



Registration
No.910917

TEST REPORT FOR RF TESTING

Report No.: SRTC2017-9004(F)-17061902(C)

Product Name: Smart Lock

Product Model: TWX4G02

Applicant: Dongxia Datong(Beijing) Management and Consulting Co.,Ltd

Manufacturer: Dongxia Datong(Beijing) Management and Consulting
Co.,Ltd

Specification: FCC Part 24E, Part 2, Part 27 (October, 2016 edition) FCC

ID: 2AMBSTWX4G02-1

The State Radio_monitoring_center Testing Center (SRTC) 15th

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1. GENERAL INFORMATION

1.1 Notes of the test report

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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
City:	Beijing
Country or Region:	P.R.China
Contacted person:	liujia
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1.3 Applicant's details

Company:	Dongxia Datong(Beijing) Management and Consulting Co.,Ltd
Address:	11th Floor, Ideal Plaza, No.58, North 4th Ring Road West, Haidian District, Beijing, P.R. China
City:	Beijing
Country or Region:	China
Grantee Code:	2AMBS
Contacted person:	jinjie
Tel:	010-82577380
Fax:	010-82577380
Email:	jinjie@ofo.com

1.4 Manufacturer's details

Company:	Dongxia Datong(Beijing) Management and Consulting Co.,Ltd
Address:	11th Floor, Ideal Plaza, No.58, North 4th Ring Road West, Haidian District, Beijing, P.R. China
City:	Beijing
Country or Region:	China
Contacted person:	jinjie
Tel:	010-82577380
Fax:	010-82577380
Email:	jinjie@ofo.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2017.06.19
Testing Start Date:	2017.06.27
Testing End Date:	2017.07.05

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	38
Maximum Extreme	80	---
Minimum Extreme	-40	---

Normal Supply Voltage (V d.c.):	3.6
Maximum Extreme Supply Voltage (V d.c.):	3.8
Minimum Extreme Supply Voltage (V d.c.):	2.4

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 12: Tx:699~716MHz Rx:729~746MHz LTE Band 13: Tx:777~787MHz Rx:746~756MHz
Modulation Type	QPSK 16QAM
Duplex Mode	FDD
Antenna Type	Fixed Internal Antenna
Power Supply	Battery
HW Version	V1.2
SW Version	V1.0.1
IMEI	865235030003566

2.2 Summary table.

FCC Rule Part	Frequency Range(MHz)	Output Power(W)	Frequency Tolerance	Emission Designator	Emission Bandwidth (MHz)	Communication Type
LTE BAND2						
24E	1850.7-1909.3	0.02	0.003	1M40G7D	1.4M	QPSK
	1850.7-1909.3	0.02	0.003	1M40W7D	1.4M	16QAM
LTE BAND4						
27L	1710.7-1754.3	0.02	0.002	1M40G7D	1.4M	QPSK
	1710.7-1754.3	0.02	0.002	1M40W7D	1.4M	16QAM
LTE BAND12						
27	699.7-715.3	0.02	0.003	1M40G7D	1.4M	QPSK
	699.7-715.3	0.01	0.003	1M40W7D	1.4M	16QAM
LTE BAND13						
27	777.7-786.3	0.02	0.010	1M40G7D	1.4M	QPSK
	777.7-786.3	0.01	0.010	1M40W7D	1.4M	16QAM

2.3 Support Equipment

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

Equipment	Battery
Manufacturer	EVE Energy CO.,Ltd.
Model Number	ER34615
Serial Number	----

3 REFERENCE SPECIFICATION

Specification	Version	Title
2.1046	July 7, 1998	Measurements required: RF power output.
2.1049	July 7, 1998	Measurements required: Occupied bandwidth.
2.1051	July 7, 1998	Measurements required: Spurious emissions at antenna terminals.
2.1053	July 7, 1998	Measurements required: Field strength of spurious radiation.
2.1055	Dec. 9, 2003	Measurements required: Frequency stability.
24.232	May 2, 2008	Power and antenna height limits.
24.235/27.54	N/A	Frequency stability.
24.238	Dec. 17, 2002	Emission limitations for Broadband PCS equipment.
27.50	Apr. 7, 1997	Power limits and duty cycle.
27.53	Apr. 7, 1997	Emission limits.

4 KEY TO NOTES AND RESULT CODES

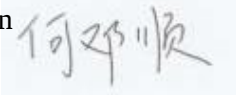
The following are the definition of the test result.

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	24.232(c) /27.50(d)(4)	Pass
3	Occupied Bandwidth	2.1049/27.53(h)(1)	Pass
4	Peak-Average Ratio	27.50(d)(5)	Pass
5	Emission Bandwidth	24.238(b)	Pass
6	Spurious Emissions at antenna terminals	2.1051/24.238(a)/ 27.53(h)	Pass
7	Band Edges Compliance	2.1051/24.238(a)/ 27.53(h)	Pass
8	Frequency Stability	2.1055/24.235/27.54	Pass
9	Radiated Spurious Emissions	2.1053/24.238(a)/ 27.53(h), 27.53(g)	Pass

This Test Report Is Issued by: Mr. Peng Zhen 	Checked by: Ms. Liu Jia 
Tested by: Mr. He Dengshun 	Issued date: 20170706

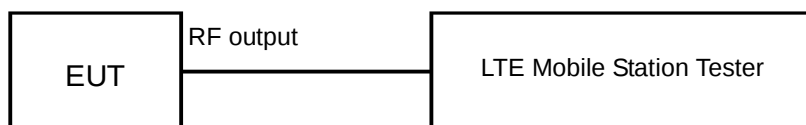
6 TEST RESULT

6.1 RF Power Output-FCC Part 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.

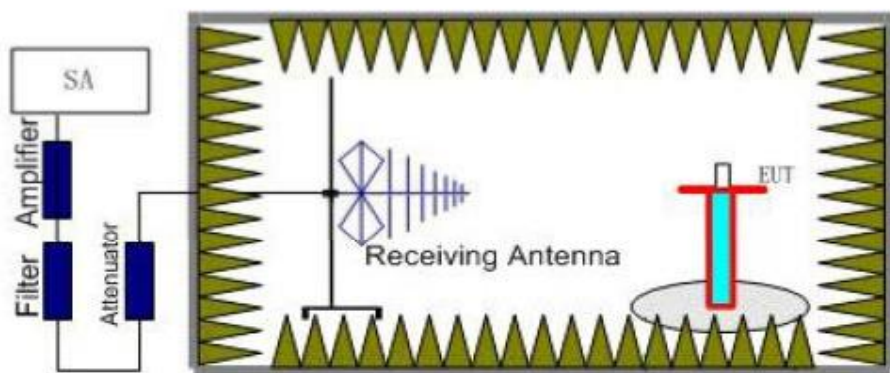
Limits	≤30dBm
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6.2 Effective Radiated Power-FCC Part 24.232(c)/27.50(d)(4)

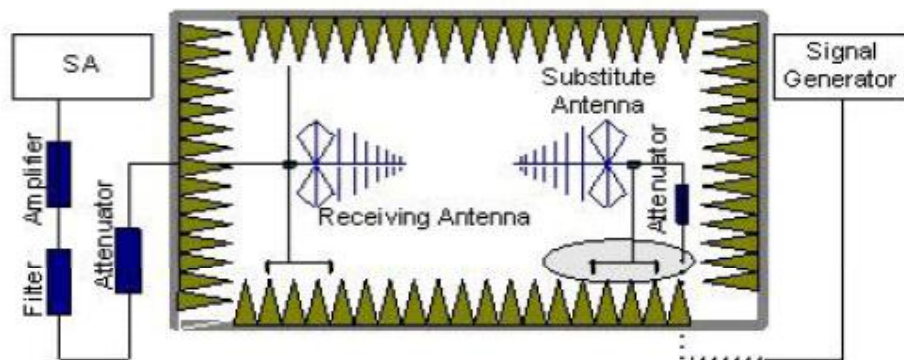
Ambient condition:

Temperature	Relative humidity	Pressure
20.8°C	36.5%	100.9kPa

Test setup:



Step 1



Step 2

Test procedure:

The measurements procedures in TIA-603D 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 (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).

The measurement results are obtained as described below:

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

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, $\text{ERP} = \text{EIRP} - 2.15 \text{ (dB)}$.

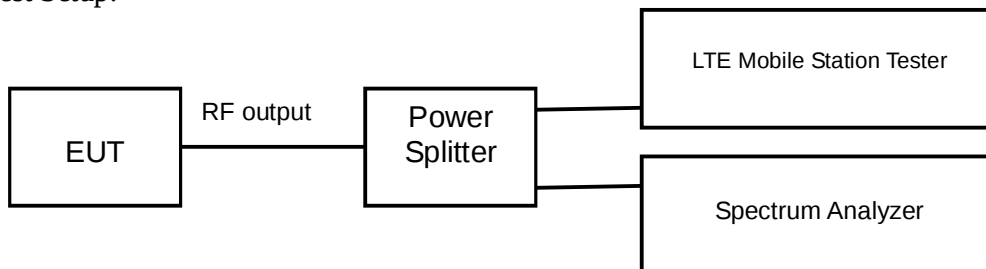
Limits	≤30dBm
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6.3 Occupied Bandwidth-FCC Part 2.1049/27.53(h)(1)

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)

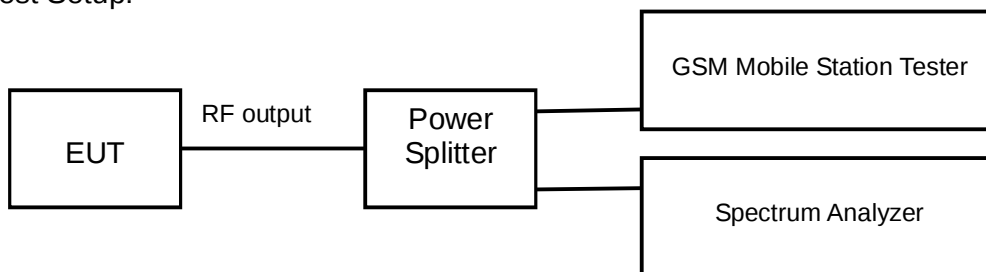
Limits: No specific occupied bandwidth requirements in part 2.1049

6.4 Emission Bandwidth-FCC Part /24.238(b)

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 3kHz on spectrum analyzer. The bandwidth of -26dB transmitter power can be read on spectrum analyzer.

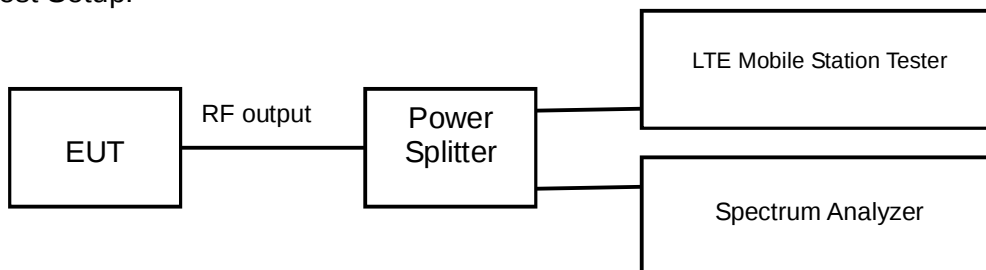
Limits: No specific emission bandwidth requirements

6.5 Peak-Average Ratio -FCC Part 27.50(d)(5)

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 30kHz on spectrum analyzer. The Peak-Average Ratio can be read on spectrum analyzer.

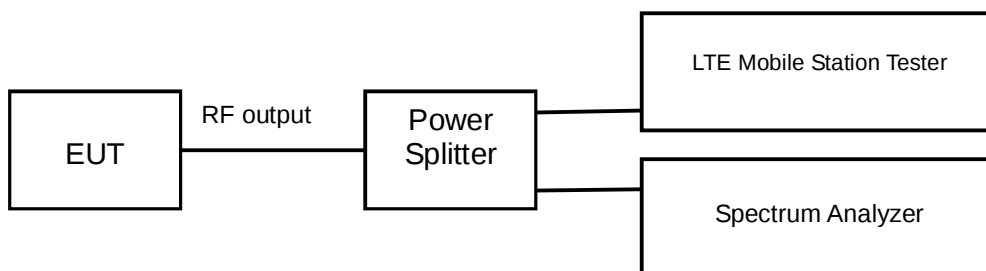
Limits	$\leq 13\text{dB}$
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6.6 Spurious Emissions at antenna terminal-FCC Part 2.1051/24.238(a)/ 27.53(h)

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 26GHz (higher than the 10th harmonic of the carrier). The peak detector is used and RBW is set to 1MHz on spectrum analyzer.

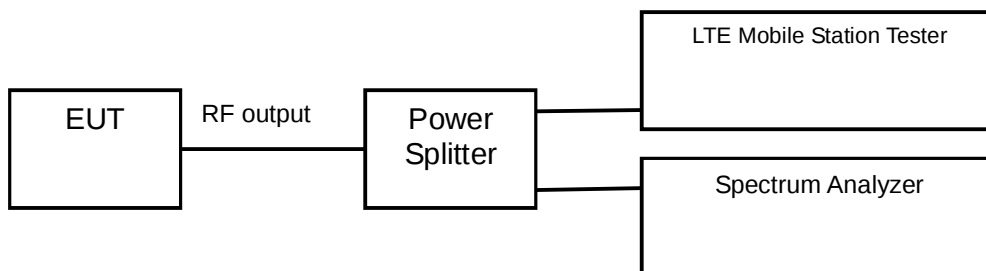
Limits	$\leq -13\text{dBm}$
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6.7 Band Edges Compliance-FCC Part 2.1051/24.238(a)/27.53(h)

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.

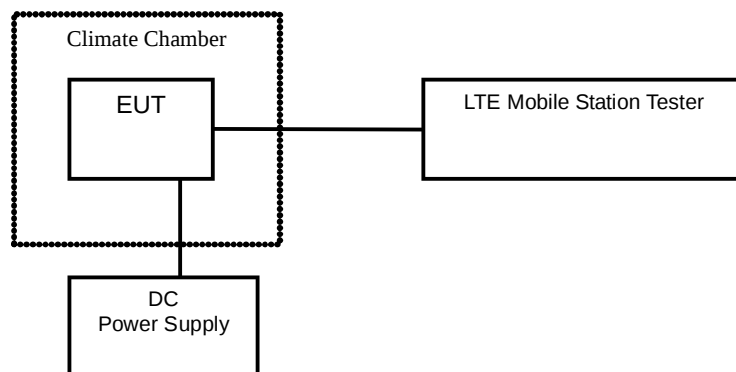
Limits	≤-13dBm
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6.8 Frequency Stability-FCC Part 2.1055/24.235/27.54

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 (Bottom, middle and top channels).

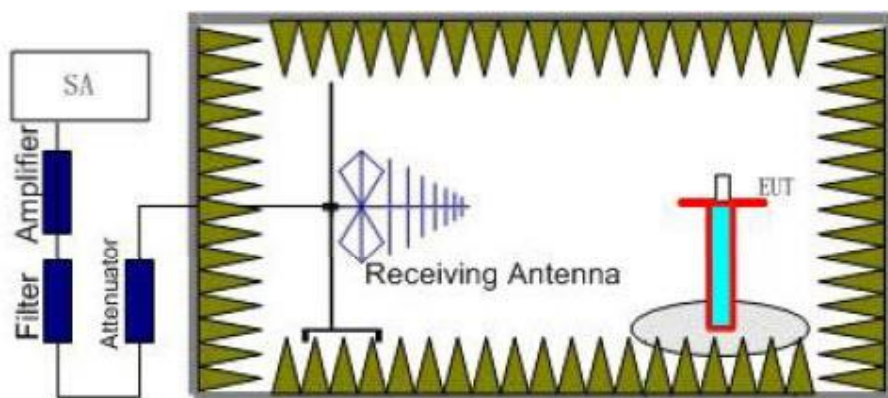
Limits: No specific frequency stability requirements in part 2.1055

6.9 Radiated Spurious Emissions-FCC Part 2.1053/24.238(a)/27.53(h), 27.53(g)

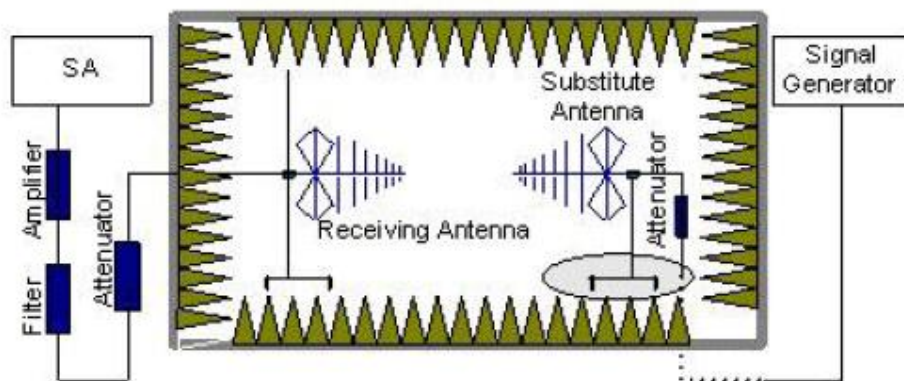
Ambient condition:

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 26GHz (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 (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).

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:

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

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 (dB).

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

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

7 MEASUREMENT UNCERTAINTIES

Items	Uncertainty	
RF Power Output	U=0.6 dB	
Occupied Bandwidth	3kHz	
Spurious Emissions	9kHz~2GHz	U=1.2dB
	2G~3.6GHz	U=1.4dB
	3.6G~8GHz	U=2.2dB
	8G~12.75GHz	U=2.7dB
Band Edges Compliance	1.2dB	
Frequency Stability	U=48 Hz	

8 TEST EQUIPMENTS

No.	Name/Model	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
1	Mobile Station Tester	SP8010B	E0095	2016.09.24	2017.09.24
2	N9020A Spectrum Analyzer	Agilent	MY48010771	2016.08.20	2017.08.20
3	DC Power Supply E3645A	Agilent	MY43007648	2016.08.20	2017.08.20
4	Power Splitter 11850C	Agilent	19632	2016.08.20	2017.08.20
5	Temperature chamber SH241	ESPEC	92013758	2016.08.20	2017.08.20
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	2016.08.20	2017.08.20
10	HL562 Ultra log antenna	R&S	100016	2016.08.20	2017.08.20
11	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2016.08.20	2017.08.20
12	ESI 40 EMI test receiver	R&S	100015	2016.08.20	2017.08.20
13	Radio tester	CMU 200	114667	2016.08.20	2017.08.20
14	Spectrum Analyzer	FSV40	101065	2016.08.20	2017.08.20

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 C – TEST SETUP

Please refer to the attachment.

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

1 RF Power Output-FCC Part 2.1046

Test result:

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
12	699.7	23017	1.4	1	0	10.6	7.1
				1	5	7.1	7.1
				3	2	7.1	7.1
				6	0	7.1	7.1

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
12	707.5	23095	1.4	1	0	3.6	3.7
				1	5	3.7	3.6
				3	2	3.7	3.6
				6	0	3.7	3.7

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
12	715.3	23173	1.4	1	0	13.2	9.9
				1	5	9.7	9.9
				3	2	9.8	9.9
				6	0	9.9	9.9

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
13	777.7	23187	1.4	6	0	13.7	10.6

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
13	782.0	23230	1.4	6	0	10.4	10.3

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
13	786.3	23273	1.4	6	0	10.4	9.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
2	1850.7	18607	1.4	1	0	10.2	13.6
				1	5	13.6	13.6
				3	2	13.6	13.6
				6	0	13.6	13.6

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
2	1909.3	19193	1.4	1	0	6.8	9.4
				1	5	10.2	9.4
				3	2	10.2	9.4
				6	0	10.2	9.4

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
2	1880	18900	1.4	1	0	9.2	8.7
				1	5	9.0	8.7
				3	2	9.1	8.7
				6	0	8.8	8.8

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
4	1710.7	19957	1.4	1	0	13.3	13.3
				1	5	13.3	13.4
				3	2	13.3	13.4
				6	0	13.4	13.4

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
4	1732.5	20175	1.4	1	0	5.1	4.9
				1	5	5.0	4.9
				3	2	4.9	4.9
				6	0	5.0	4.9

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	RF Power Output (dBm)	
						QPSK	16-QAM
4	1754.3	20393	1.4	1	0	5.6	5.5
				1	5	5.6	5.5
				3	2	5.6	5.5
				6	0	5.6	5.6

2 Occupied Bandwidth-FCC Part 2.1049/27.53(h)(1)

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
12	699.7	23017	1.4	1	0	1.082	Fig.1	1.082	Fig.5
				1	5	1.070	Fig.2	1.082	Fig.6
				3	2	1.088	Fig.3	1.088	Fig.7
				6	0	1.094	Fig.4	1.094	Fig.8

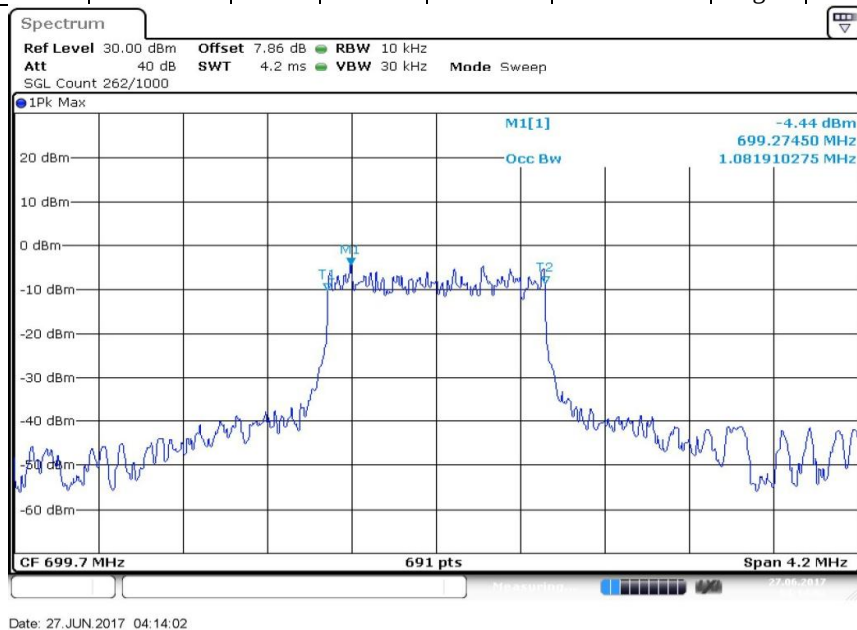


Fig.1

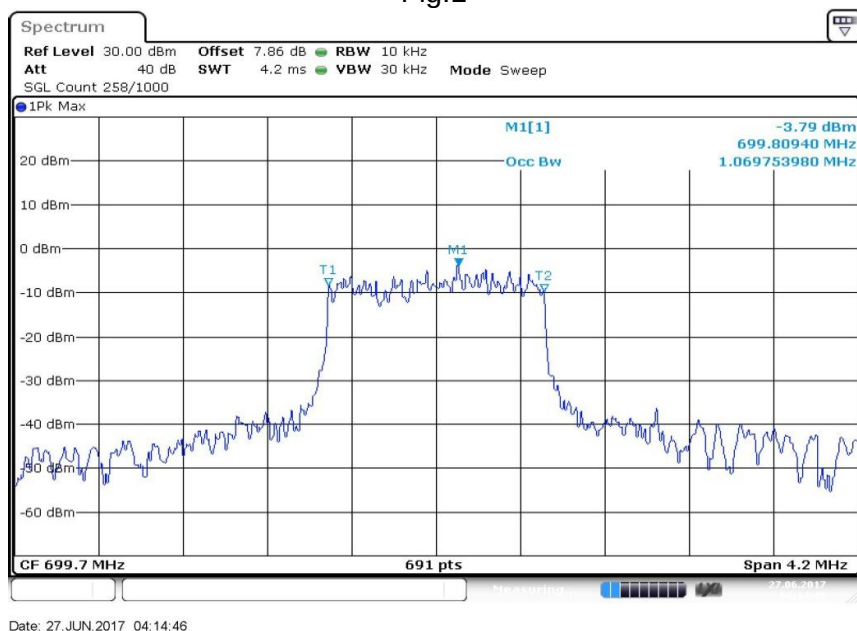


Fig.2



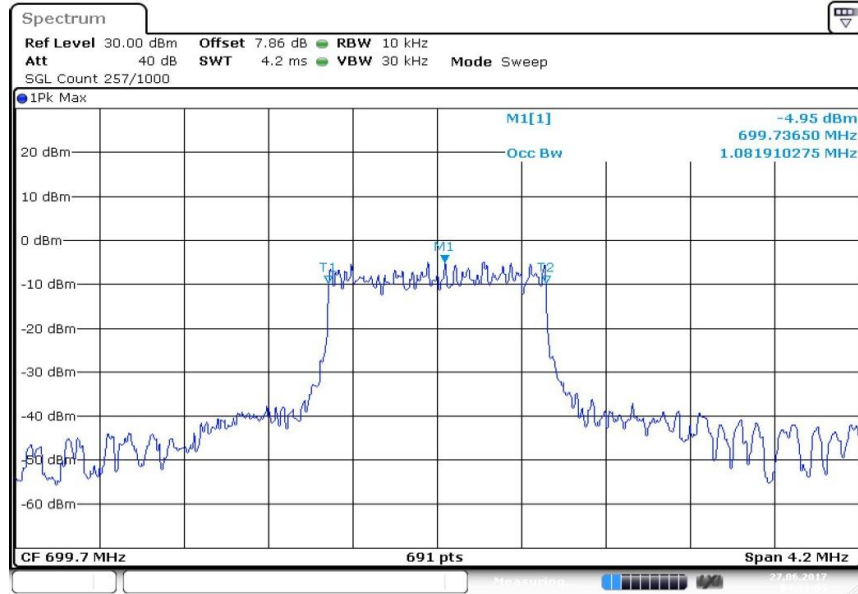
Date: 27 JUN 2017 04:15:29

Fig.3



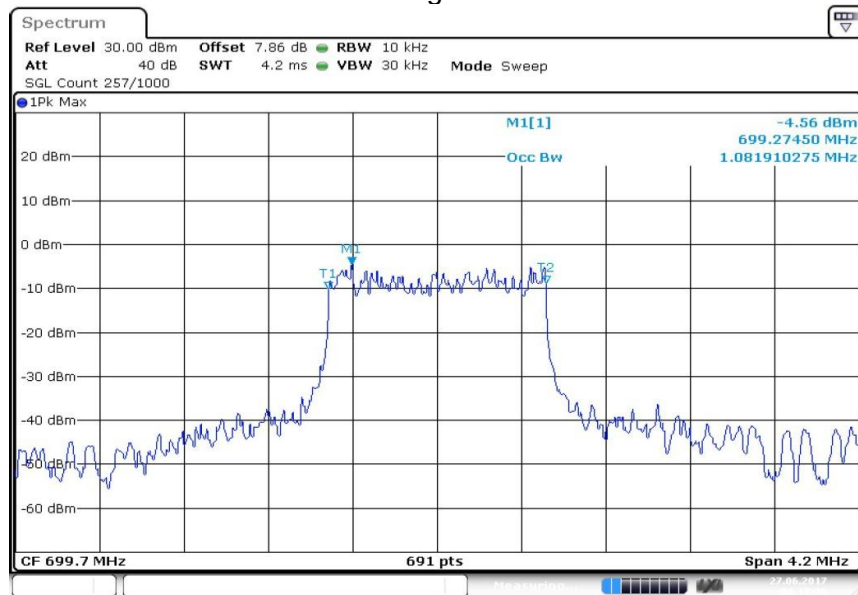
Date: 27 JUN 2017 04:16:12

Fig.4



Date: 27 JUN 2017 04:16:55

Fig.5



Date: 27 JUN 2017 04:17:38

Fig.6

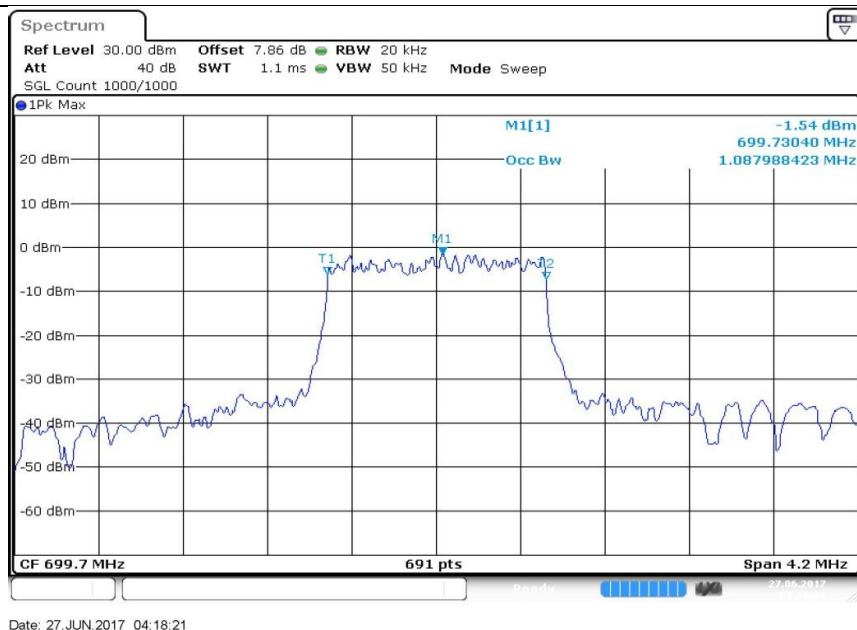


Fig.7



Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
12	707.5	23095	1.4	1	0	1.082	Fig.1	1.082	Fig.5
				1	5	1.082	Fig.2	1.082	Fig.6
				3	2	1.088	Fig.3	1.082	Fig.7
				6	0	1.094	Fig.4	1.094	Fig.8

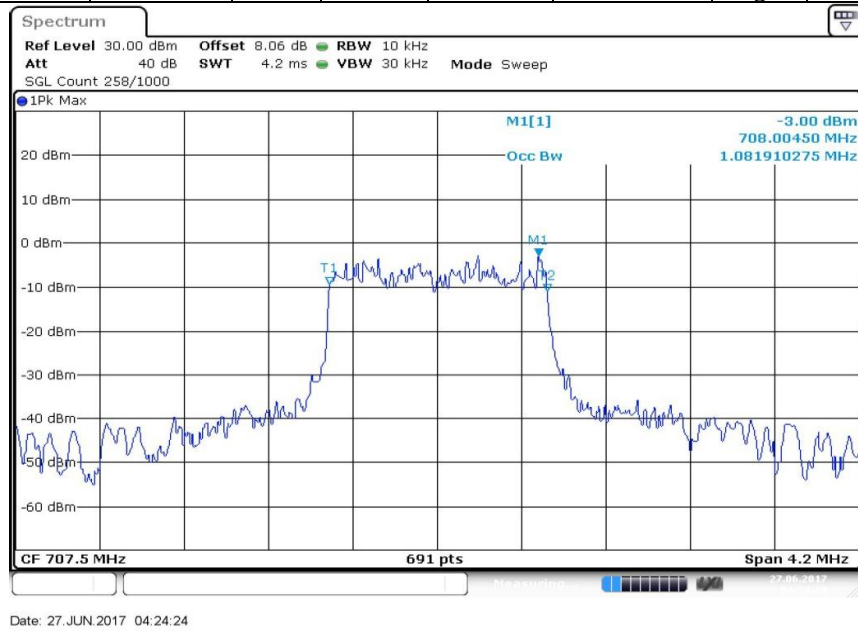


Fig.1

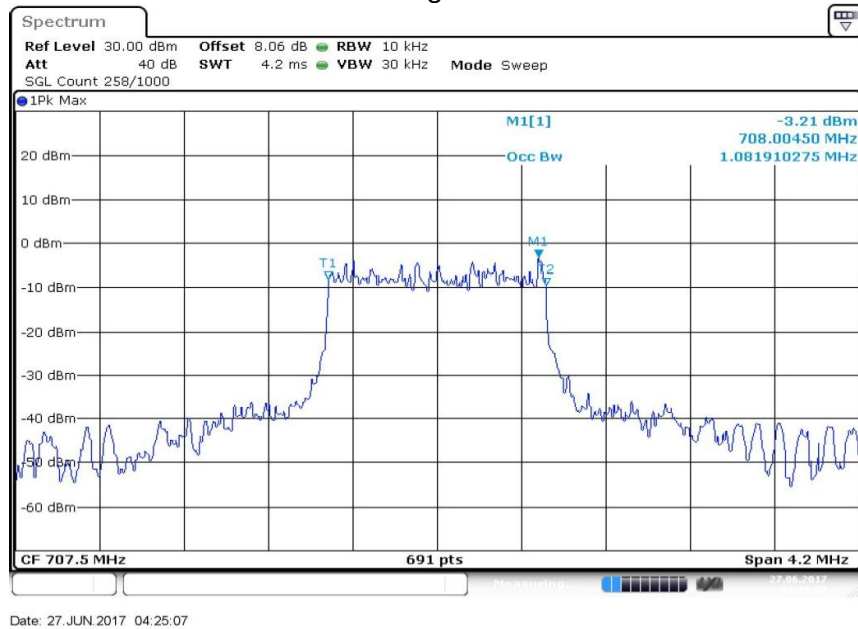


Fig.2

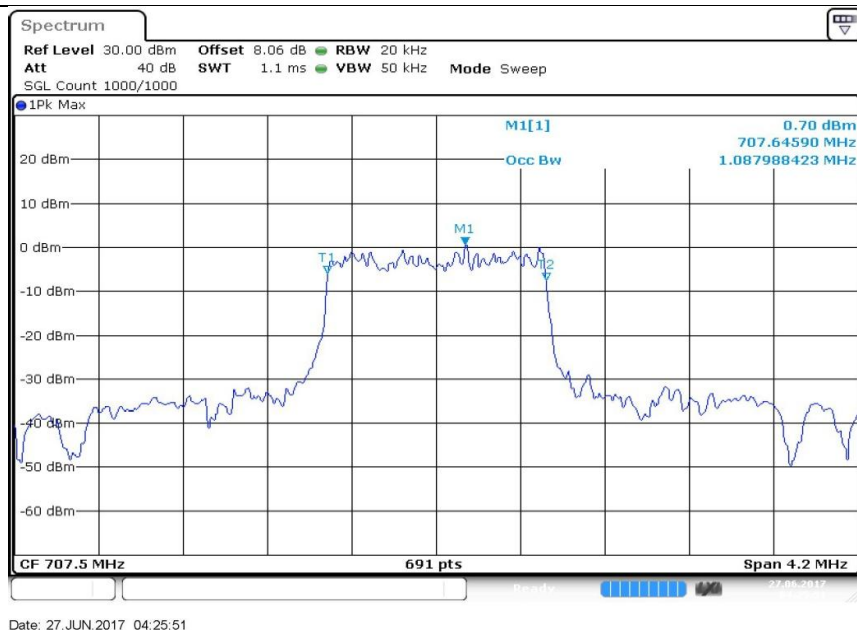


Fig.3

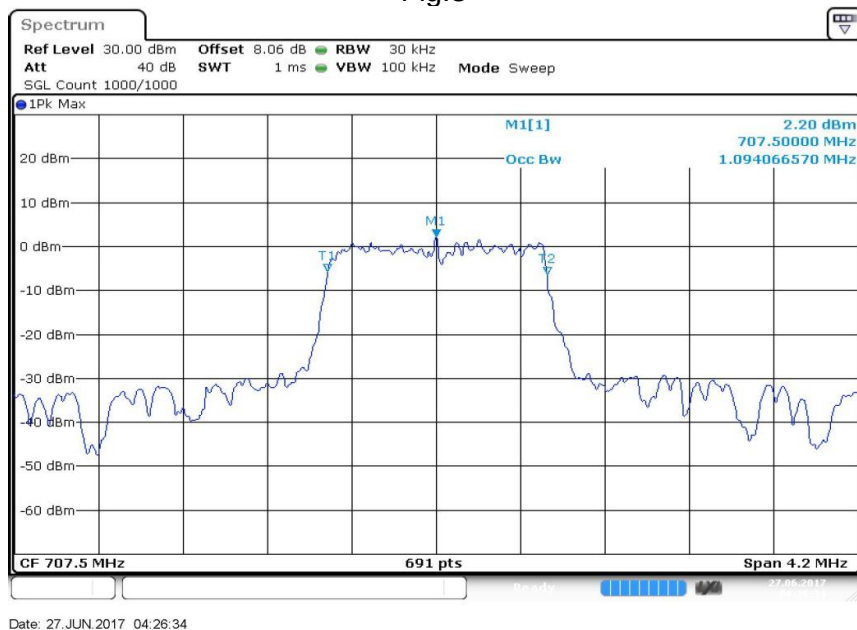


Fig.4



Fig.5

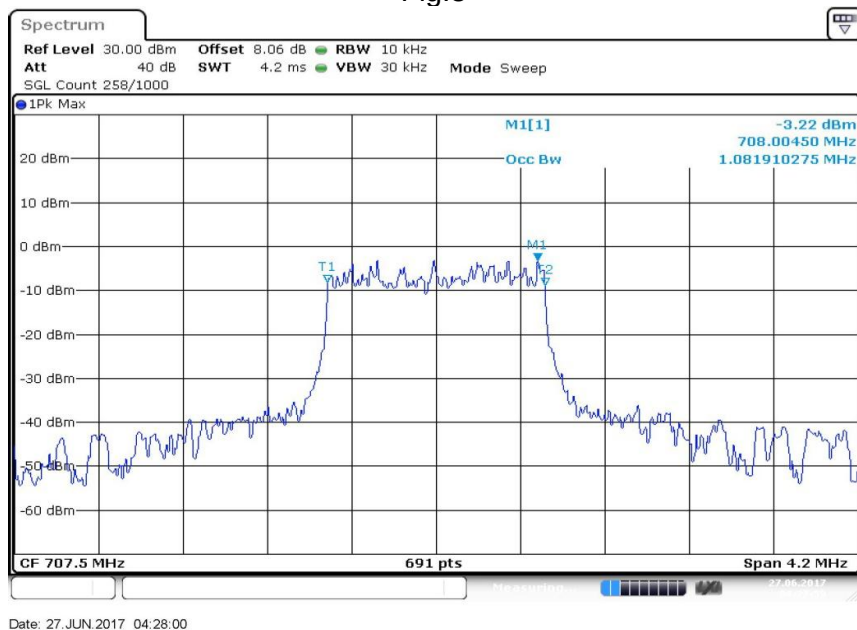


Fig.6

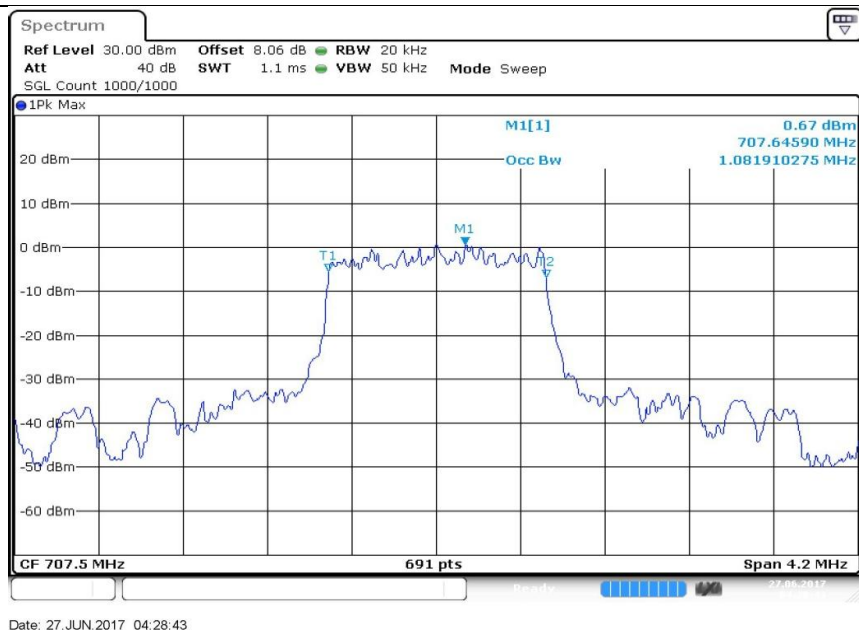


Fig.7

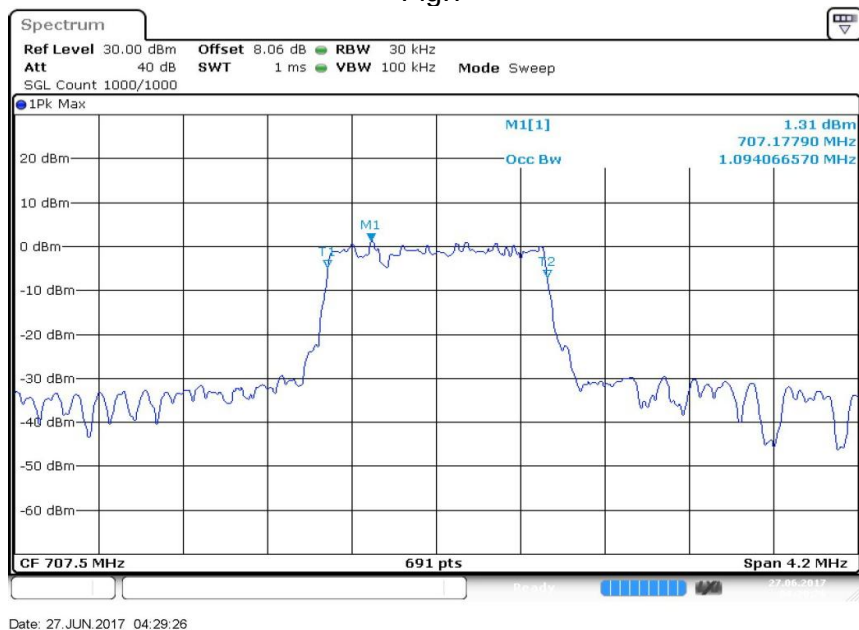


Fig.8

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
12	715.3	23173	1.4	1	0	0.213	Fig.1	0.207	Fig.5
				1	5	0.140	Fig.2	0.207	Fig.6
				3	2	0.577	Fig.3	0.559	Fig.7
				6	0	1.088	Fig.4	1.088	Fig.8

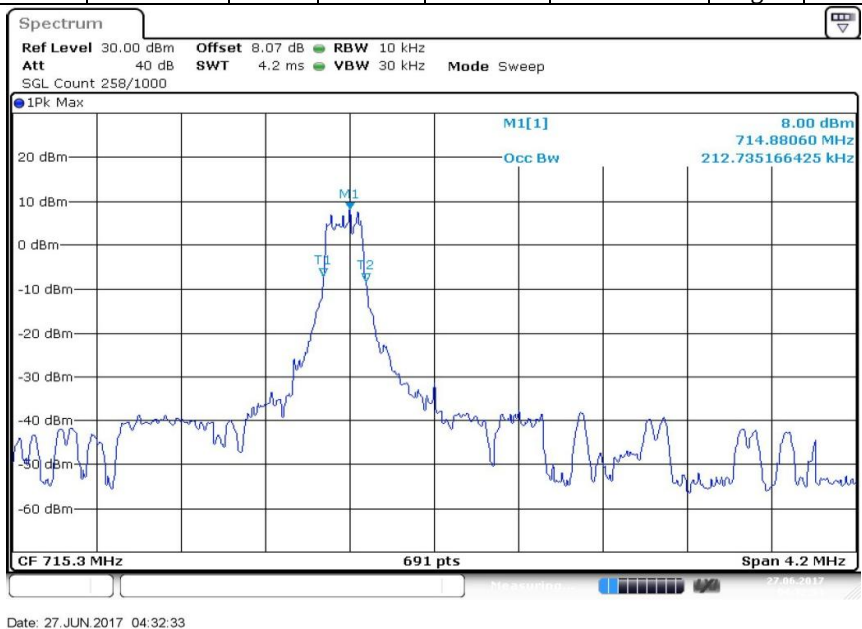


Fig.1



Fig.2

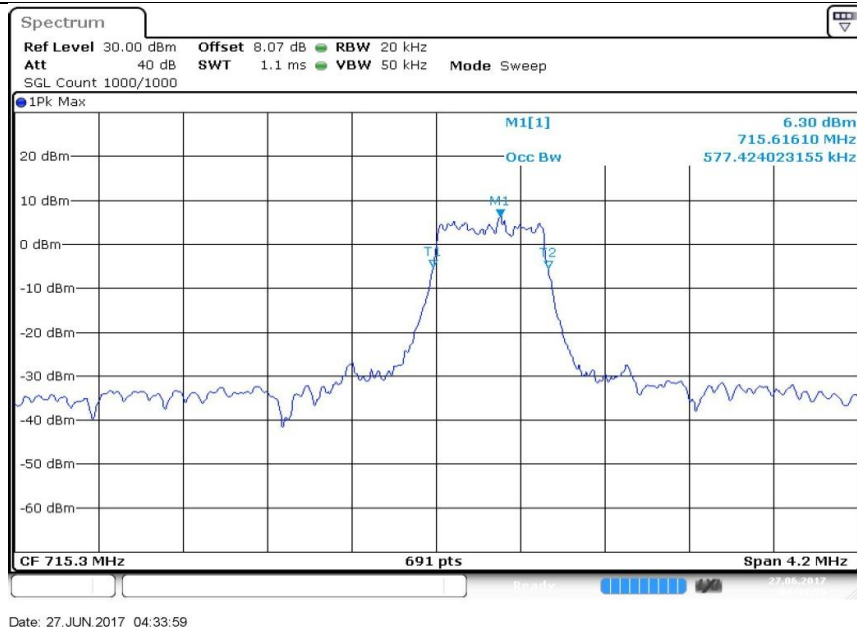


Fig.3

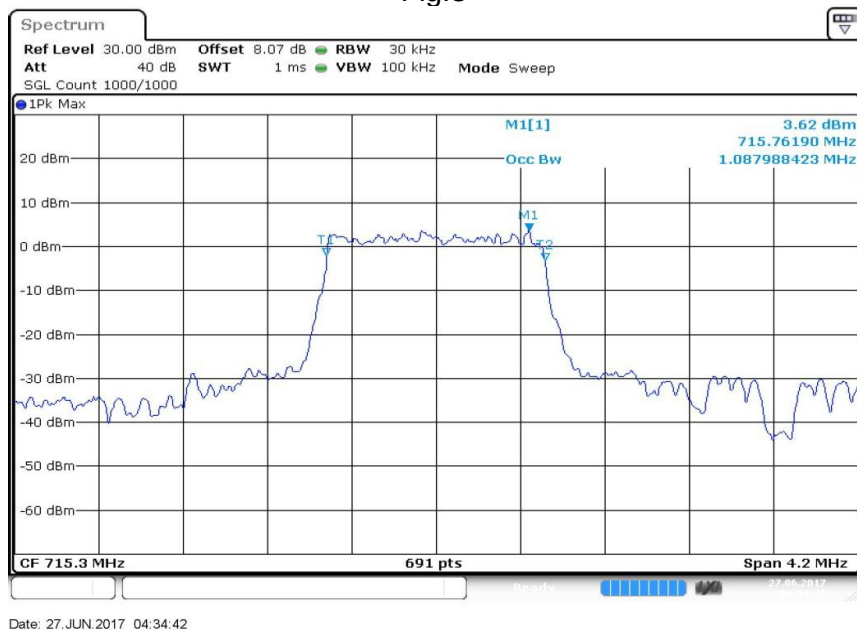


Fig.4



Date: 27 JUN 2017 04:35:25

Fig.5



Date: 27 JUN 2017 04:36:08

Fig.6



Fig.7

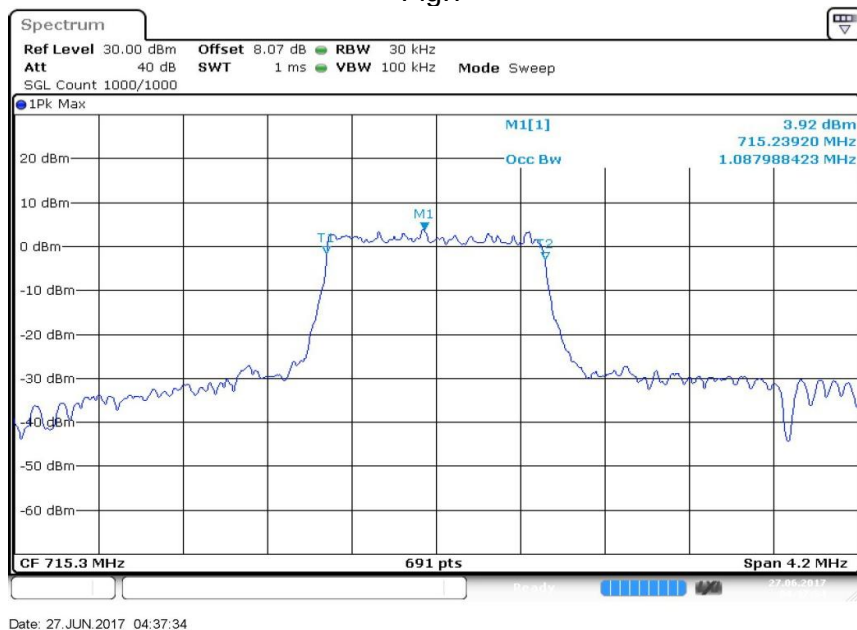


Fig.8

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
13	777.7	23187	1.4	6	0	1.124	Fig.1	1.124	Fig.2

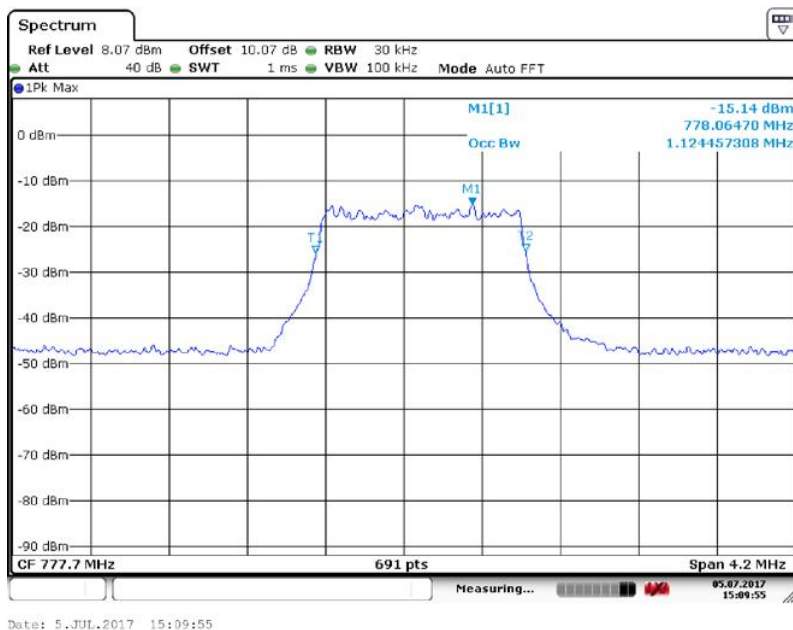


Fig.1

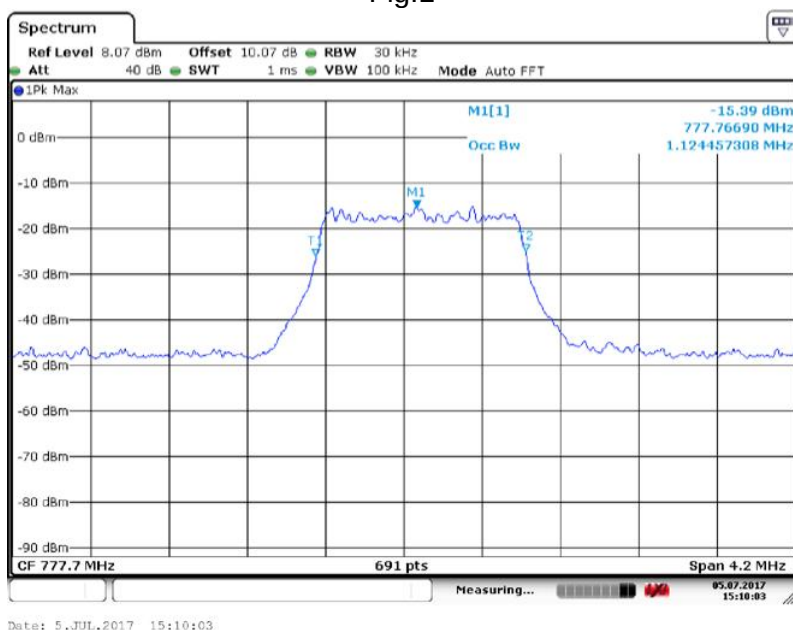


Fig.2

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
13	782.0	23230	1.4	6	0	1.143	Fig.1	1.137	Fig.2

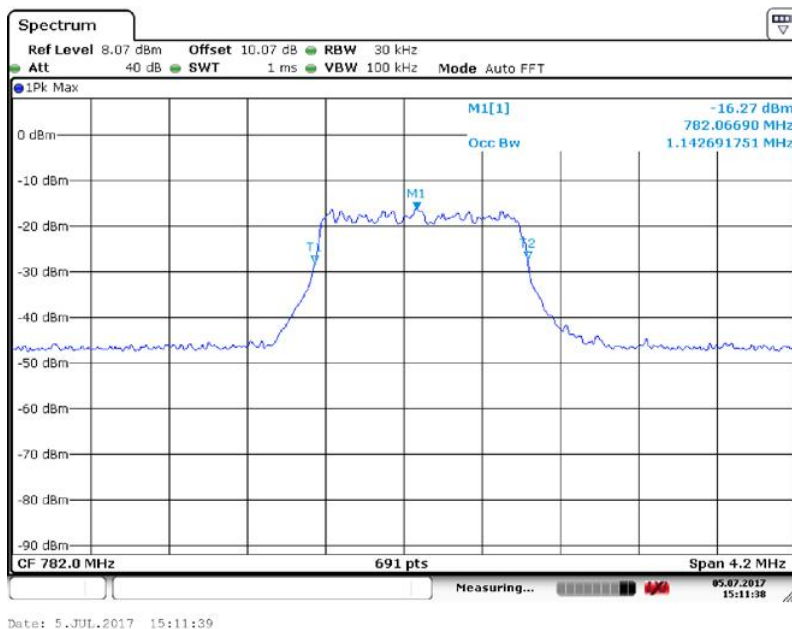


Fig.1

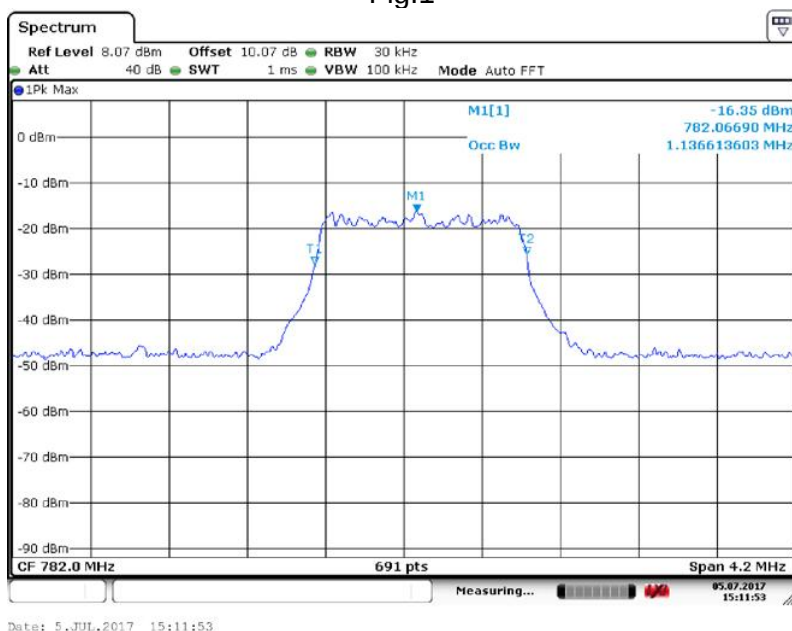


Fig.2

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
13	786.3	23273	1.4	6	0	1.155	Fig.1	1.137	Fig.2

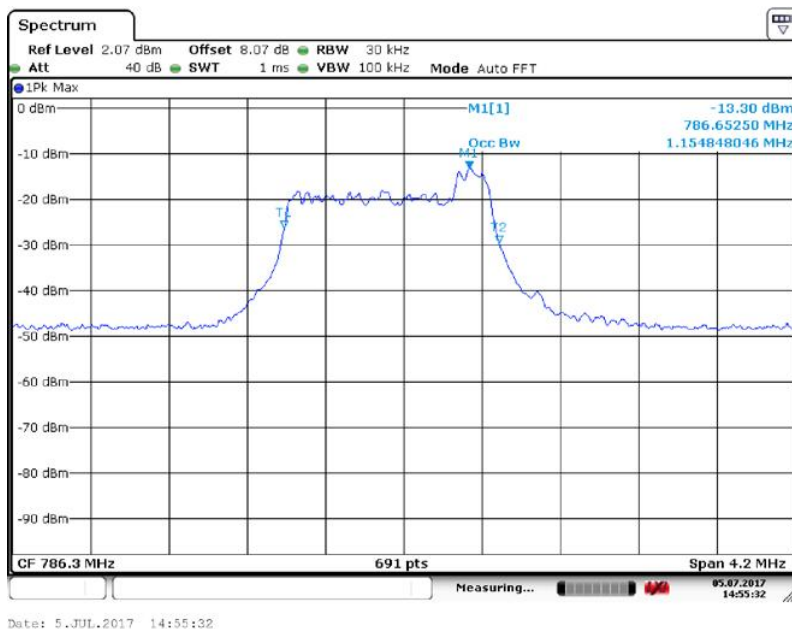


Fig.1

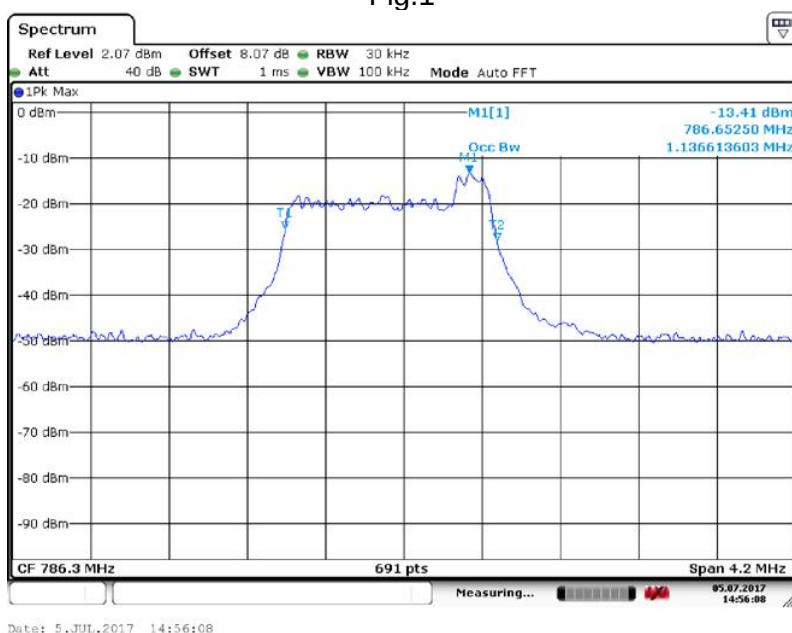
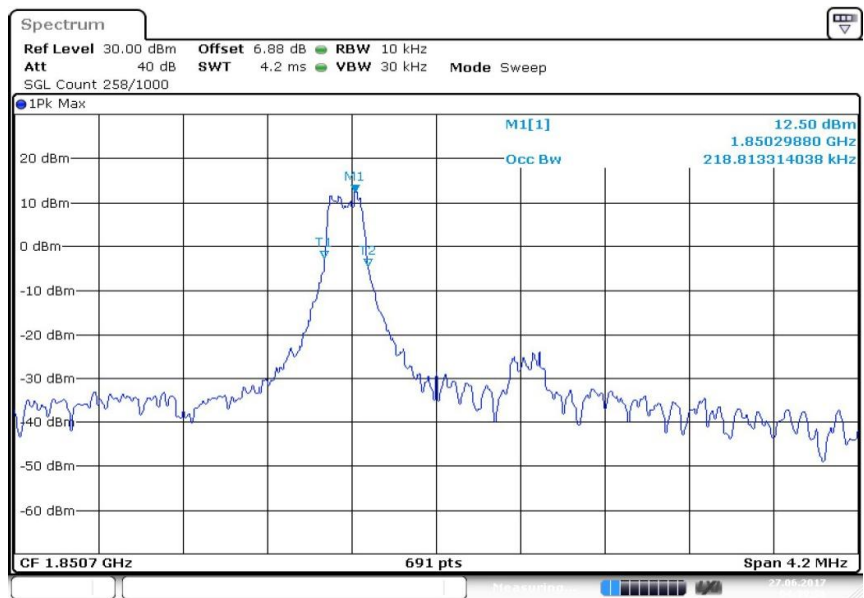


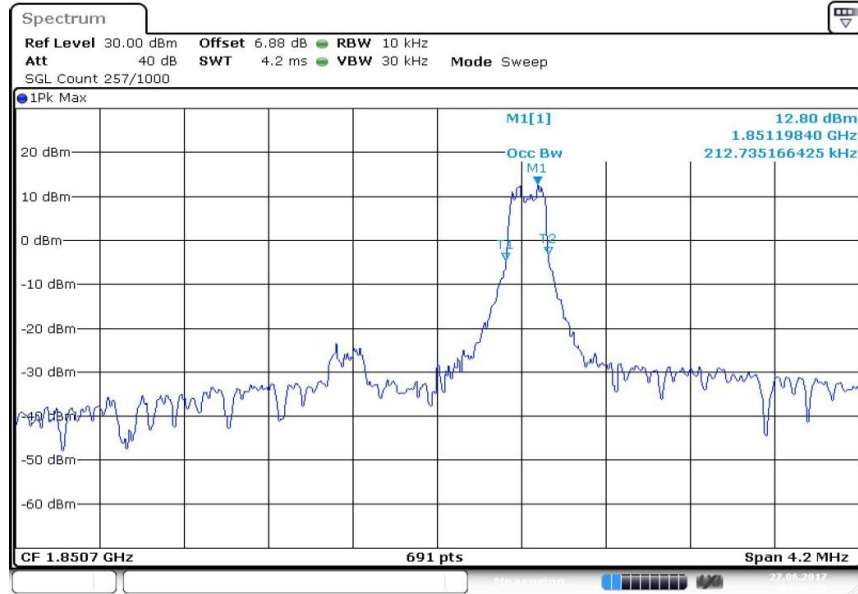
Fig.2

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	1	0	0.219	Fig.1	0.225	Fig.5
				1	5	0.213	Fig.2	0.207	Fig.6
				3	2	0.577	Fig.3	0.590	Fig.7
				6	0	1.094	Fig.4	1.094	Fig.8



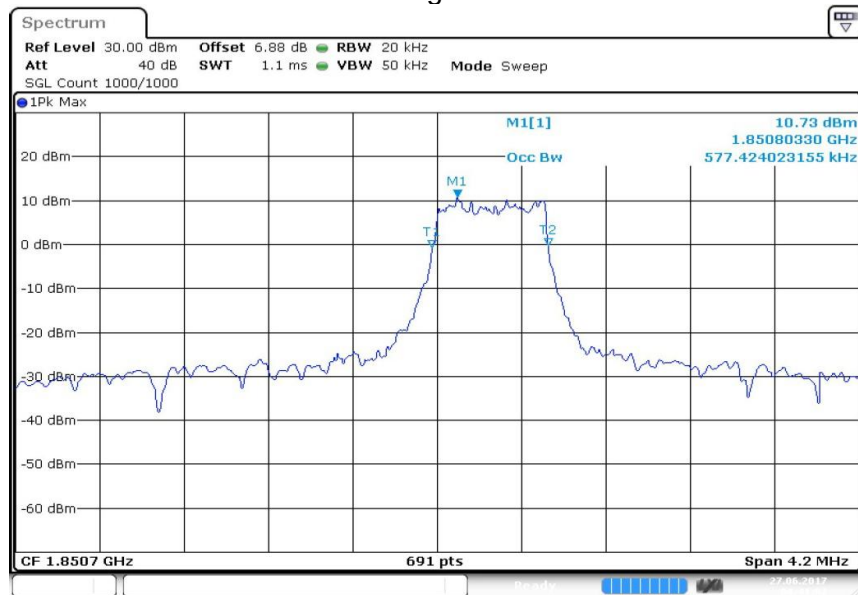
Date: 27 JUN 2017 04:39:36

Fig.1



Date: 27 JUN 2017 04:40:19

Fig.2



Date: 27 JUN 2017 04:41:02

Fig.3

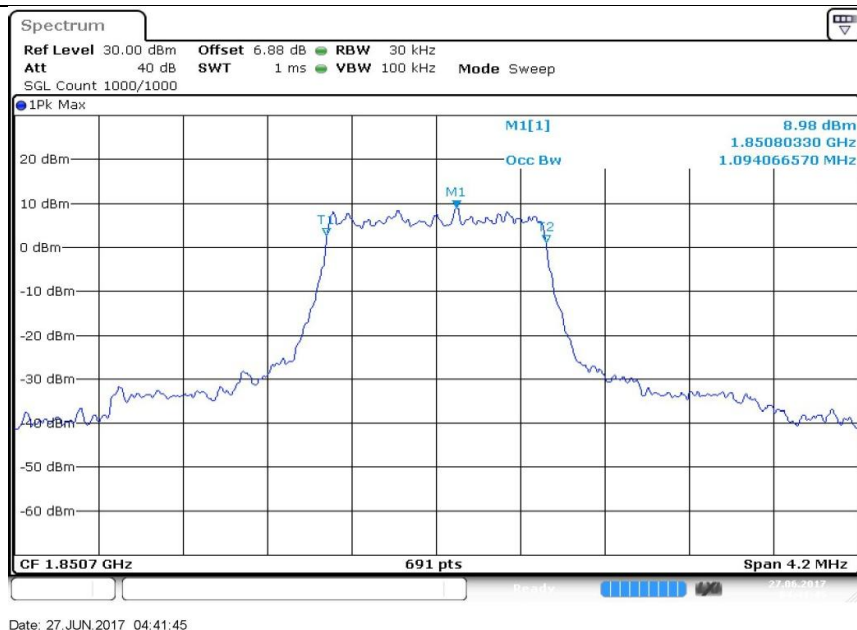


Fig.4

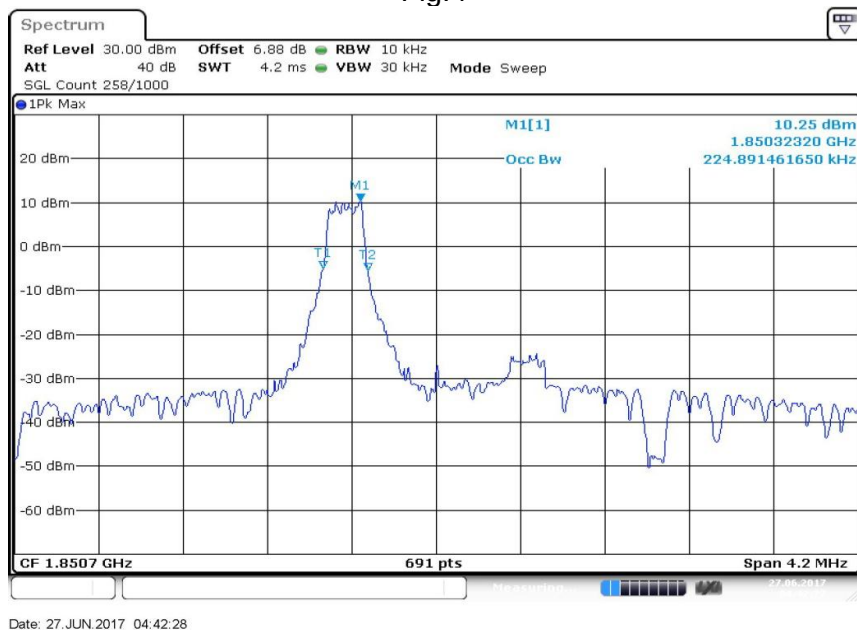


Fig.5

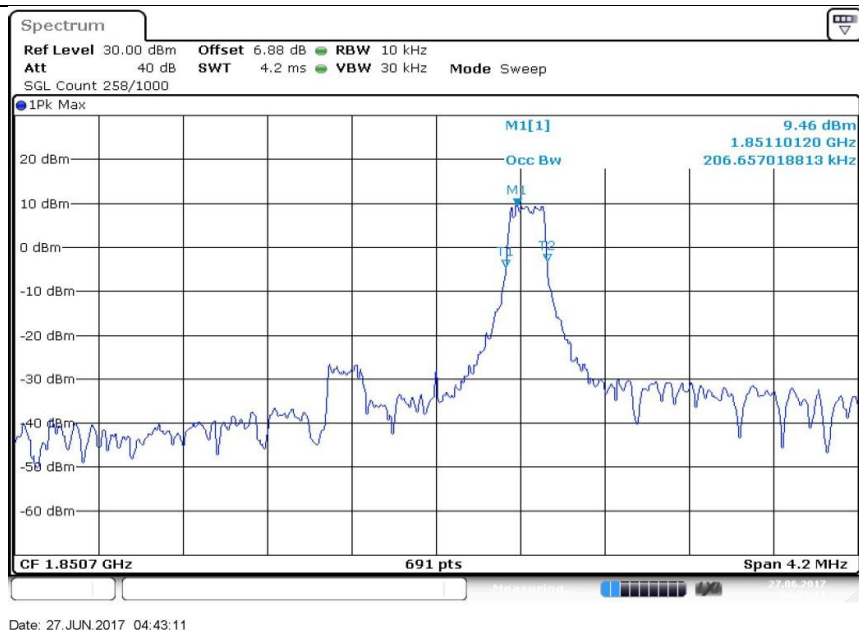


Fig.6



Fig.7

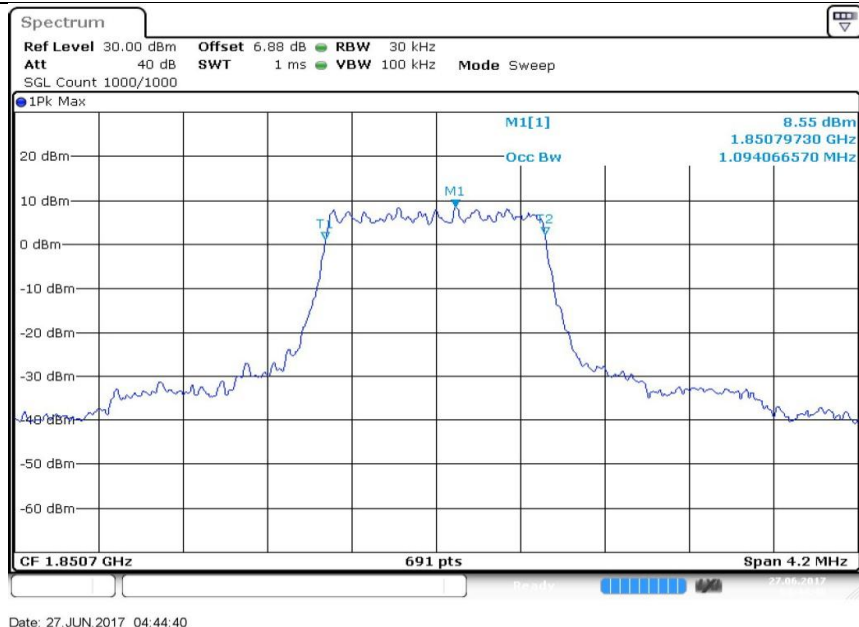
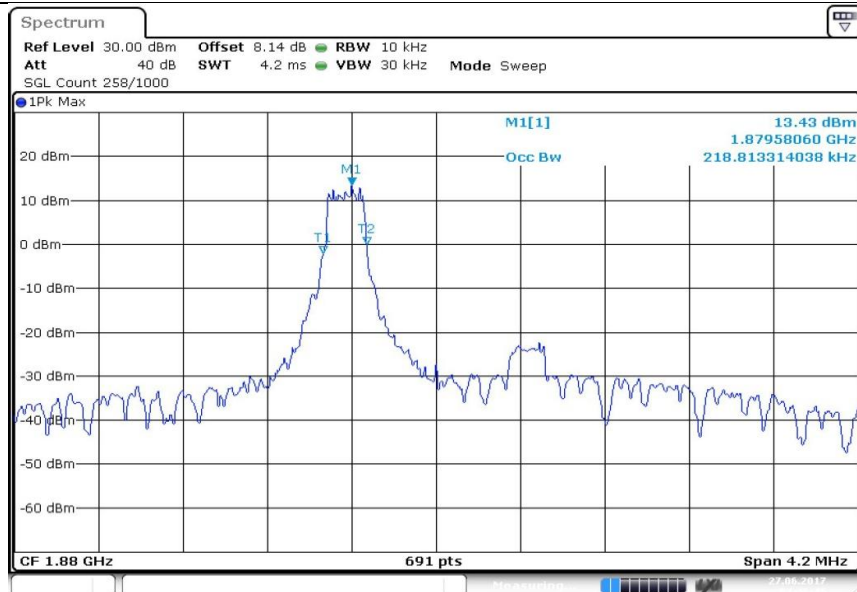


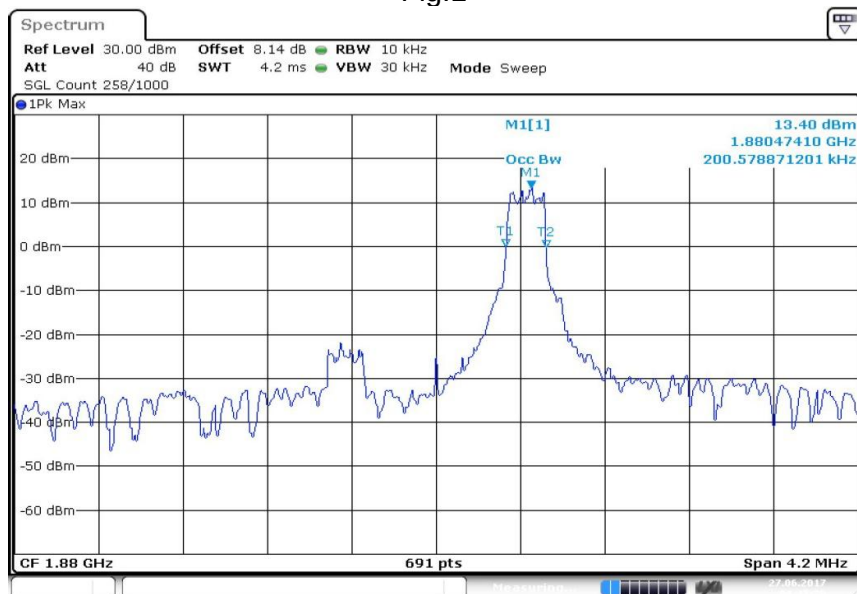
Fig.8

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)			
						QPSK		16-QAM	
2	1880	18900	1.4	1	0	0.225	Fig.1	0.219	Fig.5
				1	5	0.201	Fig.2	0.213	Fig.6
				3	2	0.565	Fig.3	0.571	Fig.7
				6	0	1.094	Fig.4	1.094	Fig.8



Date: 27 JUN 2017 04:46:45

Fig.1



Date: 27 JUN 2017 04:47:28

Fig.2

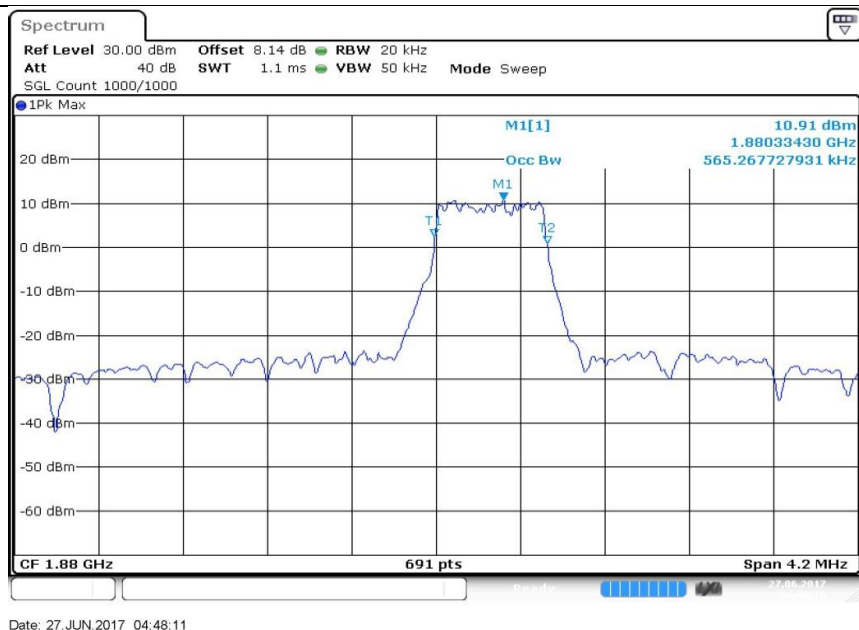


Fig.3

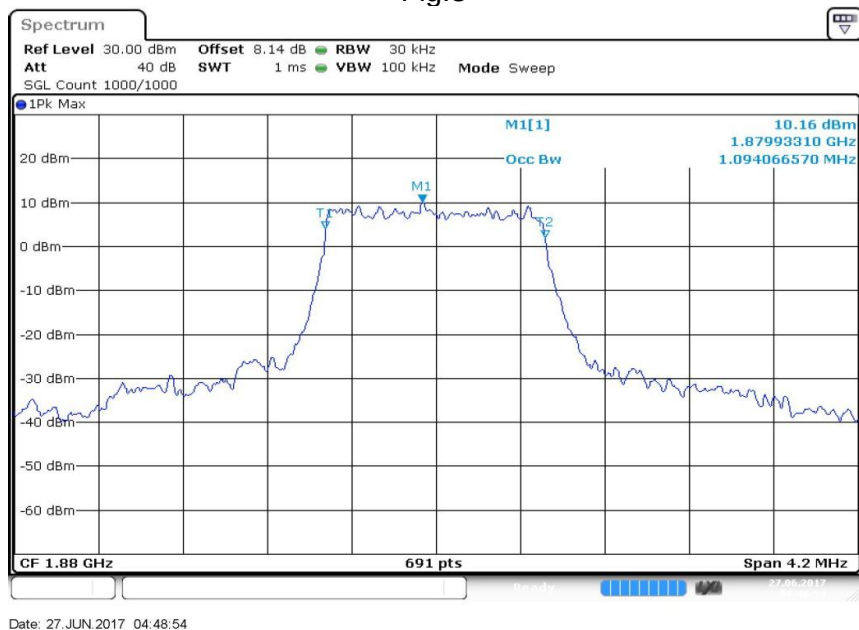


Fig.4

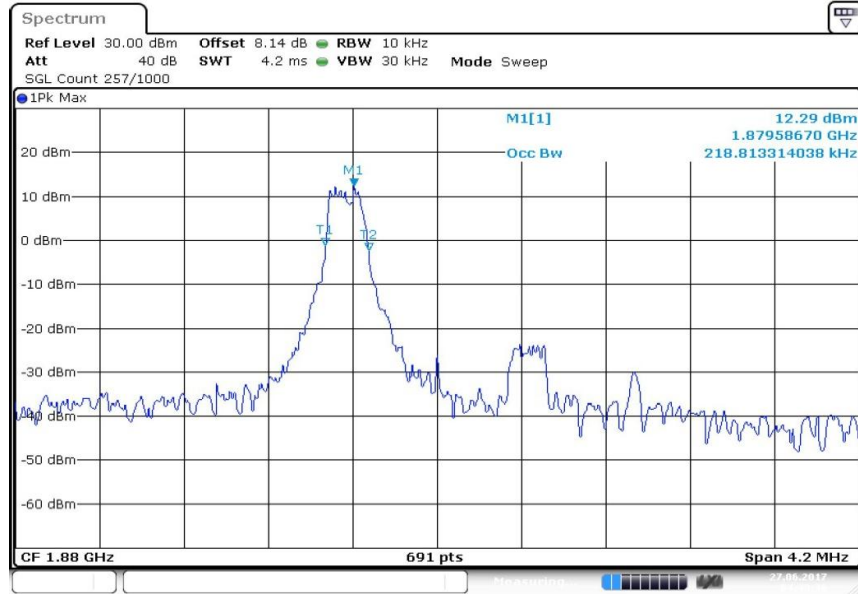


Fig.5

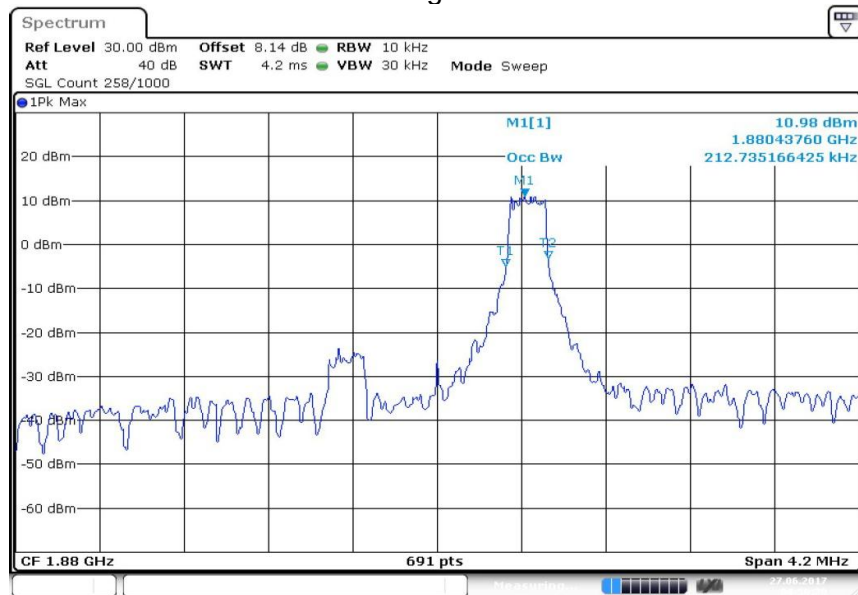
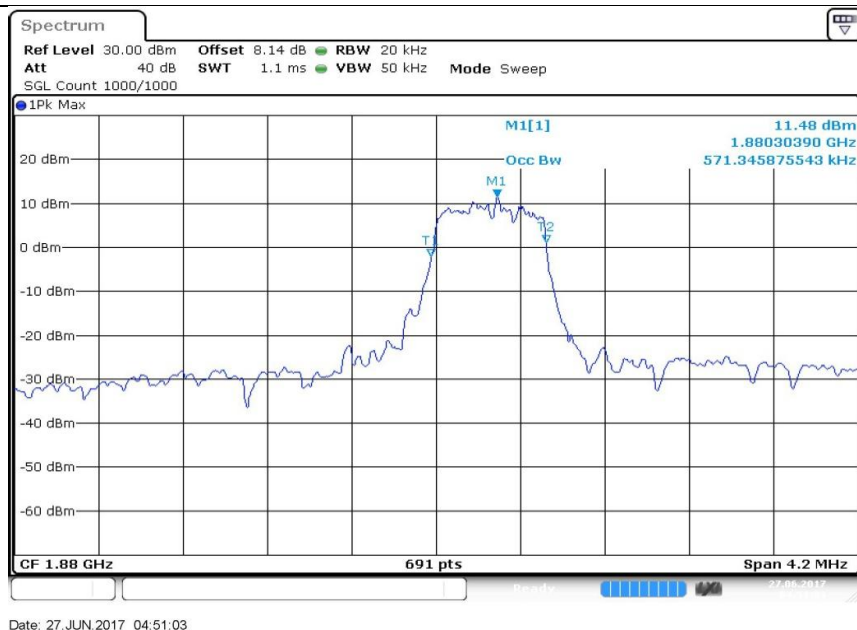
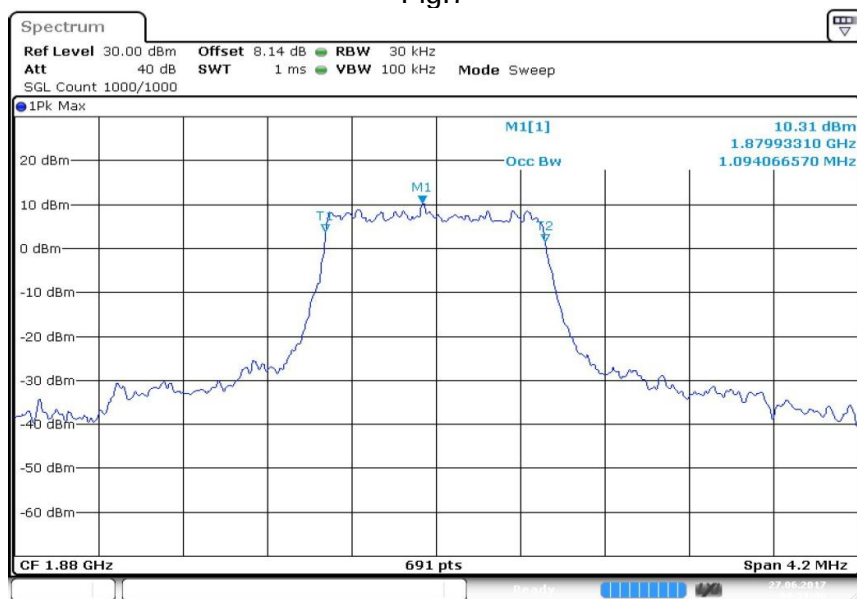


Fig.6



Date: 27 JUN 2017 04:51:03

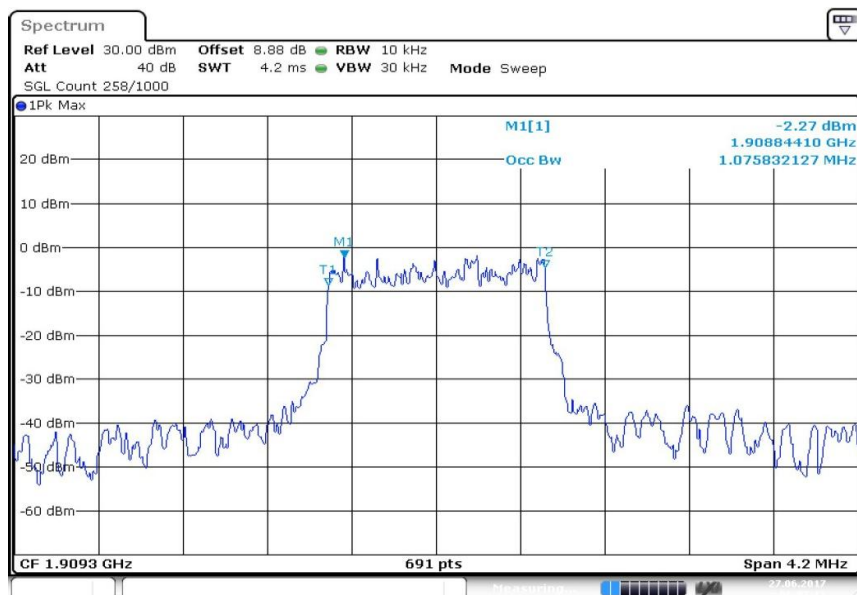
Fig.7



Date: 27 JUN 2017 04:51:46

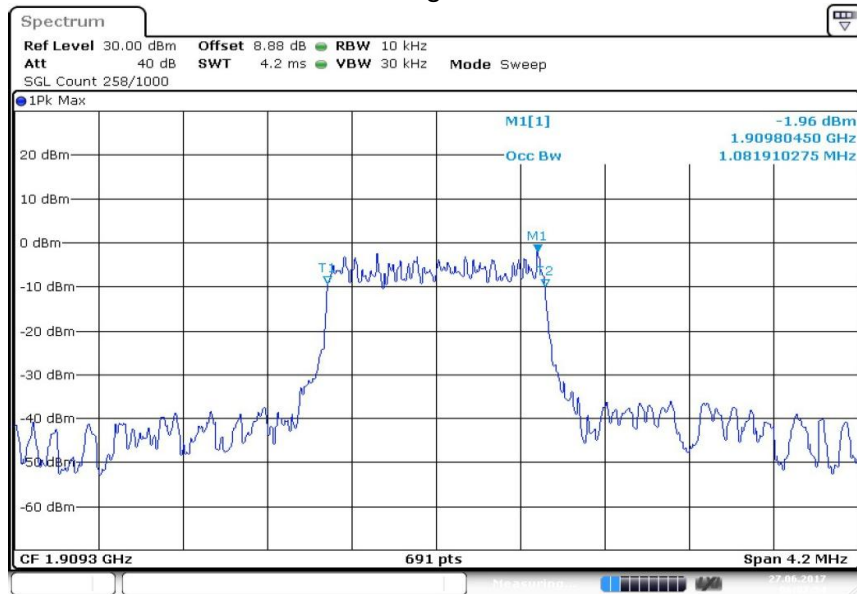
Fig.8

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	1	0	1.082	Fig.1	1.076	Fig.5
				1	5	1.082	Fig.2	1.076	Fig.6
				3	2	1.082	Fig.3	1.082	Fig.7
				6	0	1.094	Fig.4	1.100	Fig.8



Date: 27 JUN 2017 06:07:11

Fig.1



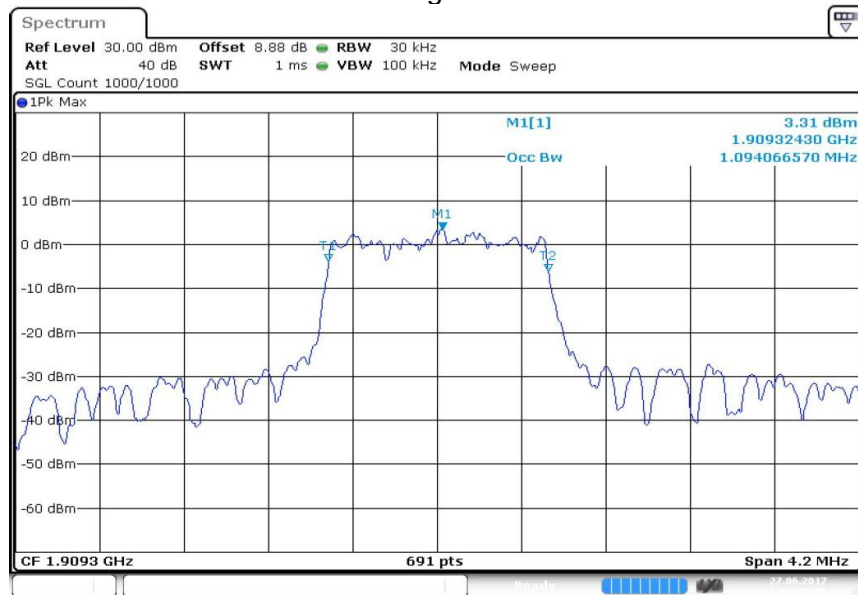
Date: 27 JUN 2017 06:07:55

Fig.2



Date: 27 JUN 2017 06:08:38

Fig.3



Date: 27 JUN 2017 06:09:21

Fig.4

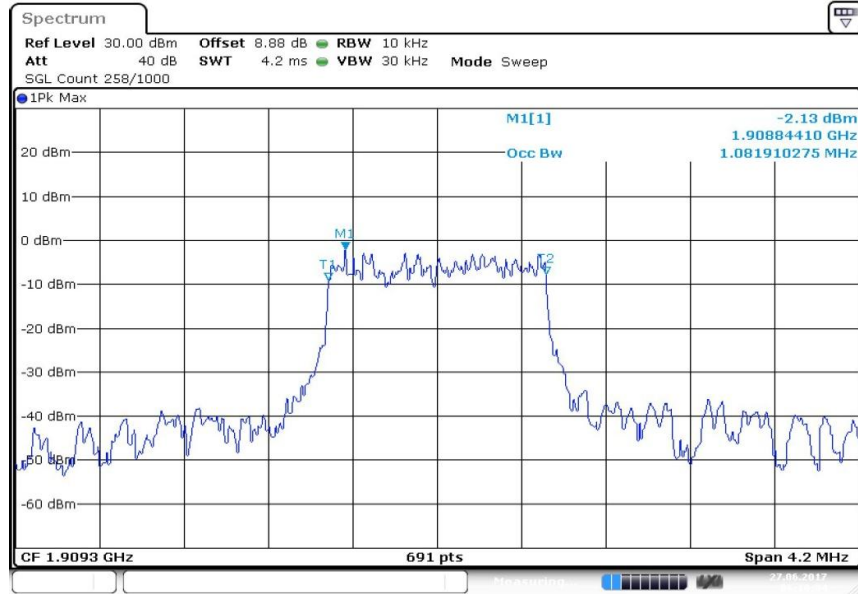


Fig.5

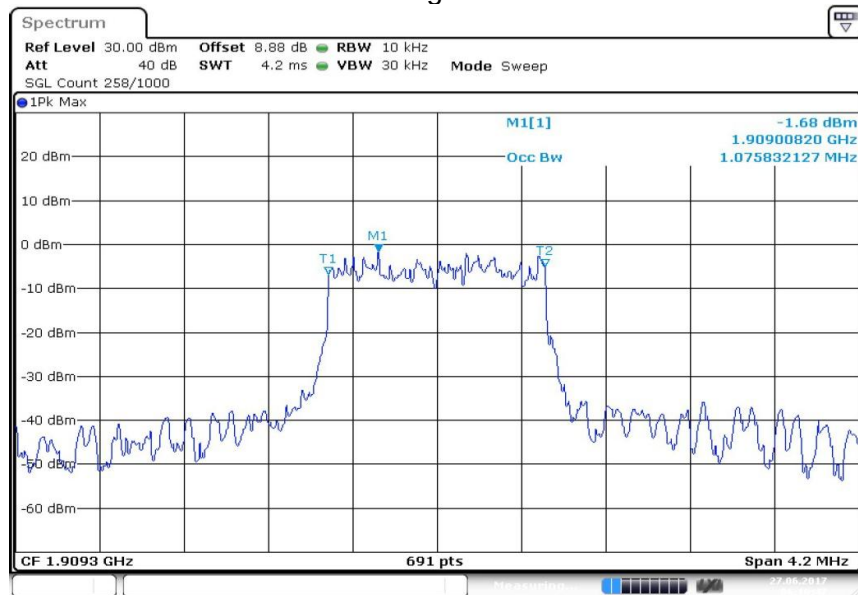


Fig.6

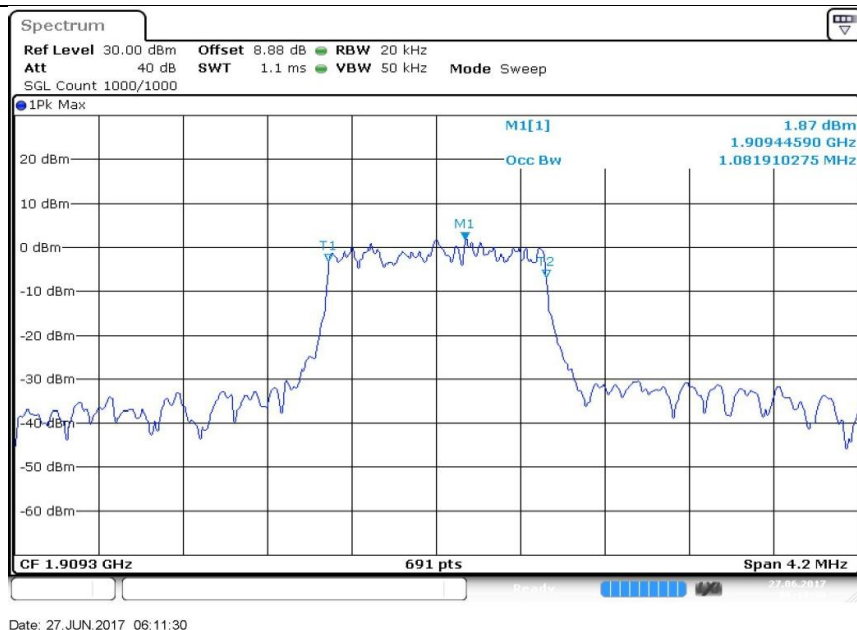


Fig.7

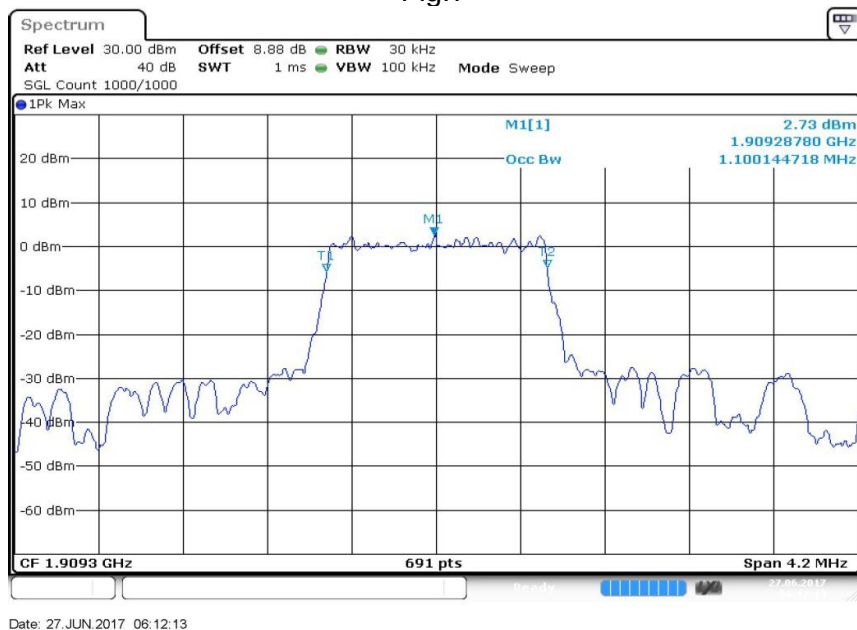
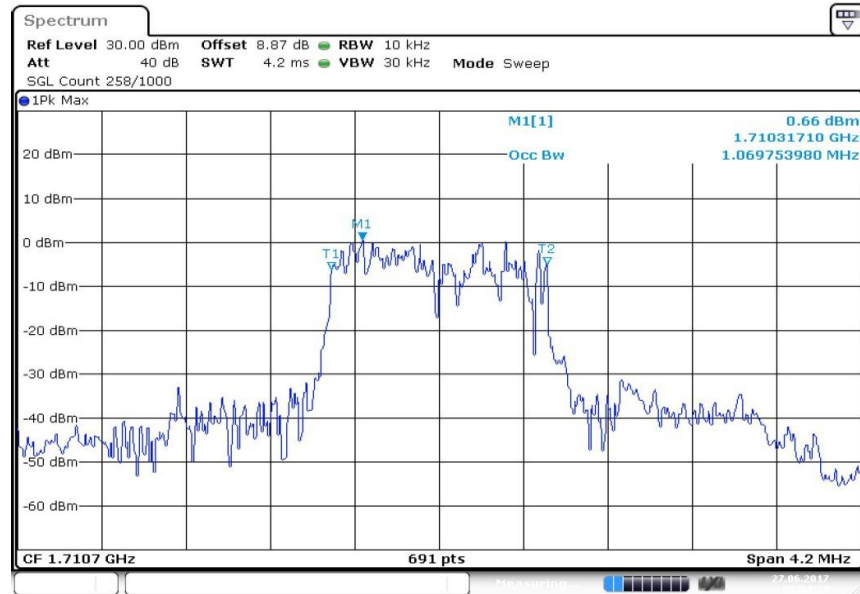


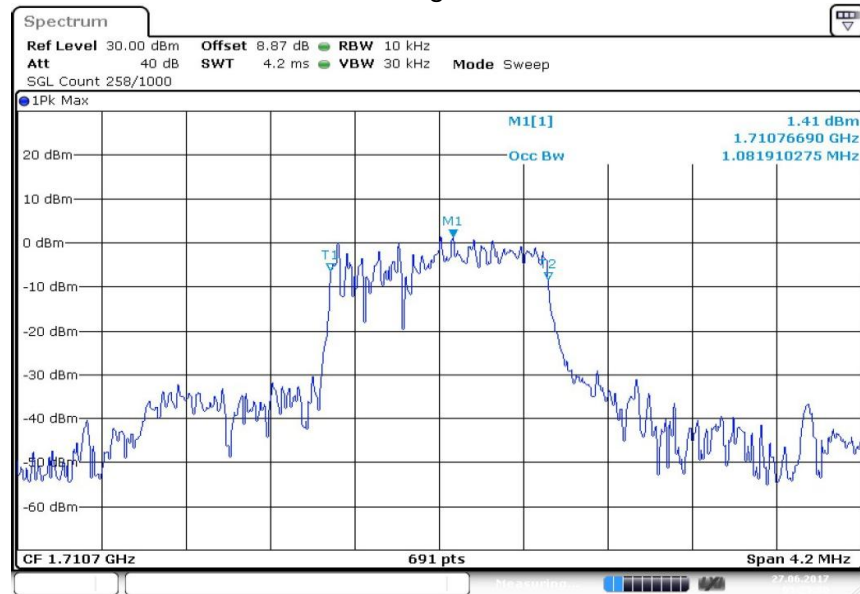
Fig.8

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	1	0	0.438	Fig.1	0.444	Fig.5
				1	5	0.632	Fig.2	0.407	Fig.6
				3	2	1.070	Fig.3	1.082	Fig.7
				6	0	1.088	Fig.4	1.106	Fig.8



Date: 27 JUN 2017 05:24:17

Fig.1



Date: 27 JUN 2017 05:25:00

Fig.2

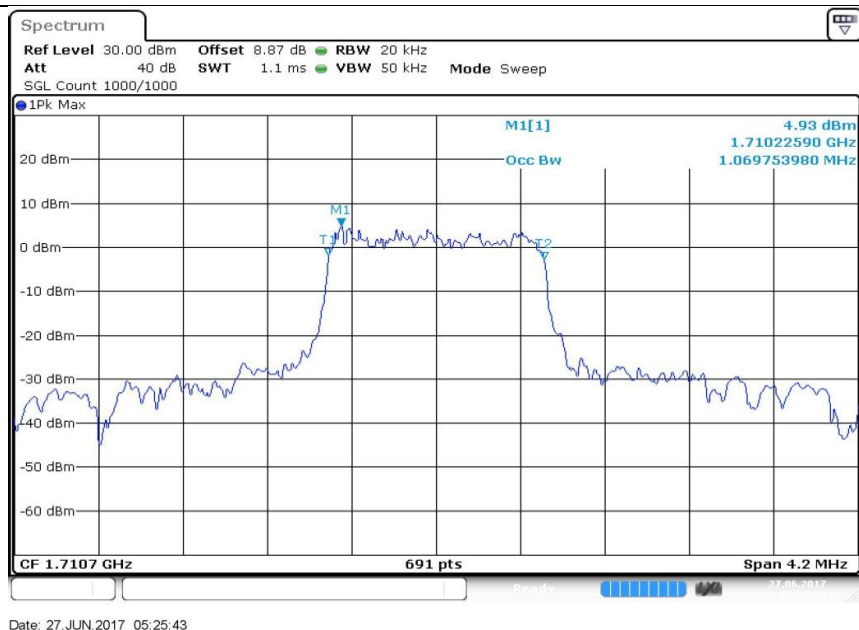


Fig.3

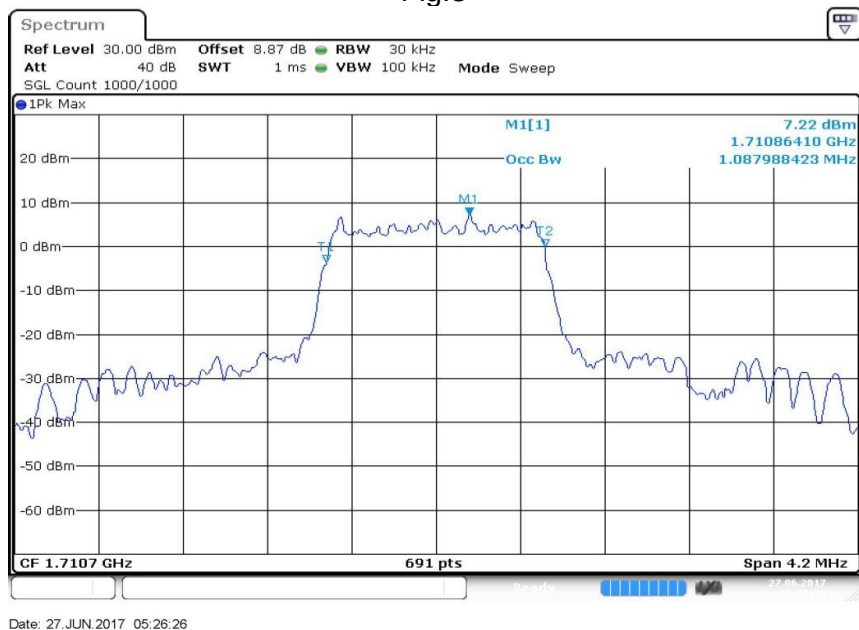


Fig.4

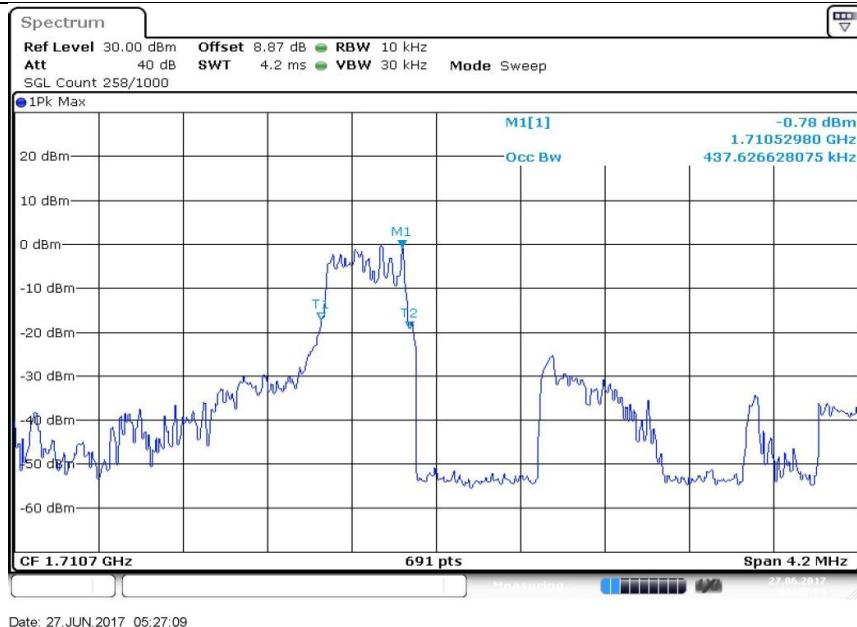


Fig.5

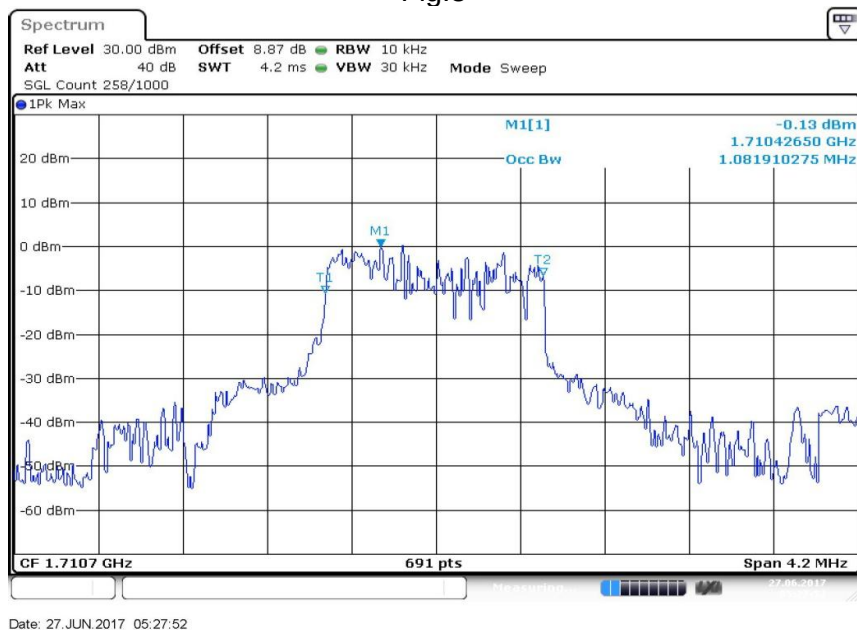


Fig.6

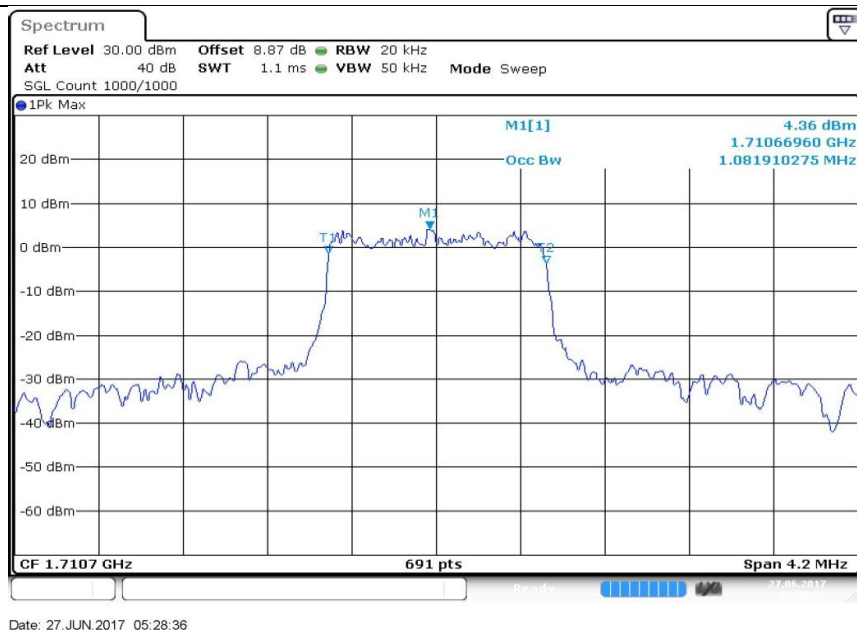


Fig.7

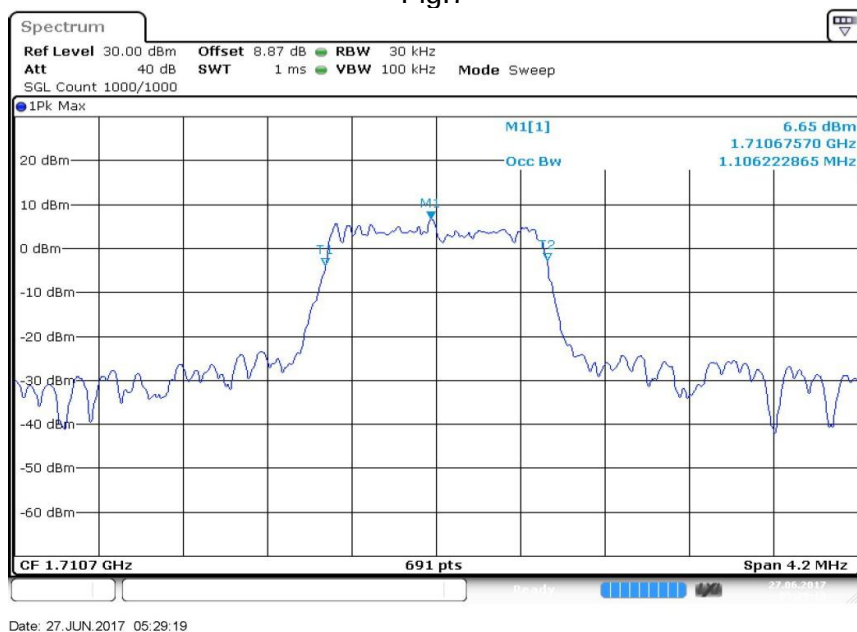
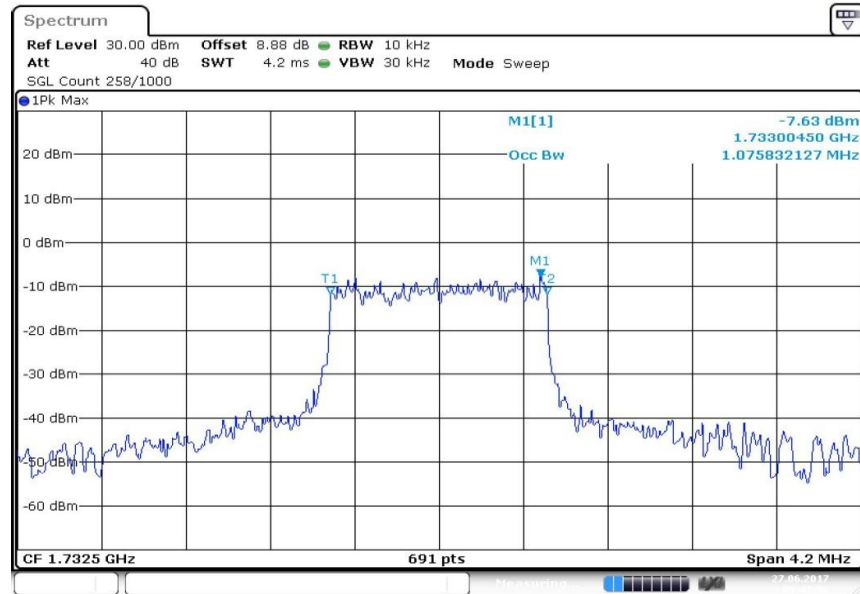


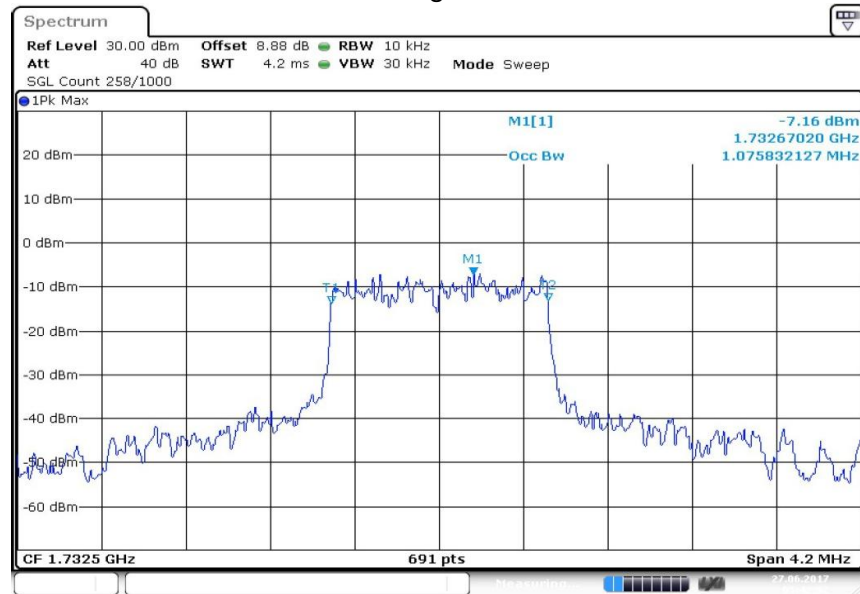
Fig.8

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	1	0	1.076	Fig.1	1.082	Fig.5
				1	5	1.082	Fig.2	1.082	Fig.6
				3	2	1.082	Fig.3	1.082	Fig.7
				6	0	1.094	Fig.4	1.100	Fig.8



Date: 27 JUN 2017 05:41:50

Fig.1



Date: 27 JUN 2017 05:42:33

Fig.2

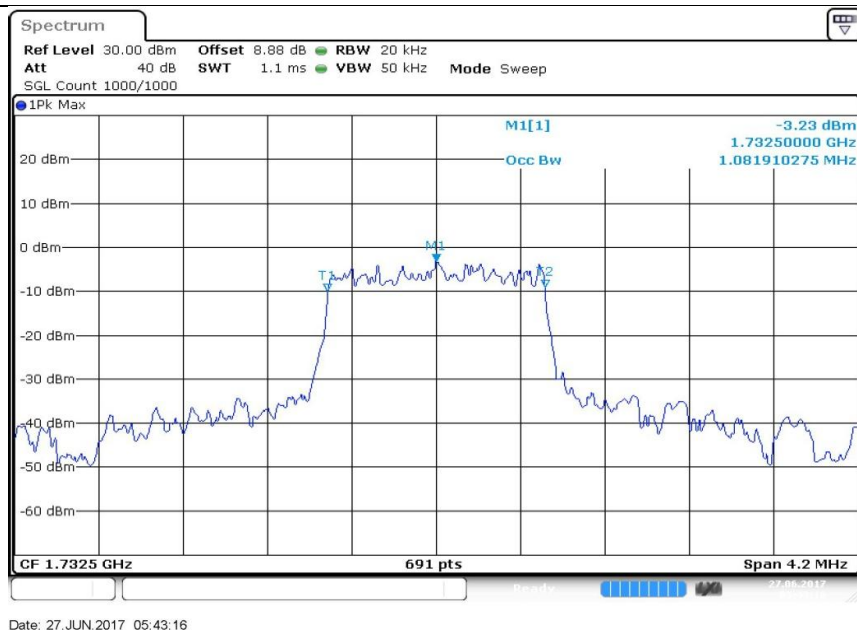


Fig.3

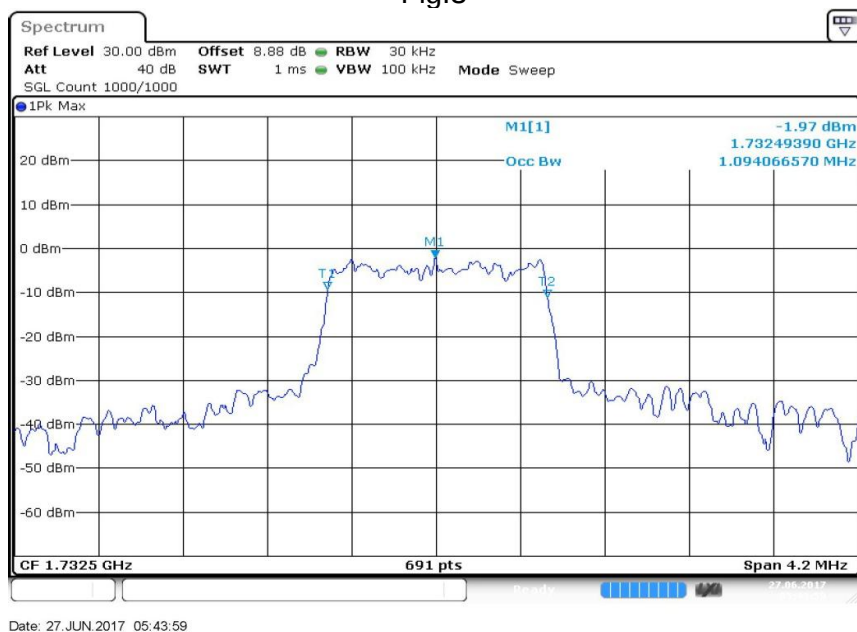
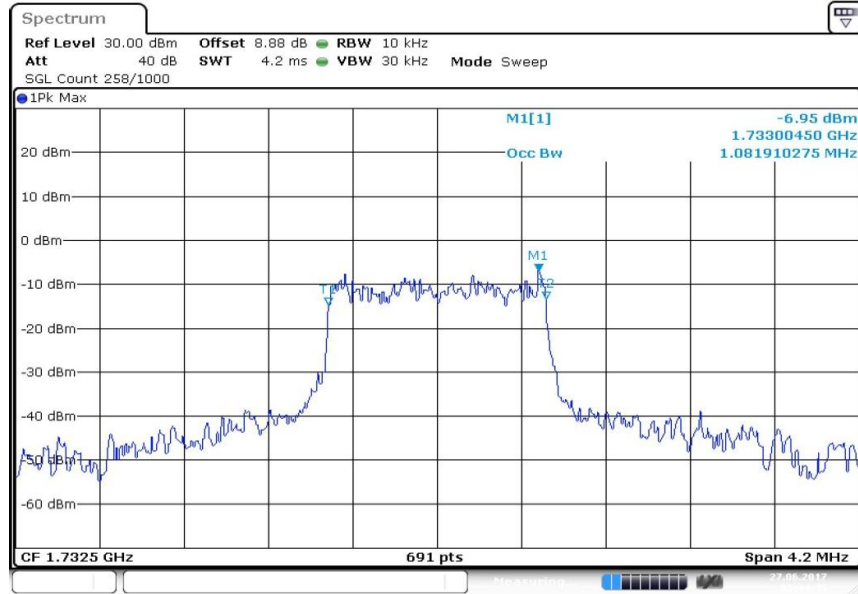
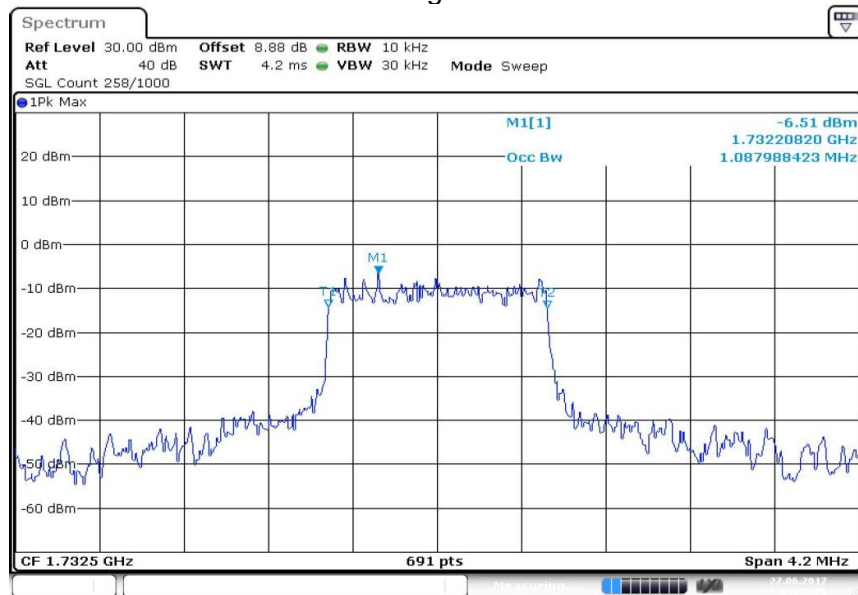


Fig.4



Date: 27 JUN 2017 05:44:45

Fig.5



Date: 27 JUN 2017 05:45:28

Fig.6

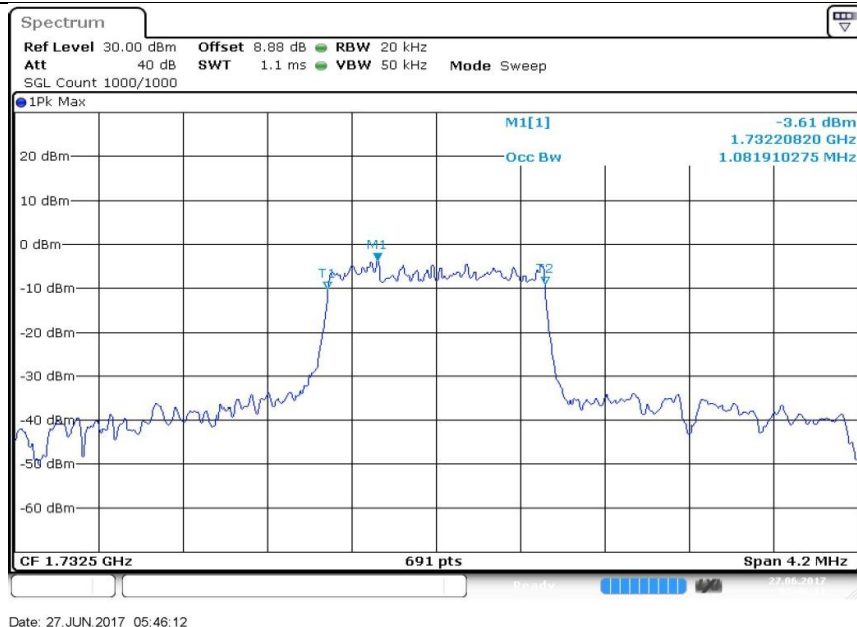


Fig.7

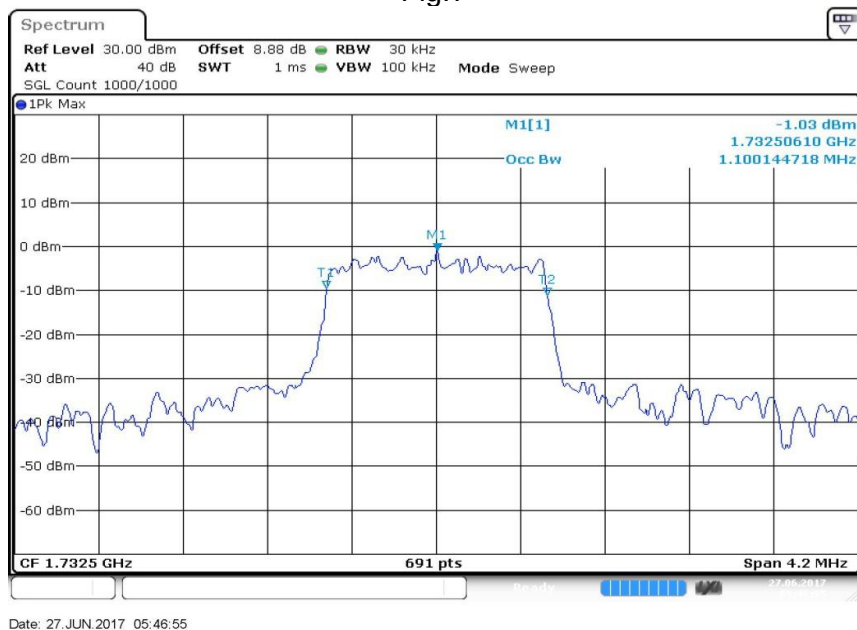
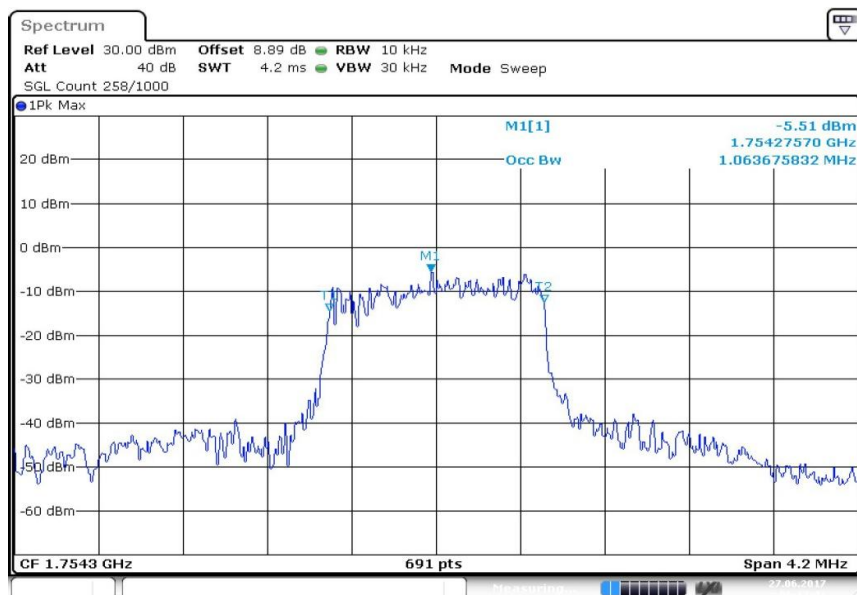


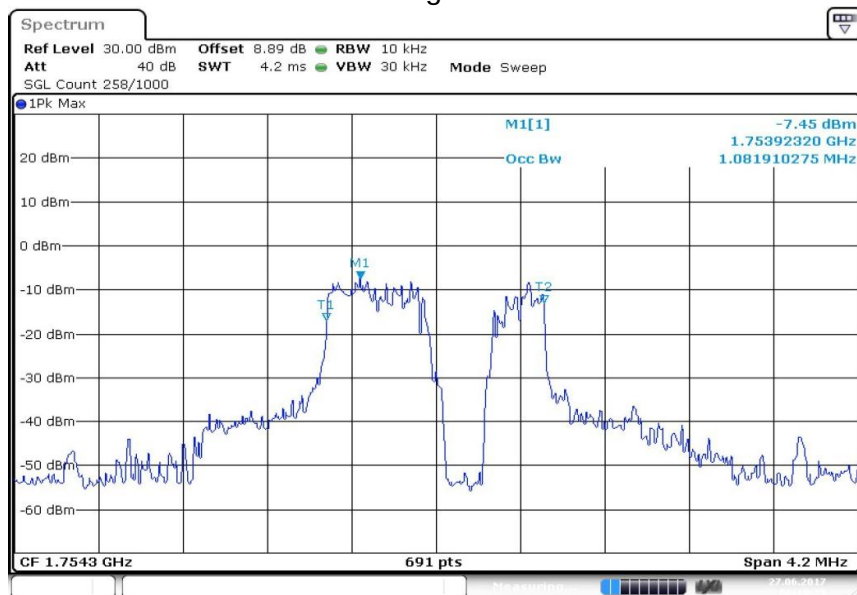
Fig.8

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	1	0	0.973	Fig.1	0.687	Fig.5
				1	5	1.082	Fig.2	1.088	Fig.6
				3	2	1.076	Fig.3	1.082	Fig.7
				6	0	1.088	Fig.4	1.088	Fig.8



Date: 27 JUN 2017 06:17:42

Fig.1



Date: 27 JUN 2017 06:18:25

Fig.2

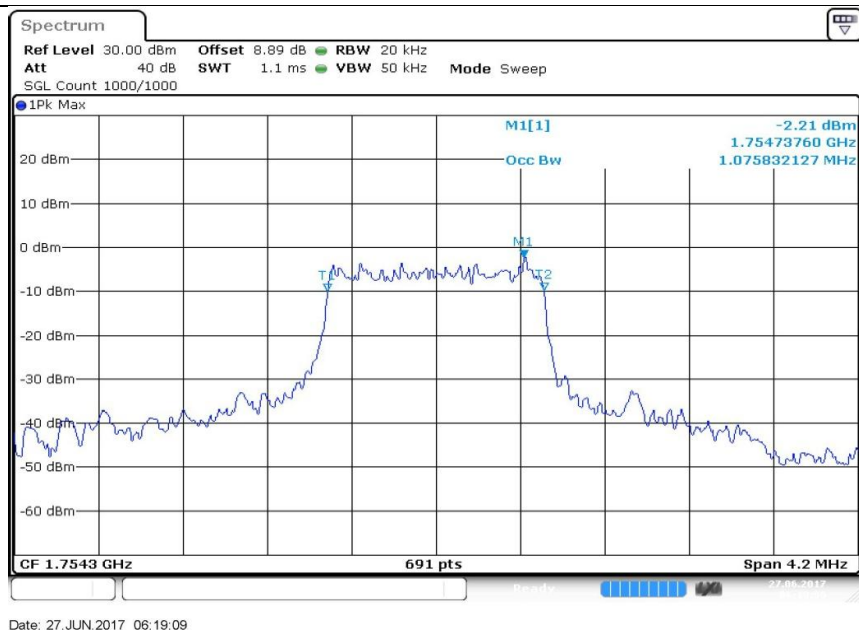


Fig.3



Fig.4

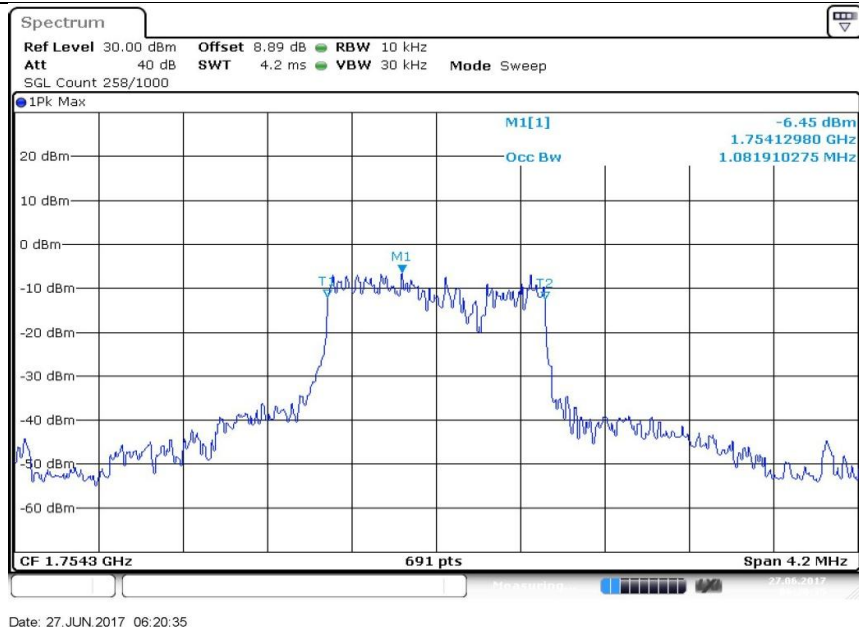


Fig.5

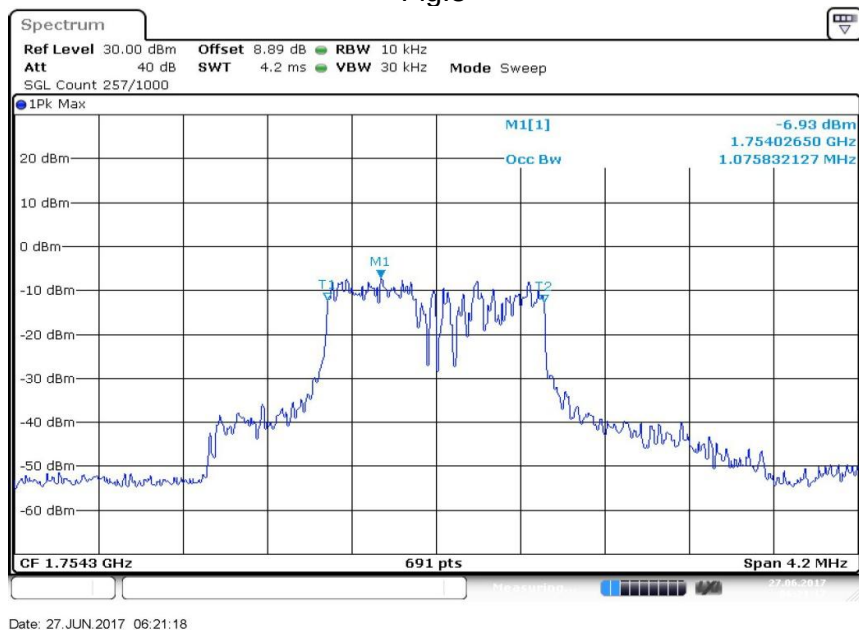


Fig.6

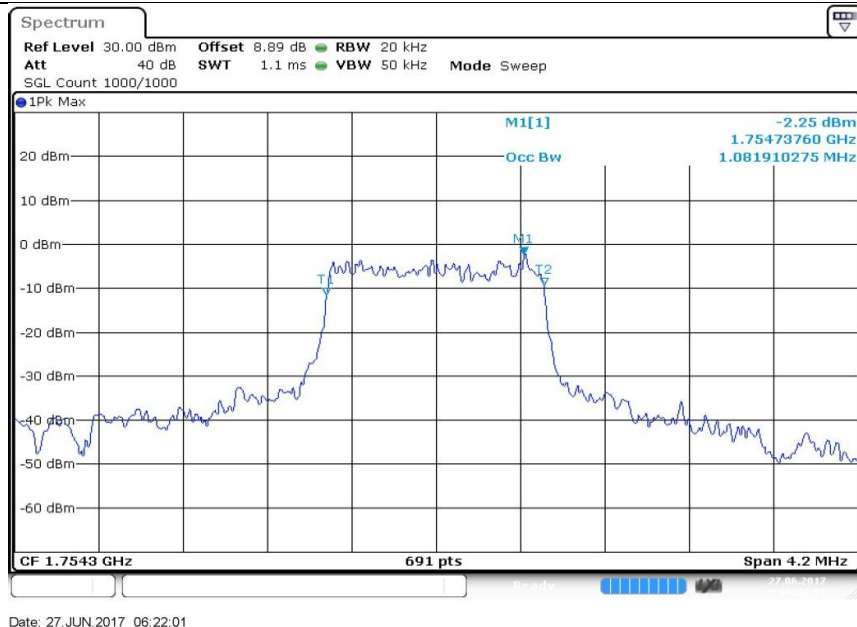


Fig.7

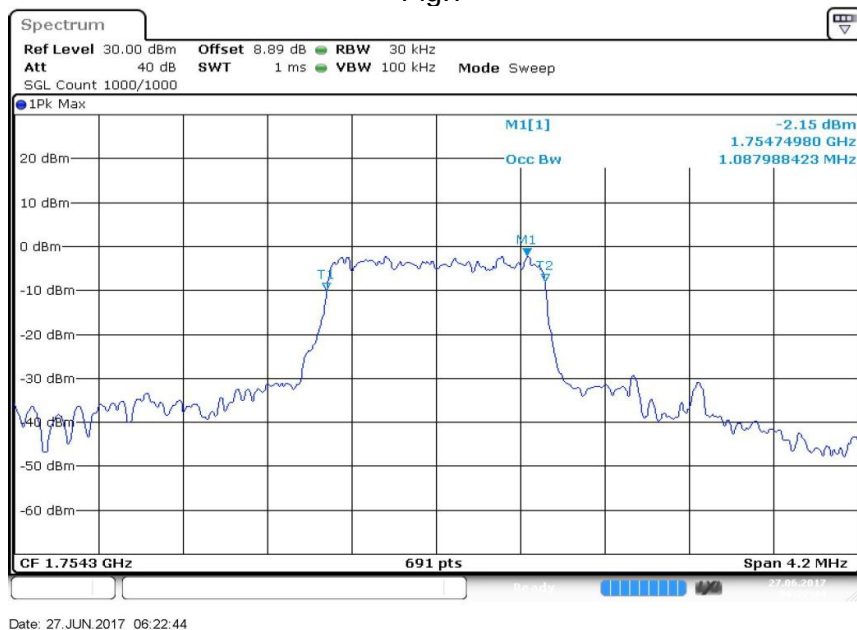
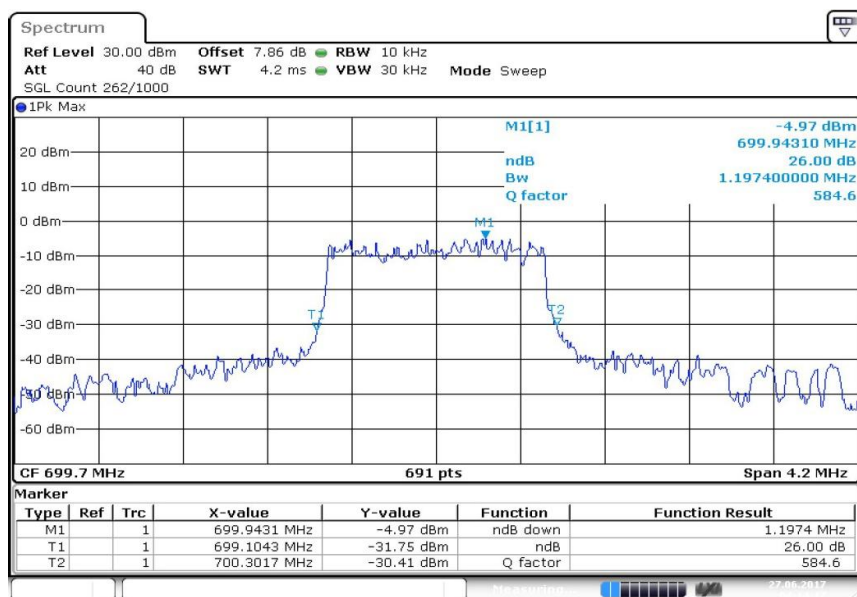


Fig.8

3 Emission Bandwidth-FCC Part22.917(b)

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)			
						QPSK		16-QAM	
12	699.7	23017	1.4	1	0	1.197	Fig.1	1.179	Fig.5
				1	5	1.167	Fig.2	1.185	Fig.6
				3	2	1.252	Fig.3	1.216	Fig.7
				6	0	1.246	Fig.4	1.240	Fig.8



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Fig.1

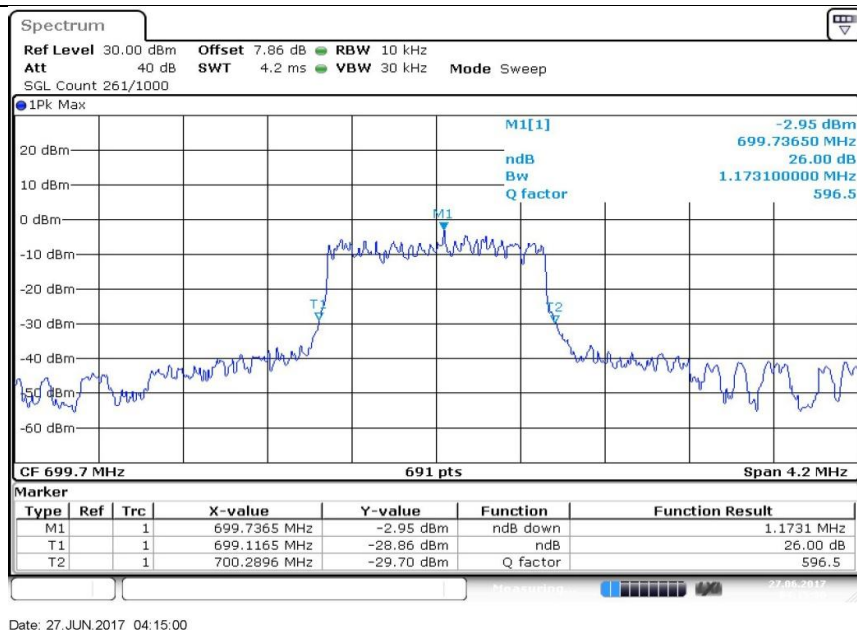


Fig.2



Fig.3