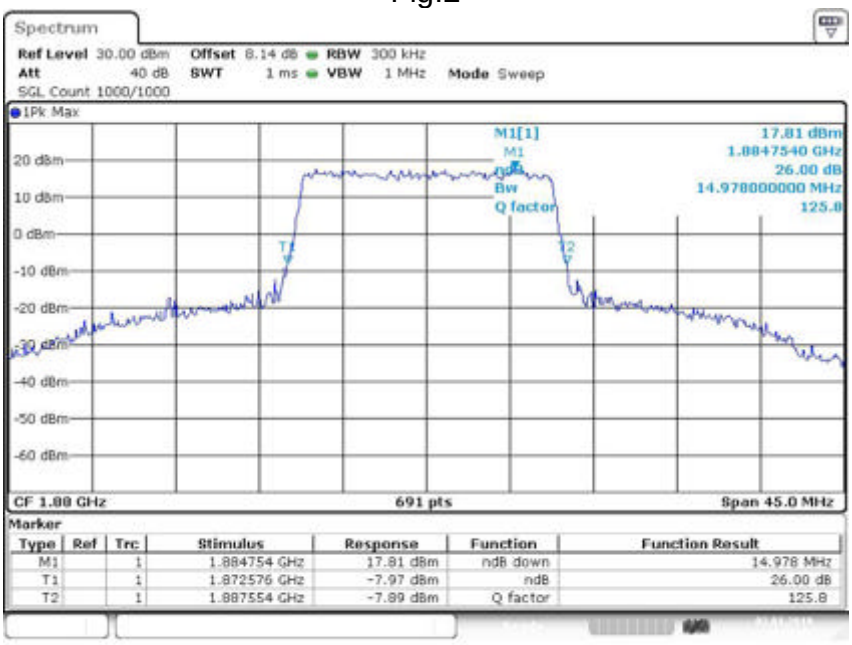

Spectrum
Ref Level 30.00 dBm Offset 8.14 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.81 dBm
M1 1.8847540 GHz
ndB 26.00 dB
Bw 14.978000000 MHz
Q factor 125.8
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.88 GHz
691 pts
Span 45.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.884754 GHz 17.81 dBm ndB down 14.978 MHz
T1 1 1.872576 GHz -7.97 dBm ndB 26.00 dB
T2 1 1.887554 GHz -7.89 dBm Q factor 125.8

Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1902.5	19125	15	75	0	15.239	Fig.1	15.239	Fig.2	15.239	Fig.3

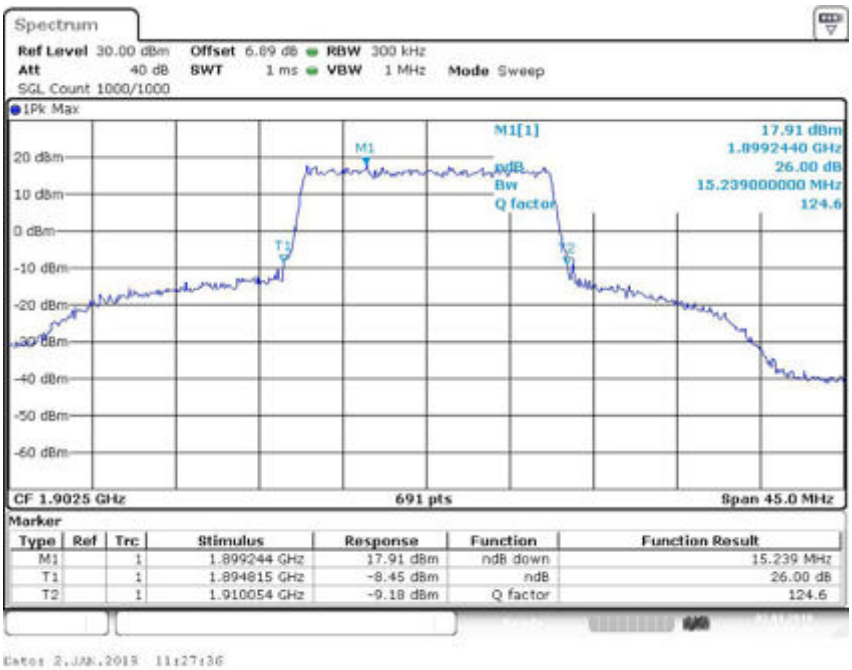


Fig.1

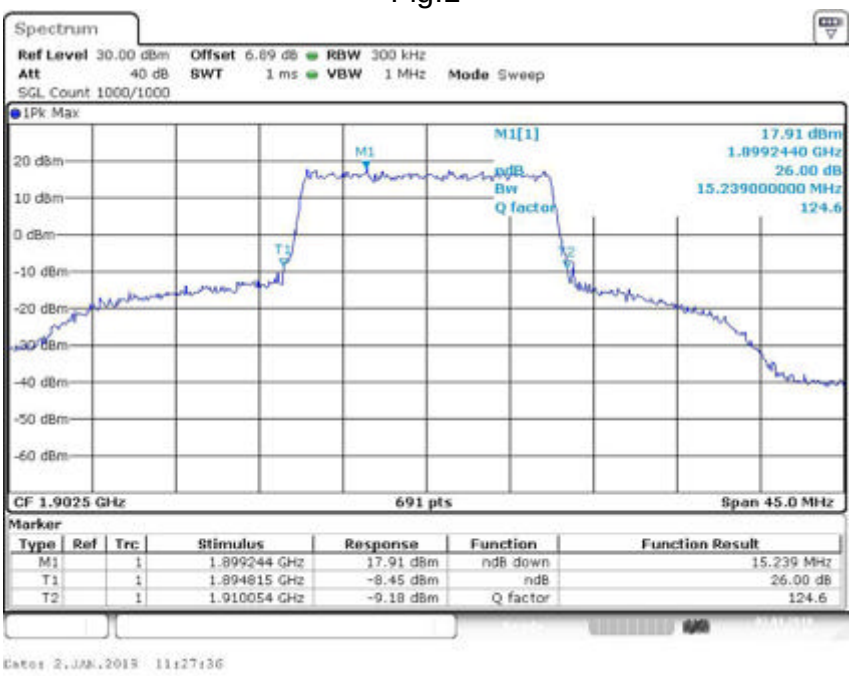


Fig.2

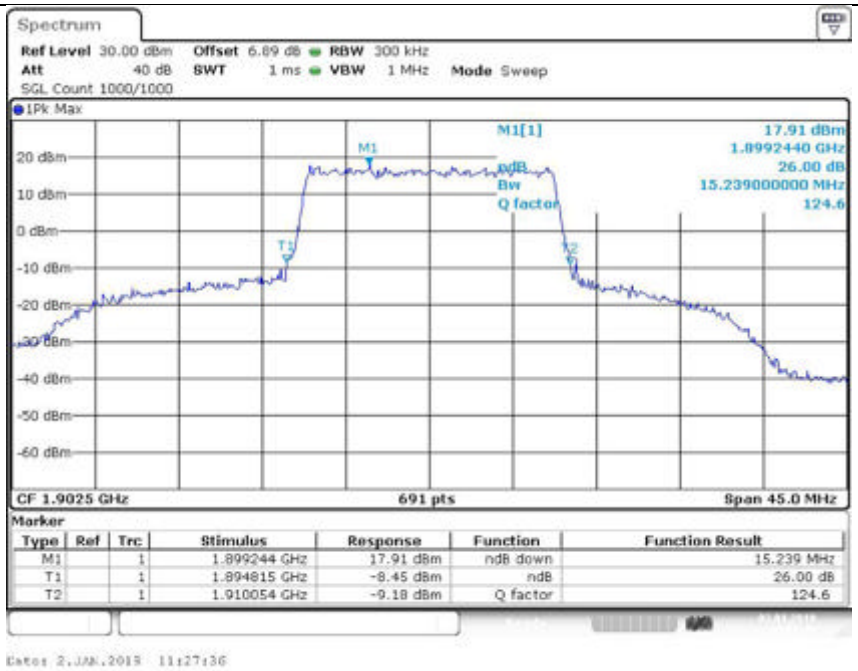


Fig.3

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1860	18700	20	100	0	19.711	Fig.1	19.711	Fig.2	19.711	Fig.3

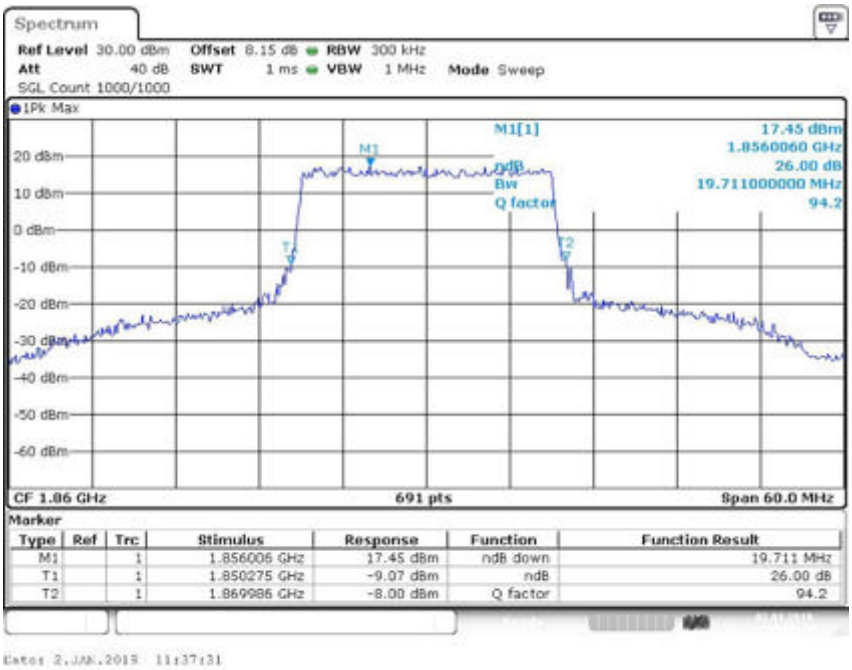


Fig.1

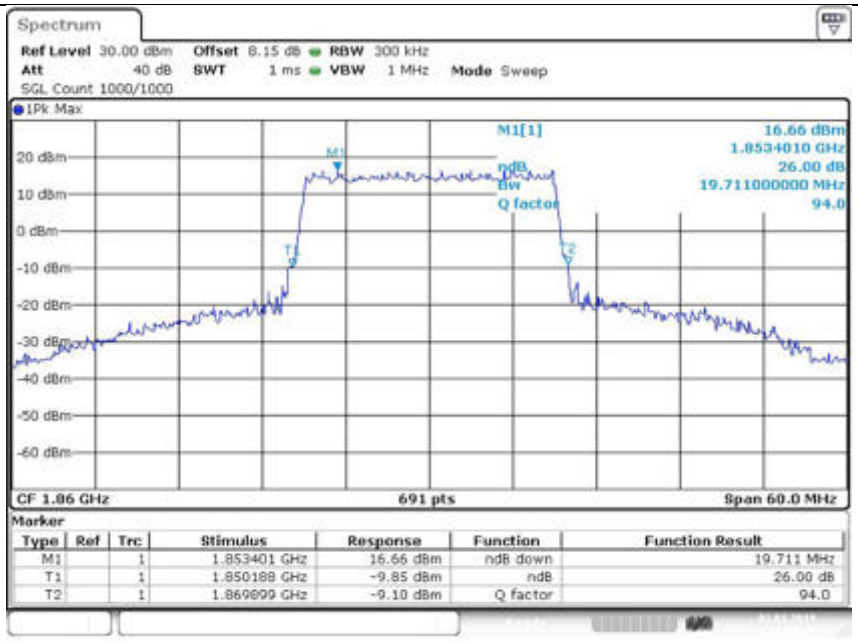

Spectrum
Ref Level 30.00 dBm Offset 8.15 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 16.66 dBm
1.8534010 GHz
ndB 26.00 dB
Bw 19.711000000 MHz
Q factor 94.0
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.86 GHz
691 pts
Span 60.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.853401 GHz 16.66 dBm ndB down 19.711 MHz
T1 1 1.850188 GHz -9.85 dBm ndB 26.00 dB
T2 1 1.869899 GHz -9.10 dBm Q factor 94.0
Date: 2.JAN.2019 11:40:21

Fig.2

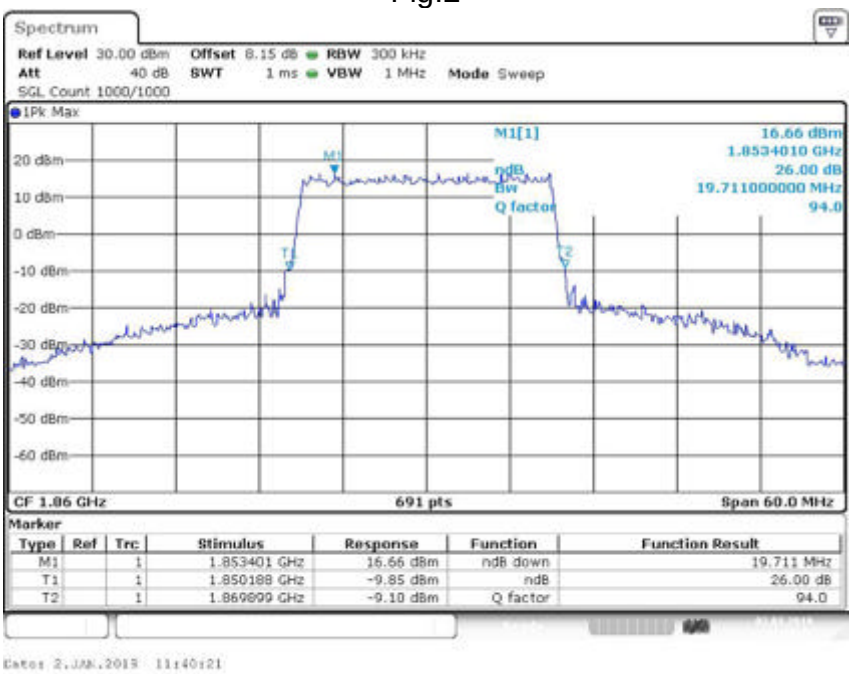

Spectrum
Ref Level 30.00 dBm Offset 8.15 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 16.66 dBm
1.8534010 GHz
ndB 26.00 dB
Bw 19.711000000 MHz
Q factor 94.0
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.86 GHz
691 pts
Span 60.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.853401 GHz 16.66 dBm ndB down 19.711 MHz
T1 1 1.850188 GHz -9.85 dBm ndB 26.00 dB
T2 1 1.869899 GHz -9.10 dBm Q factor 94.0
Date: 2.JAN.2019 11:40:21

Fig.3

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1880	18900	20	100	0	19.537	Fig.1	19.797	Fig.2	19.797	Fig.3

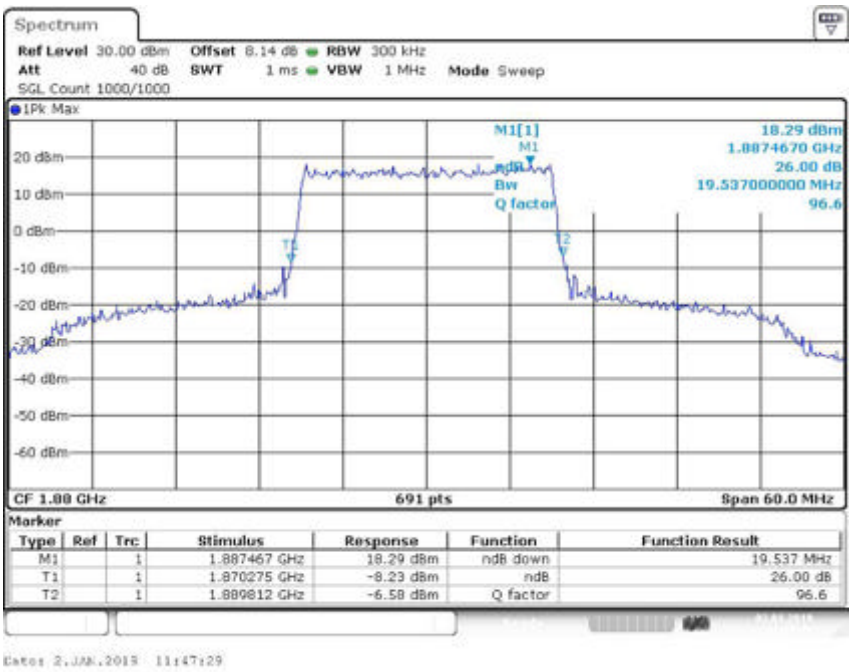


Fig.1

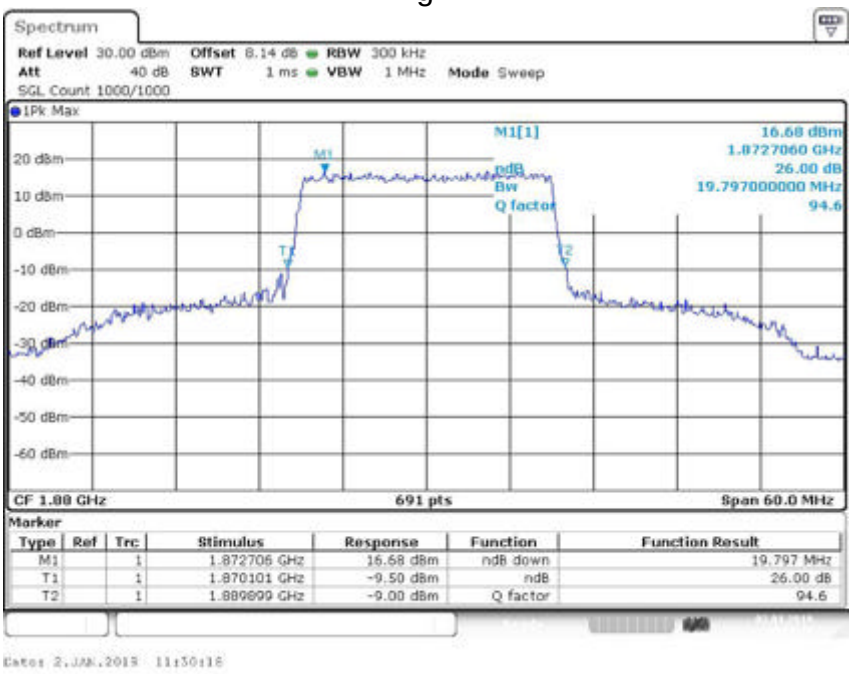


Fig.2

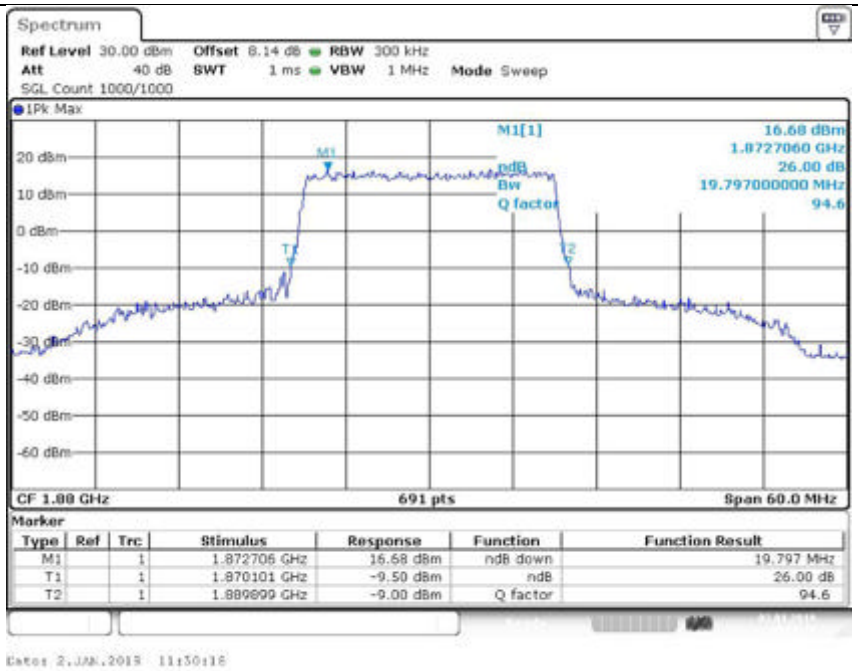


Fig.3

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1900	19100	20	100	0	20.145	Fig.1	20.145	Fig.2	20.145	Fig.3

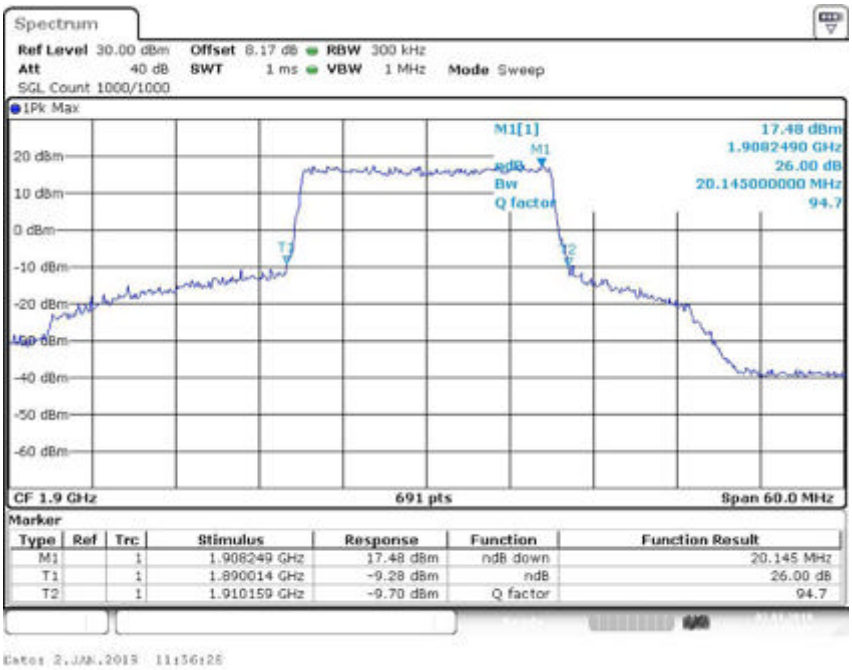


Fig.1

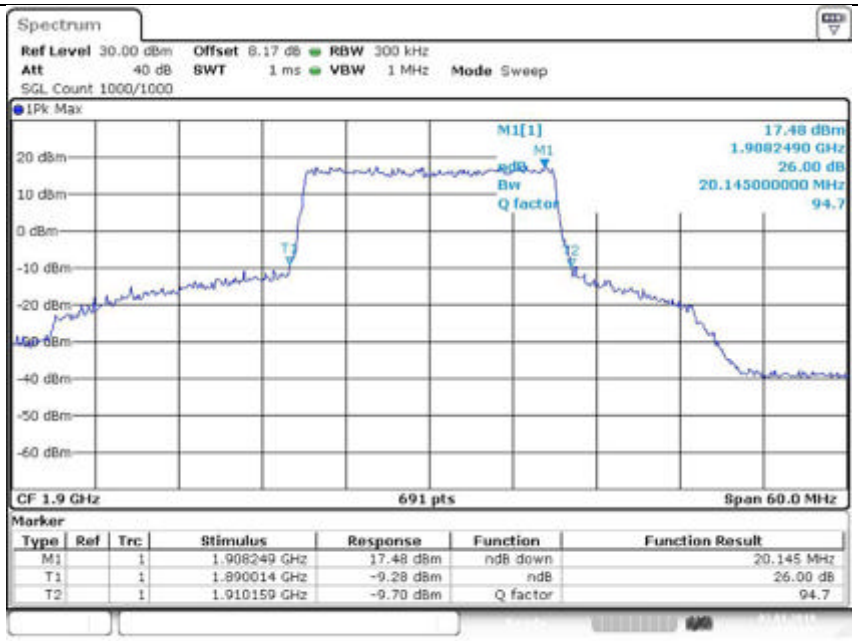

Spectrum
Ref Level 30.00 dBm Offset 8.17 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.48 dBm
M1 1.9082490 GHz
ndB 26.00 dB
Bw 20.145000000 MHz
Q factor 94.7
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.9 GHz
691 pts
Span 60.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.908249 GHz 17.48 dBm ndB down 20.145 MHz
T1 1 1.890014 GHz -9.28 dBm ndB 26.00 dB
T2 1 1.910159 GHz -9.70 dBm Q factor 94.7

Fig.2

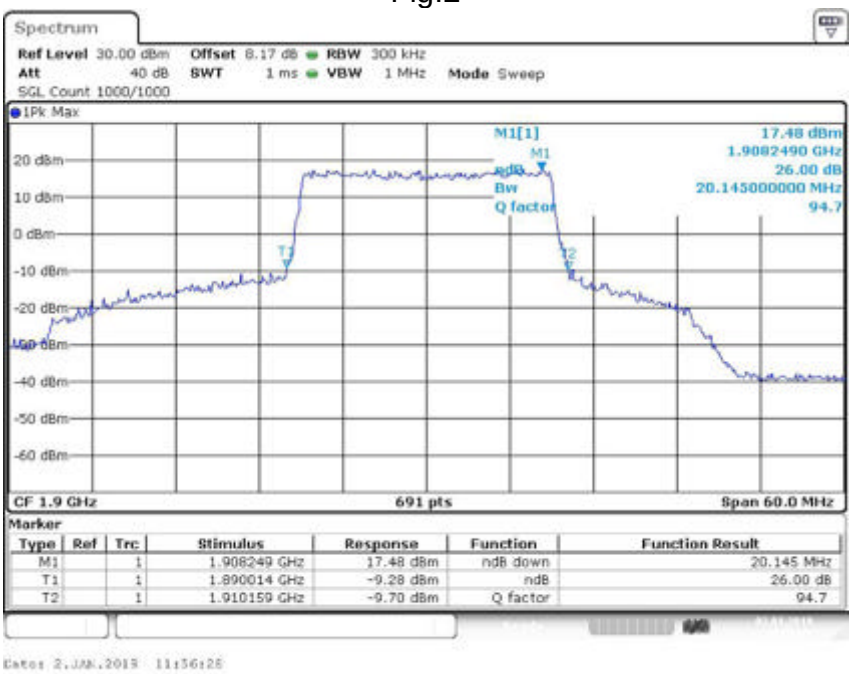
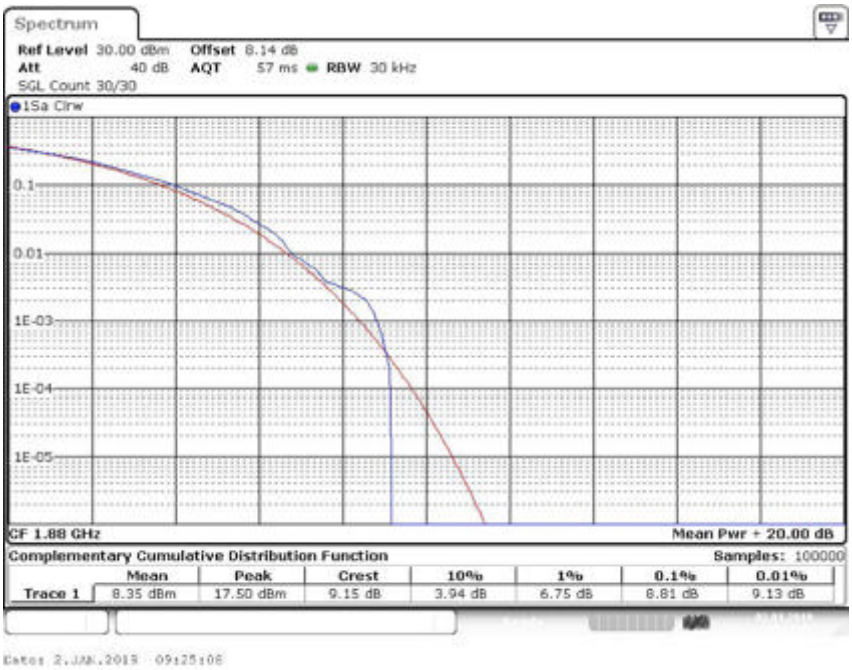

Spectrum
Ref Level 30.00 dBm Offset 8.17 dB RBW 300 kHz
Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep
SGL Count 1000/1000
1Pk Max
M1[1] 17.48 dBm
M1 1.9082490 GHz
ndB 26.00 dB
Bw 20.145000000 MHz
Q factor 94.7
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 1.9 GHz
691 pts
Span 60.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 1.908249 GHz 17.48 dBm ndB down 20.145 MHz
T1 1 1.890014 GHz -9.28 dBm ndB 26.00 dB
T2 1 1.910159 GHz -9.70 dBm Q factor 94.7

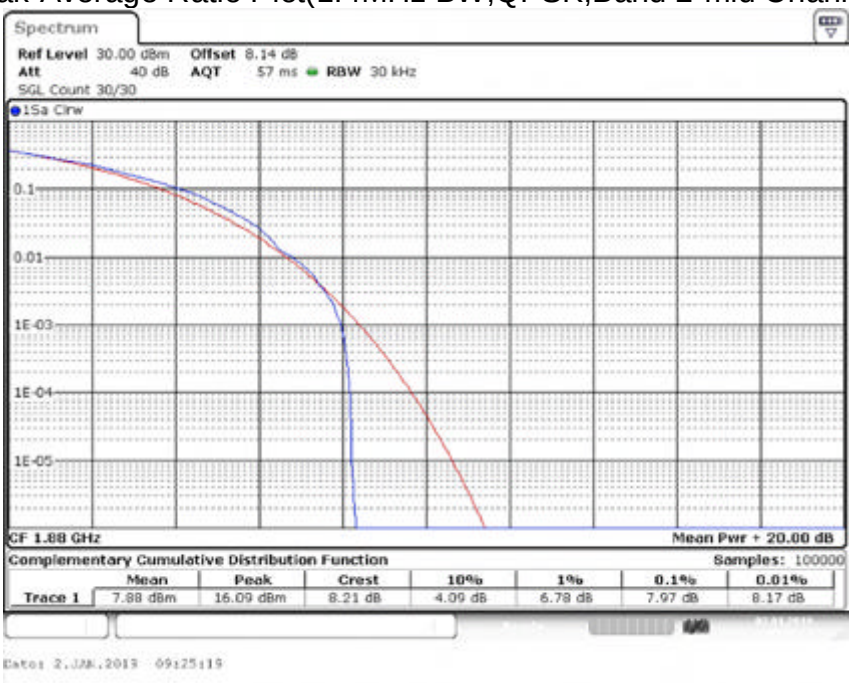
Fig.3

4 Peak-Average Ratio

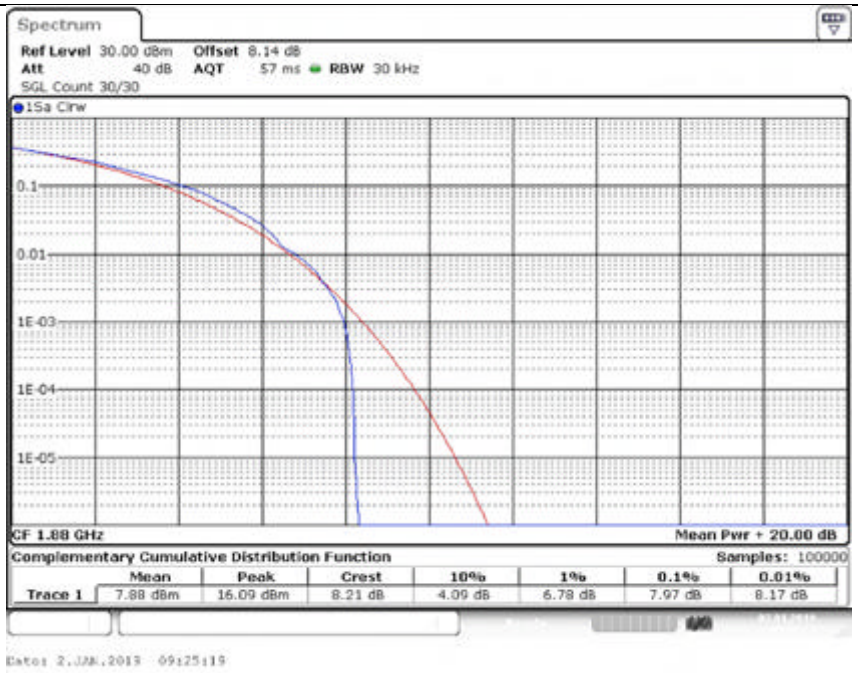
Test result:



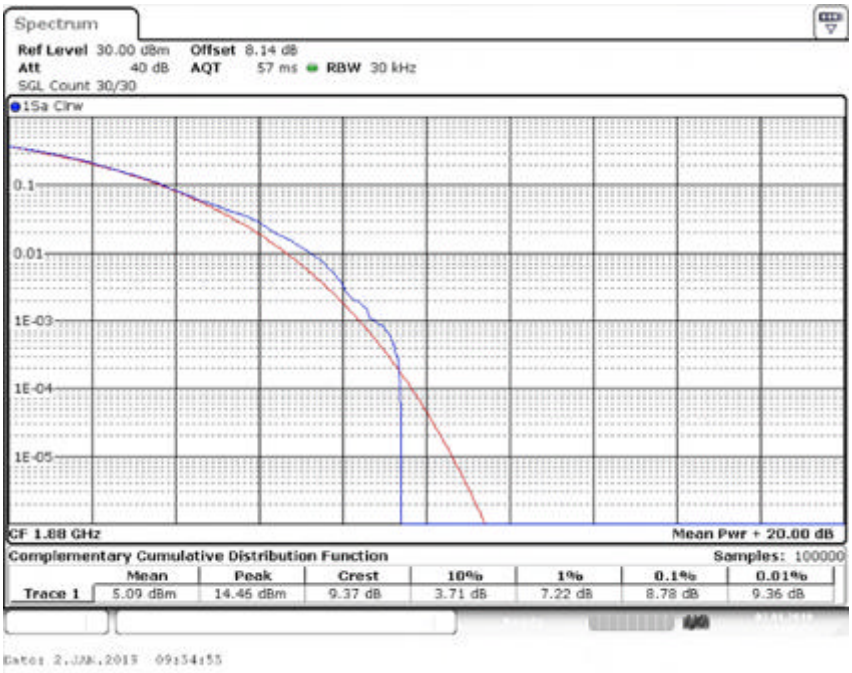
Peak-Average Ratio Plot(1.4MHz BW,QPSK,Band 2-mid Channel)



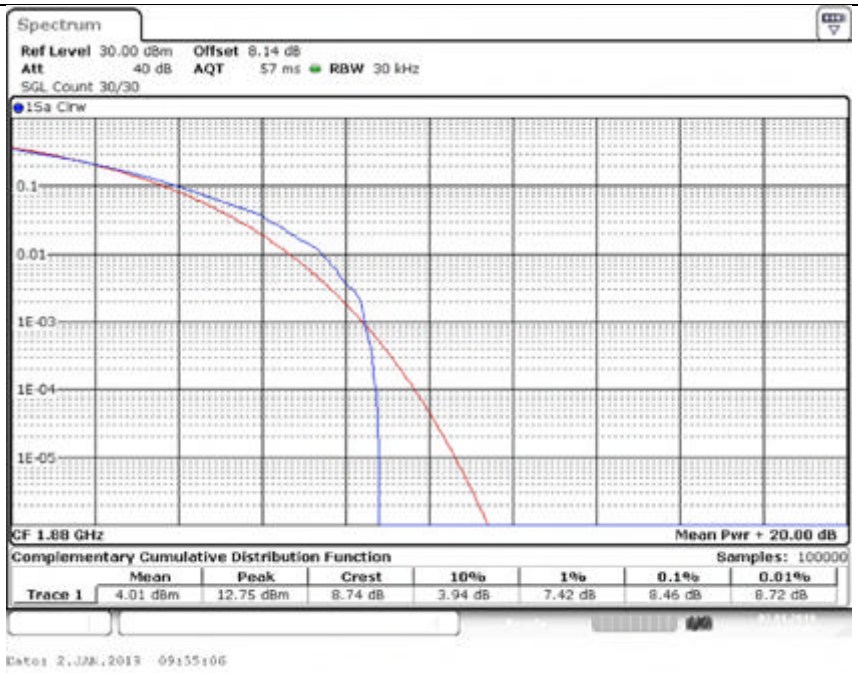
Peak-Average Ratio Plot(1.4MHz BW,16QAM,Band 2-mid Channel)



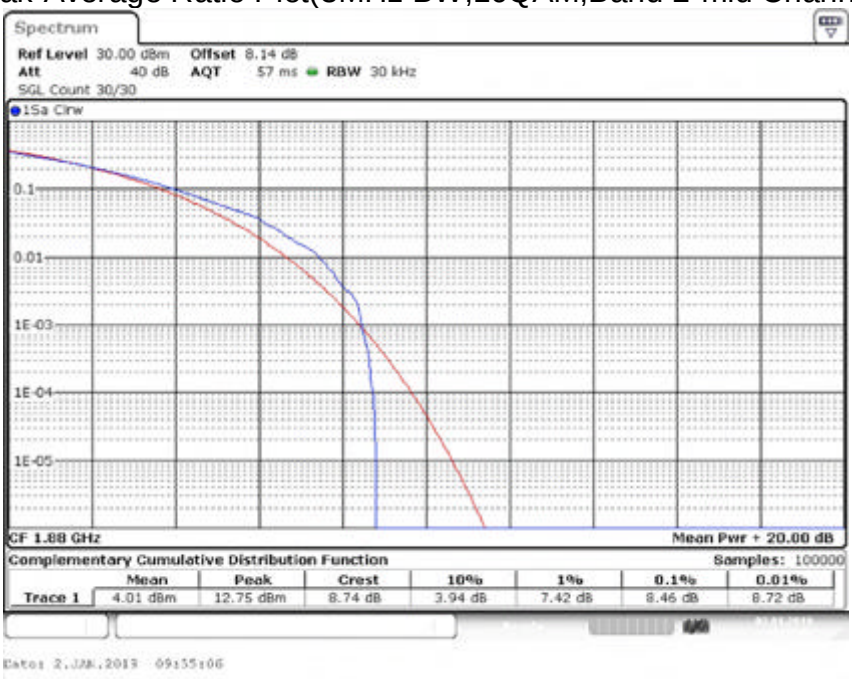
Peak-Average Ratio Plot(1.4MHz BW,64QAM,Band 2-mid Channel)



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(3MHz BW,64QAM,Band 2-mid Channel)