Certificate Number: 5055.02

TEST REPORT FOR RF TESTING

Report No.: SRTC2019-9004(F)-19111901(C)

Product Name: Mobile Phone

Product Model: HLTE321E

Applicant: Hisense International Co., Ltd.

Manufacturer: Hisense Communications Co., Ltd.

Specification: FCC Part 2, Part 24E, Part 22H, Part 27 (2019)

FCC ID: 2ADOBHLTE321E

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

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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
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1.3 Applicant's details

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City:	Qingdao
Country or Region:	China
Contacted person:	Geng Ruifeng
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Email:	gengruifeng@hisense.com

1.4 Manufacturer's details

Company:	Hisense Communications Co., Ltd.
Address:	No.218 Qianwangang Road, Economic & Technological Development Zone, Qingdao, China
City:	Qingdao
Country or Region:	China
Contacted person:	Deng Tingting
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Email:	dengtingting@hisense.com

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2019-11-19
Testing Start Date:	2019-11-19
Testing End Date:	2020-01-09

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

Normal Supply Voltage (V d.c.):	3.80
Maximum Extreme Supply Voltage (V d.c.):	4.40
Minimum Extreme Supply Voltage (V d.c.):	3.50

2 DESCRIPTION OF THE EQUIPMENT UNDER TEST

2.1 Final Equipment Build Status

Frequency Range	LTE Band 2: Tx:1850~1910MHz Rx:1930~1990MHz LTE Band 4: Tx:1710~1755MHz Rx:2110~2155MHz LTE Band 5: Tx:824~849 MHz Rx:869 ~894MHz LTE Band 7: Tx:2500~2570MHz Rx:2620~2690MHz LTE Band 12: Tx:699~716MHz Rx:729~746MHz
Modulation Type	QPSK/16QAM/64QAM
Antenna Type	Fixed Internal Antenna
Antenna Gain	LTE 2/4: 1.0dBi/LTE 5/12: 0.5dBi/LTE 7:1.5dBi
Power Supply	Battery/Charger
Hardware Version	V1.00
Software Version	L1702.6.01.01.MX05
IMEI	002101542033133

Note1: The equipments have two supplies, is different on the supplier of Memory/PFC.

Main Supply

Part Name	Model	Supplier(Brand)	Description
FPC	HYT7.762.1283	SHENZHEN ZHONGRUANXINDA ELECTRONICS CO.,LTD	MAIN FPC

Secondary Supply

Part Name	Model Name	supplier	Remark
FPC	HYT7.762.1283	ZHUHAI HONGGUANG TECHNOLOGY CO.,LTD	Same specification and different manufacturers

Note2: There are two SIM (SIM1/2) of EUT. The relevant tests have been performed in order to verify in which combination case the EUT would have the worst features. So all the tests shown in this test report are performed when the EUT use SIM 1.

Note3: Worst Case Test Mode

Band	Conducted Measurement Test Mode	Radiated Measurement Test Mode
LTE B2/4/5/7/12	Down Ant	Down Ant and Up Ant
Upper Ant and Down Ant are TX diversity switching. Both the up and down antennas of the conducted power were tested. Up Ant and Down Ant are both verified, we test the worst mode.		

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	0.256	-0.092	1M08G7D	1.4M	1.241	QPSK
	1850.7-1909.3	0.213	-0.092	1M08D7W	1.4M	1.241	16QAM
	1850.7-1909.3	0.210	-0.092	1M08W7D	1.4M	1.240	64QAM
	1851.5-1908.5	0.251	-0.098	2M69G7D	3M	2.887	QPSK
	1851.5-1908.5	0.216	-0.098	2M69D7W	3M	2.890	16QAM
	1851.5-1908.5	0.212	-0.098	2M69W7D	3M	2.887	64QAM
	1852.5-1907.5	0.255	0.094	4M49G7D	5M	5.078	QPSK
	1852.5-1907.5	0.219	0.094	4M49D7W	5M	5.061	16QAM
	1852.5-1907.5	0.207	0.094	4M49W7D	5M	5.154	64QAM
	1855-1905	0.252	-0.095	9M0G7D	10M	9.856	QPSK
	1855-1905	0.218	-0.095	9M0D7W	10M	9.918	16QAM
	1855-1905	0.209	-0.095	9M0W7D	10M	9.821	64QAM
	1857.5-1902.5	0.252	0.095	13M4G7D	15M	14.670	QPSK
	1857.5-1902.5	0.220	0.095	13M5D7W	15M	14.690	16QAM
	1857.5-1902.5	0.210	0.095	13M4W7D	15M	14.610	64QAM
	1860-1900	0.258	-0.075	17M9G7D	20M	19.310	QPSK
	1860-1900	0.220	-0.075	17M9D7W	20M	19.240	16QAM
	1860-1900	0.213	-0.075	17M9W7D	20M	19.340	64QAM
LTE BAND4							
27	1710.7-1754.3	0.243	0.099	1M08G7D	1.4M	1.237	QPSK
	1710.7-1754.3	0.210	0.099	1M08D7W	1.4M	1.241	16QAM
	1710.7-1754.3	0.204	0.099	1M08W7D	1.4M	1.230	64QAM
	1711.5-1753.5	0.244	0.093	2M68G7D	3M	2.889	QPSK
	1711.5-1753.5	0.209	0.093	2M69D7W	3M	2.890	16QAM
	1711.5-1753.5	0.202	0.093	2M69W7D	3M	2.873	64QAM
	1712.5-1752.5	0.245	0.100	4M49G7D	5M	5.057	QPSK
	1712.5-1752.5	0.208	0.100	4M49D7W	5M	5.081	16QAM
	1712.5-1752.5	0.202	0.100	4M49W7D	5M	5.093	64QAM
	1715-1750	0.244	0.085	9M0G7D	10M	9.873	QPSK
	1715-1750	0.208	0.085	9M0D7W	10M	9.874	16QAM
	1715-1750	0.204	0.085	9M0W7D	10M	9.926	64QAM
	1717.5-1747.5	0.245	-0.092	13M4G7D	15M	14.720	QPSK
	1717.5-1747.5	0.210	-0.092	13M4D7W	15M	14.770	16QAM
	1717.5-1747.5	0.204	-0.092	13M4W7D	15M	14.740	64QAM
	1720-1745	0.247	-0.097	17M9G7D	20M	19.500	QPSK
	1720-1745	0.211	-0.097	17M9D7W	20M	19.320	16QAM
	1720-1745	0.205	-0.097	17M9W7D	20M	19.350	64QAM

LTE BAND5							
22H	824.7-848.3	0.214	-0.098	1M08G7D	1.4M	1.242	QPSK
	824.7-848.3	0.182	-0.098	1M08D7W	1.4M	1.250	16QAM
	824.7-848.3	0.175	-0.098	1M08W7D	1.4M	1.265	64QAM
	825.5-847.5	0.211	-0.100	2M69G7D	3M	2.893	QPSK
	825.5-847.5	0.181	-0.100	2M69D7W	3M	2.899	16QAM
	825.5-847.5	0.177	-0.100	2M69W7D	3M	2.894	64QAM
	826.5-846.5	0.215	-0.098	4M49G7D	5M	5.075	QPSK
	826.5-846.5	0.182	-0.098	4M50D7W	5M	5.127	16QAM
	826.5-846.5	0.178	-0.098	4M49W7D	5M	5.091	64QAM
	829-844	0.215	-0.099	9M0G7D	10M	9.865	QPSK
	829-844	0.185	-0.099	9M0D7W	10M	9.930	16QAM
	829-844	0.180	-0.099	9M0W7D	10M	9.815	64QAM
LTE BAND7							
27	2502.5-2567.5	0.297	-0.095	4M50G7D	5M	5.110	QPSK
	2502.5-2567.5	0.253	-0.095	4M50D7W	5M	5.078	16QAM
	2502.5-2567.5	0.250	-0.095	4M50W7D	5M	5.096	64QAM
	2505-2565	0.299	-0.097	9M0G7D	10M	10.000	QPSK
	2505-2565	0.251	-0.097	9M0D7W	10M	10.030	16QAM
	2505-2565	0.245	-0.097	9M0W7D	10M	10.030	64QAM
	2507.5-2562.5	0.303	0.096	13M5G7D	15M	14.650	QPSK
	2507.5-2562.5	0.252	0.096	13M5D7W	15M	14.870	16QAM
	2507.5-2562.5	0.249	0.096	13M4W7D	15M	14.750	64QAM
	2510-2560	0.307	0.081	17M9G7D	20M	19.310	QPSK
	2510-2560	0.255	0.081	17M9D7W	20M	19.430	16QAM
	2510-2560	0.251	0.081	17M9W7D	20M	19.620	64QAM
LTE BAND12							
27	699.7-715.3	0.222	0.095	1M08G7D	1.4M	1.247	QPSK
	699.7-715.3	0.187	0.095	1M08D7W	1.4M	1.249	16QAM
	699.7-715.3	0.186	0.095	1M08W7D	1.4M	1.232	64QAM
	700.5-714.5	0.223	-0.097	2M69G7D	3M	2.889	QPSK
	700.5-714.5	0.189	-0.097	2M68D7W	3M	2.888	16QAM
	700.5-714.5	0.185	-0.097	2M68W7D	3M	2.902	64QAM
	701.5-713.5	0.221	-0.081	4M48G7D	5M	5.080	QPSK
	701.5-713.5	0.191	-0.081	4M49D7W	5M	5.031	16QAM
	701.5-713.5	0.187	-0.081	4M49W7D	5M	5.084	64QAM
	704-711	0.226	-0.098	9M0G7D	10M	9.853	QPSK
	704-711	0.193	-0.098	9M0D7W	10M	9.870	16QAM
	704-711	0.188	-0.098	9M0W7D	10M	9.841	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	LPN385438
Serial Number	---

Equipment	Charger
Manufacturer	SHENZHEN TIANYIN ELECTRONICS CO., LTD.
Model Number	TPA-10120150UU
Serial Number	---

Equipment	Headset
Manufacturer	NEW LEADER INDUSTRY CO.,LTD.
Model Number	A106-0022-S
Serial Number	---

Equipment	USB Cable
Manufacturer	SHENZHEN KOAR ELECTRIC CO.,LTD.
Model Number	GET1-2824L10WHR-AC
Serial Number	---

3 REFERENCE SPECIFICATION

Specification	Version	Title
FCC Part 2	2019	Frequency allocations and radio treaty matters; general rules and regulations
FCC Part 22	2019	Public mobile services
FCC Part 24	2019	Personal communications services
FCC Part 27	2019	Miscellaneous wireless communications 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
TIA-603-E-2016	March 2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

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.
NT	Normal Temperature
NV	Nominal voltage
HV	High voltage
LV	Low voltage

5 RESULT SUMMARY

No.	Test case	FCC reference	Verdict
1	RF Power Output	2.1046	Pass
2	Effective Radiated Power and Effective Isotropic Radiated Power	22.913(a)(5), 24.232(c), 27.50(b)(10), 27.50(c)(10), 27.50(h)(2), 27.50(d)(4), 27.50(a)(3)	Pass
3	Occupied Bandwidth	2.1049	Pass
4	Peak-Average Ratio	24.232(d), 27.50(d)(5)	Pass
5	Emission Bandwidth	2.1049	Pass
6	Spurious Emissions at antenna terminals	2.1051, 22.917(a), 24.238(a), 27.53(c), 27.53(g), 27.53(h), 27.53(m), 27.53(a)	Pass
7	Band Edges Compliance	2.1051, 22.917(a), 24.238(a), 27.53(c), 27.53(g), 27.53(h), 27.53(m), 27.53(a)	Pass
8	Frequency Stability	2.1055, 22.355, 24.235, 27.54	Pass
9	Radiated Spurious Emissions	2.1053, 22.917(a), 24.238(a), 27.53(c), 27.53(g), 27.53(h), 27.53(f), 27.53(a), 27.53(m)	Pass

This Test Report Is Issued by: Mr. Peng Zhen	Checked by: Mr. Li Bin
Tested by: Mr. He Dengshun	Issued date: 20200109

6 TEST RESULT

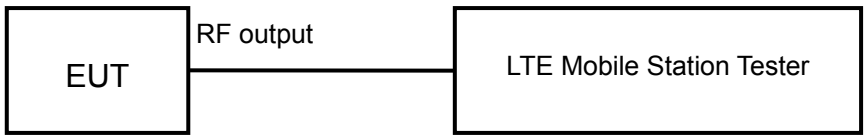
6.1 RF Power Output

Rule Part(s)
FCC: 2.1046

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	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: No RF Power Output requirements in part 2.1046.

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

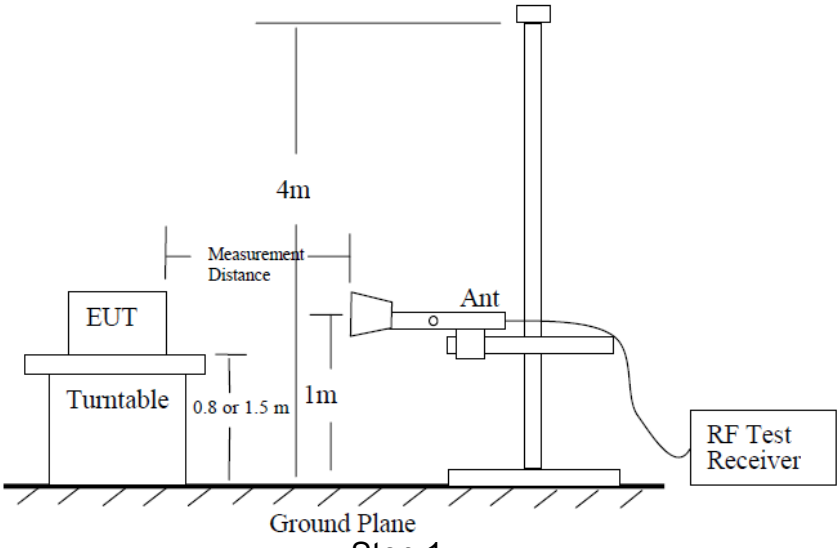
6.2 Effective Radiated Power and Effective Isotropic Radiated Power

Rule Part(s)
FCC: 22.913(a) (5), 24.232(c), 27.50(b) (10), 27.50(c) (10), 27.50(h) (2), 27.50(d) (4), 27.50(a) (3)

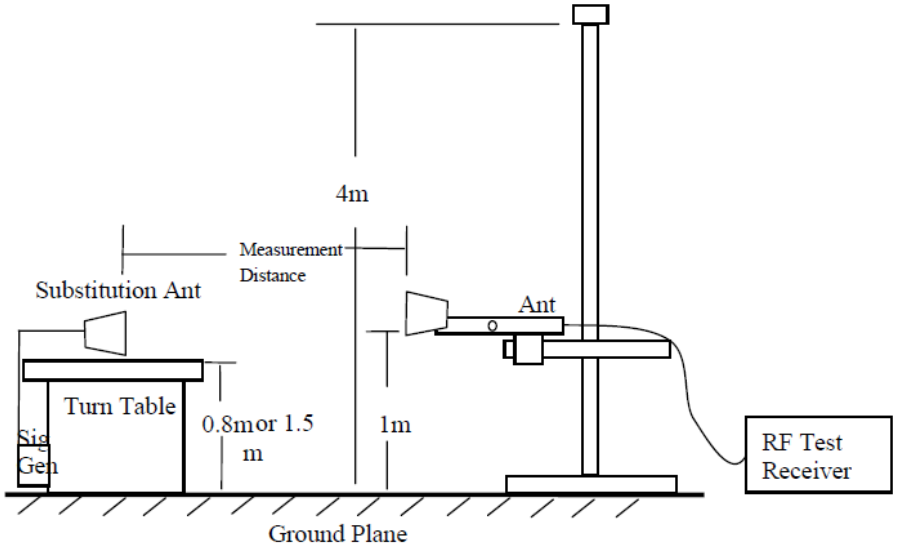
Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	101.9kPa

Test setup:



Step 1



Step 2

Test procedure:
The measurements procedures in TIA-603-E-2016 are used.
Step 1:
The measurement is carried out in the chamber. EUT was placed on a 0.8m (f<1GHz)/ 1.5m (f>1GHz) 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 from 1m to 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 100KHz(f<1GHz)/1MHz (f>1GHz). 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.
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:
Power (EIRP) = Pmea+ Pca+ Ga

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) (5)
The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.
24.232(c)
Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.
27.50(b) (10)
Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.
27.50(c) (10)
Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.
27.50(h) (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.

27.50(d) (4)
Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.
27.50(a) (3)
Mobile and portable stations (i) For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth.

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

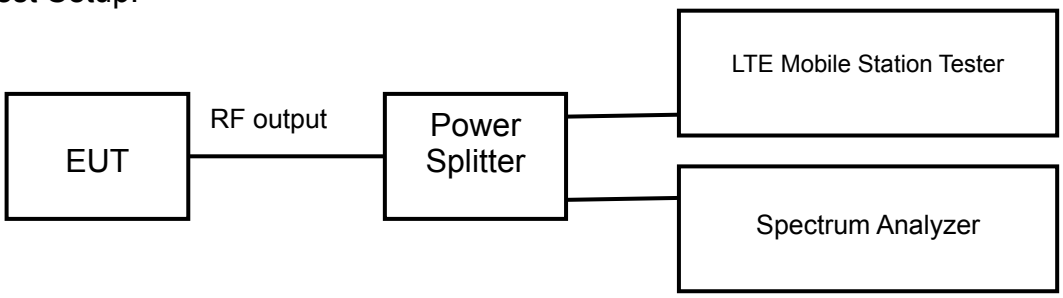
6.3 Occupied Bandwidth

Rule Part(s)
FCC: 2.1049

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	101.9kPa

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 4.2

Test Setting:
1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Limits: No specific occupied bandwidth requirements in part 2.1049

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

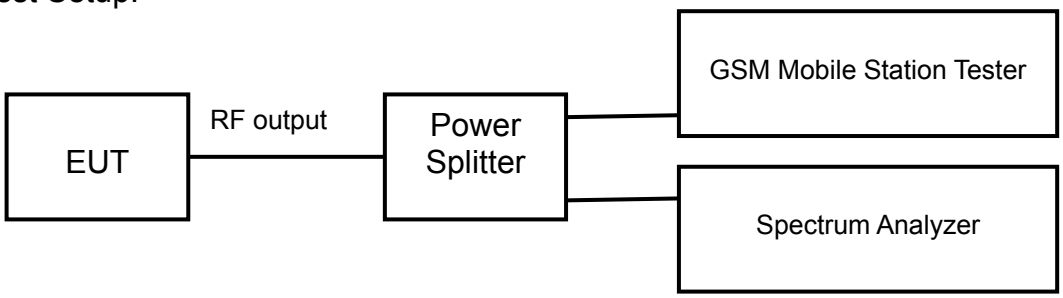
6.4 Emission Bandwidth

Rule Part(s)
FCC: 2.1049

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	101.9kPa

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 4.2

Test Setting:

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

2. RBW = 1 – 5% of the expected OBW

3. VBW ≥ 3 x RBW

4. Detector = Peak

5. Trace mode = max hold

6. Sweep = auto couple

7. The trace was allowed to stabilize

8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of 26dB bandwidth observed in Step 7

Limits: No specific emission bandwidth requirements in part 2.1049.

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

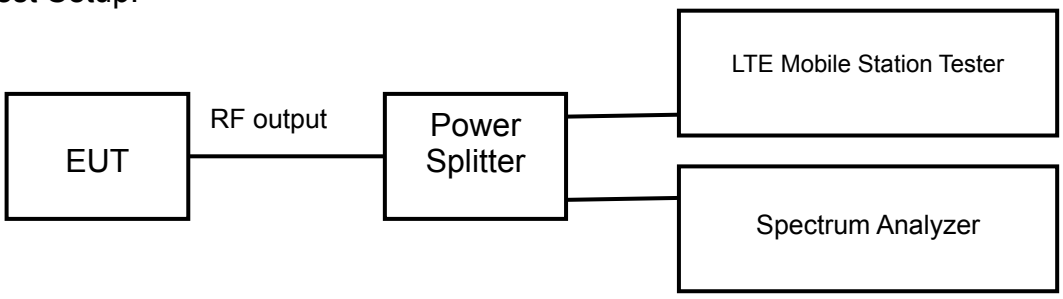
6.5 Peak-Average Ratio

Rule Part(s)
FCC: 24.232(d), 27.50(d) (5)

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	101.9kPa

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 5.7.1

Test Setting:
1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW ≥ OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Limits
24.232(d), 27.50(d) (5)
In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

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

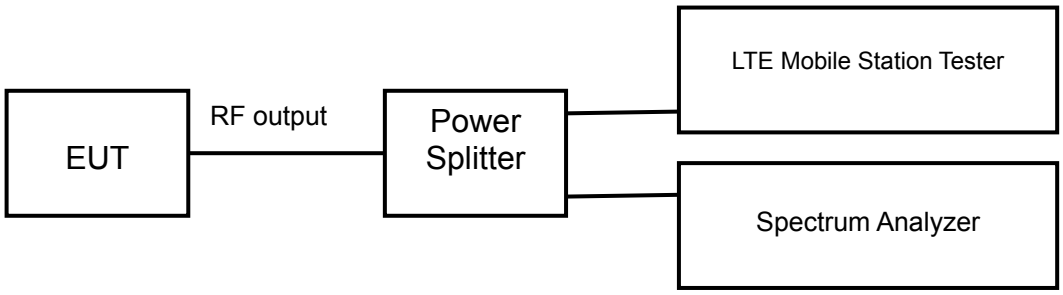
6.6 Spurious Emissions at antenna terminal

Rule Part(s)
FCC: 2.1051, 22.917(a), 24.238(a), 27.53(c), 27.53(g), 27.53(h), 27.53(m), 27.53(a)

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	101.9kPa

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 6.0

Test Setting:
1. Start frequency was set to 30MHz and stop frequency was set to at least 10 * the fundamental frequency
2. Detector = RMS
3. RBW=1MHz
4. VBW=3MHz
5. Trace mode = trace average for continuous emissions, max hold for pulse emissions
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Limits
The minimum permissible attenuation level of any spurious emission is 43 + log10 (P [Watts]), where P is the transmitter power in Watts.
For Band 30, the minimum permissible attenuation level of any spurious emission <2288MHz and >2365MHz is 70 + log10 (P [Watts]).
For Band 7 and 41, the minimum permissible attenuation level of any spurious emission is 55 + log10 (P [Watts]).

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

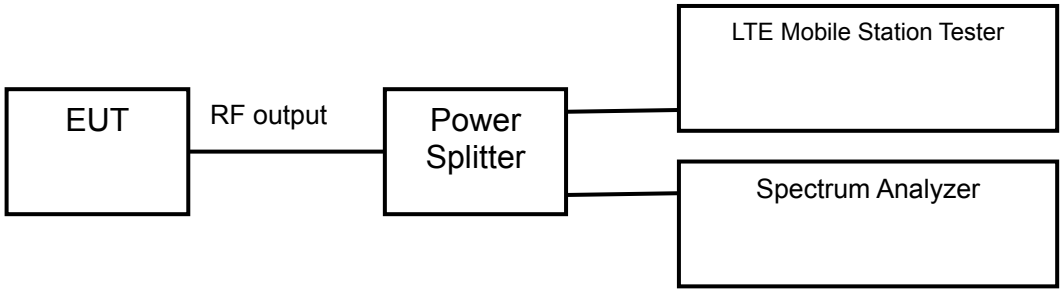
6.7 Band Edges Compliance

Rule Part(s)
FCC: 2.1051, 22.917(a), 24.238(a), 27.53(c), 27.53(g), 27.53(h), 27.53(m), 27.53(a)

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	101.9kPa

Test Setup:



Test procedure:
KDB 971168 D01 v03r01 – Section 6.0

Test Setting:
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1% of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Limits
The minimum permissible attenuation level of any spurious emission is 43 + log10 (P [Watts]), where P is the transmitter power in Watts.
The minimum permissible attenuation level for Band 30 is > 43 + 10log10 (P [Watts] at 2300-2305MHz & 2345-2360MHz, > 55 + 10log10 (P [Watts]) at 2320-2324MHz & 2341-2345MHz, > 61 + 10log10 (P [Watts]) at 2324-2328MHz & 2337-2341MHz, > 67 + 10log10 (P [Watts]) at 2288-2292MHz & 2328- 2337MHz, and > 70 + 10log10 (P [Watts]) at frequencies < 2288MHz & >2365MHz.
Per 22.917(b) 24.238(a) 27.53(h) in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the

width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
Per 27.53(c)(5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c)(4) is 65 + 10log10(P) = -35dBm in a 6.25kHz bandwidth.
Per 27.53(a)(5) in the 1 MHz bands immediately outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5MHz.

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

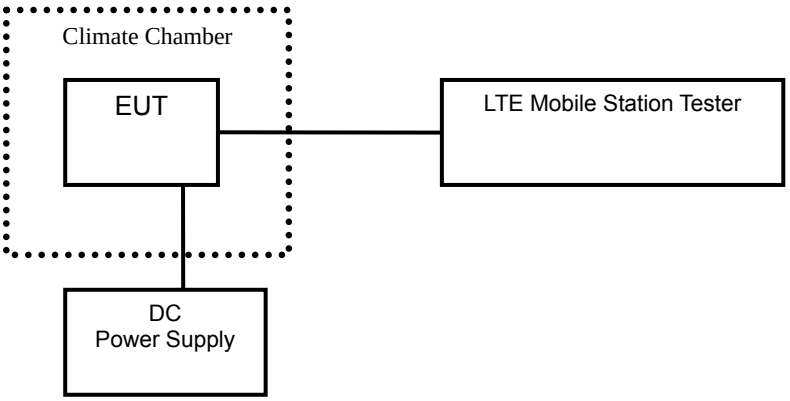
6.8 Frequency Stability

Rule Part(s)
FCC: 2.1055, 22.355, 24.235, 27.54

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	101.9kPa

Test setup:



Test Procedure:
ANSI/TIA-603-E-2016

Test Settings
1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C (The temperature range can be declared by the manufacturer). A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Limits: For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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

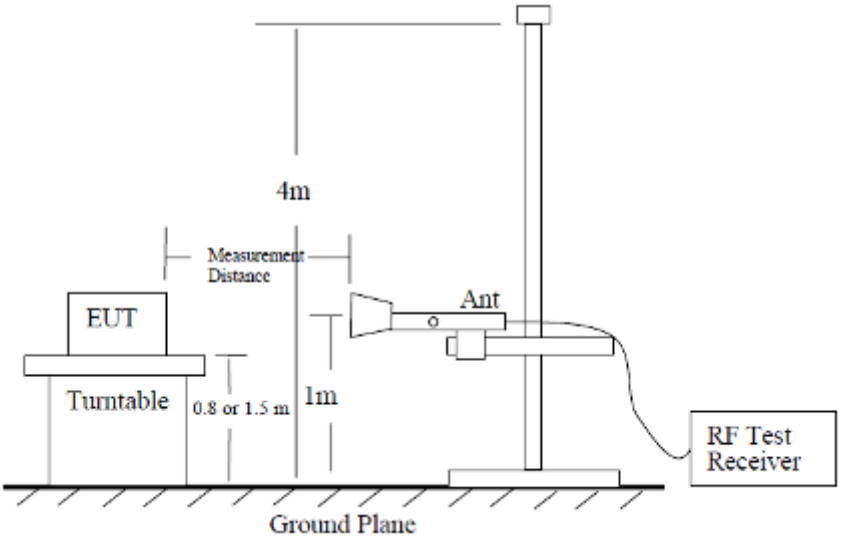
6.9 Radiated Spurious Emissions

Rule Part(s)
FCC: 2.1053, 22.917(a), 24.238(a), 27.53(c), 27.53(g), 27.53(h), 27.53(f), 27.53(a), 27.53(m)

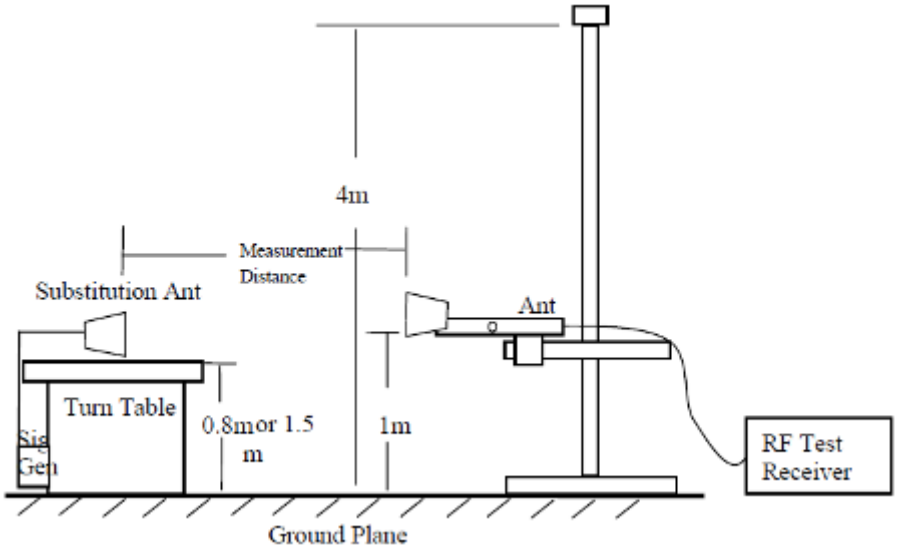
Ambient condition:

Temperature	Relative humidity	Pressure
25°C	30%	101.9kPa

Test Setup:



Step 1



Step 2

Test procedure:
The measurements procedures in TIA-603-E-2016 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 chamber. EUT was placed on a 0.8m (f<1GHz)/ 1.5m (f>1GHz) 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 from 1m to 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 100 kHz (f<1GHz)/1MHz (f>1GHz). 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. The spectrum analyzer scans from 30MHz to 10th harmonic of the carrier. 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	2019.08.20	2020.08.19
2	FSV40 Spectrum Analyzer	R&S	101065	2019.08.20	2020.08.19
2	N9020A Spectrum Analyzer	Agilent	MY48010771	2019.08.20	2020.08.19
3	6007 Power Divider	Weinschel	6007-GJ-1	2019.08.20	2020.08.19
4	DC Power Supply E3645A	Agilent	MY40000741	2019.03.01	2020.02.28
5	Temperature chamber SH241	ESPEC	92013758	2019.08.20	2020.08.19
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	2019.08.20	2020.08.19
14	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100513	2019.08.20	2020.08.19
15	HL562 Ultra log antenna	R&S	100016	2019.08.20	2020.08.19
16	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2019.08.20	2020.08.19
17	ESI 40 EMI test receiver	R&S	100015	2019.08.20	2020.08.19
18	ESCS30 EMI test receiver	R&S	100029	2019.08.20	2020.08.19
19	HL562 Receive antenna	R&S	100167	2019.08.20	2020.08.19
20	ENV216 AMN	R&S	3560.6550.12	2019.08.20	2020.08.19

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

LTE Band 2

1 RF Power Output up Antenna

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1850.7	18607	1.4	1	0	22.78
				1	5	22.71
				3	2	21.77
				6	0	21.76
	1880	18900		1	0	22.67
				1	5	22.66
				3	2	22.08
				6	0	22.07
	1909.3	19193		1	0	22.72
				1	5	22.67
				3	2	21.70
				6	0	21.72
16QAM	1850.7	18607	1.4	1	0	21.97
				1	5	22.09
				3	2	20.69
				6	0	20.91
	1880	18900		1	0	21.91
				1	5	21.94
				3	2	21.02
				6	0	20.97
	1909.3	19193		1	0	22.01
				1	5	22.02
				3	2	20.73
				6	0	20.66
64QAM	1850.7	18607	1.4	1	0	21.79
				1	5	21.86
				3	2	20.77
				6	0	20.85
	1880	18900		1	0	21.77
				1	5	21.76
				3	2	20.91
				6	0	21.00
	1909.3	19193		1	0	21.86
				1	5	21.88
				3	2	20.77
				6	0	20.72

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1851.5	18615	3	1	0	22.71
				1	14	22.71
				8	4	21.67
				15	0	21.67
	1880	18900		1	0	22.75
				1	14	22.75
				8	4	22.03
				15	0	22.06
	1908.5	19185		1	0	22.67
				1	14	22.72
				8	4	21.75
				15	0	21.64
16QAM	1851.5	18615	3	1	0	21.99
				1	14	22.04
				8	4	20.65
				15	0	20.82
	1880	18900		1	0	21.89
				1	14	21.91
				8	4	21.06
				15	0	20.94
	1908.5	19185		1	0	21.94
				1	14	21.93
				8	4	20.80
				15	0	20.68
64QAM	1851.5	18615	3	1	0	21.92
				1	14	21.79
				8	4	20.72
				15	0	20.80
	1880	18900		1	0	21.82
				1	14	21.75
				8	4	20.90
				15	0	20.90
	1908.5	19185		1	0	21.78
				1	14	21.75
				8	4	20.66
				15	0	20.71

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1852.5	18625	5	1	0	22.79
				1	24	22.81
				12	6	21.77
				25	0	21.67
	1880	18900		1	0	22.76
				1	24	22.79
				12	6	22.01
				25	0	22.08
	1907.5	19175		1	0	22.69
				1	24	22.75
				12	6	21.70
				25	0	21.65
16QAM	1852.5	18625	5	1	0	22.00
				1	24	22.03
				12	6	20.70
				25	0	20.90
	1880	18900		1	0	21.85
				1	24	21.94
				12	6	21.05
				25	0	20.91
	1907.5	19175		1	0	21.95
				1	24	22.02
				12	6	20.75
				25	0	20.73
64QAM	1852.5	18625	5	1	0	21.79
				1	24	21.86
				12	6	20.68
				25	0	20.76
	1880	18900		1	0	21.81
				1	24	21.80
				12	6	21.05
				25	0	21.03
	1907.5	19175		1	0	21.80
				1	24	21.74
				12	6	20.75
				25	0	20.65

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1855	18650	10	1	0	22.83
				1	49	22.72
				24	12	21.81
				50	0	21.68
	1880	18900		1	0	22.77
				1	49	22.78
				24	12	22.09
				50	0	22.10
	1905	19150		1	0	22.75
				1	49	22.63
				24	12	21.82
				50	0	21.68
16QAM	1855	18650	10	1	0	21.98
				1	49	22.08
				24	12	20.66
				50	0	20.85
	1880	18900		1	0	21.89
				1	49	21.97
				24	12	21.02
				50	0	20.99
	1905	19150		1	0	21.95
				1	49	21.98
				24	12	20.69
				50	0	20.60
64QAM	1855	18650	10	1	0	21.83
				1	49	21.86
				24	12	20.63
				50	0	20.81
	1880	18900		1	0	21.74
				1	49	21.73
				24	12	20.91
				50	0	20.93
	1905	19150		1	0	21.85
				1	49	21.81
				24	12	20.77
				50	0	20.65

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1857.5	18675	15	1	0	22.70
				1	74	22.69
				40	18	21.66
				75	0	21.70
	1880	18900		1	0	22.70
				1	74	22.74
				40	18	22.07
				75	0	21.97
	1902.5	19125		1	0	22.72
				1	74	22.65
				40	18	21.82
				75	0	21.60
16QAM	1857.5	18675	15	1	0	21.95
				1	74	22.10
				40	18	20.70
				75	0	20.90
	1880	18900		1	0	21.87
				1	74	21.96
				40	18	20.95
				75	0	20.95
	1902.5	19125		1	0	21.88
				1	74	21.93
				40	18	20.69
				75	0	20.74
64QAM	1857.5	18675	15	1	0	21.92
				1	74	21.82
				40	18	20.77
				75	0	20.87
	1880	18900		1	0	21.83
				1	74	21.75
				40	18	20.90
				75	0	21.03
	1902.5	19125		1	0	21.79
				1	74	21.77
				40	18	20.78
				75	0	20.67

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1860	18700	20	1	0	22.83
				1	99	22.83
				50	25	21.81
				100	0	21.79
	1880	18900		1	0	22.79
				1	99	22.79
				50	25	22.13
				100	0	22.11
	1900	19100		1	0	22.75
				1	99	22.75
				50	25	21.83
				100	0	21.74
16QAM	1860	18700	20	1	0	22.10
				1	99	22.10
				50	25	20.80
				100	0	20.91
	1880	18900		1	0	21.97
				1	99	21.97
				50	25	21.07
				100	0	21.06
	1900	19100		1	0	22.03
				1	99	22.03
				50	25	20.83
				100	0	20.74
64QAM	1860	18700	20	1	0	21.93
				1	99	21.93
				50	25	20.78
				100	0	20.91
	1880	18900		1	0	21.87
				1	99	21.87
				50	25	21.05
				100	0	21.04
	1900	19100		1	0	21.88
				1	99	21.88
				50	25	20.80
				100	0	20.74

1 RF Power Output down Antenna

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1850.7	18607	1.4	1	0	23.08
				1	5	23.11
				3	2	22.06
				6	0	22.09
	1880	18900		1	0	22.94
				1	5	22.97
				3	2	22.22
				6	0	22.28
	1909.3	19193		1	0	22.82
				1	5	22.86
				3	2	22.13
				6	0	21.96
16QAM	1850.7	18607	1.4	1	0	22.29
				1	5	22.33
				3	2	21.06
				6	0	21.18
	1880	18900		1	0	22.19
				1	5	22.21
				3	2	21.20
				6	0	21.24
	1909.3	19193		1	0	22.18
				1	5	22.10
				3	2	21.05
				6	0	20.97
64QAM	1850.7	18607	1.4	1	0	22.23
				1	5	22.23
				3	2	20.99
				6	0	21.15
	1880	18900		1	0	22.01
				1	5	21.96
				3	2	21.17
				6	0	21.22
	1909.3	19193		1	0	22.05
				1	5	22.09
				3	2	21.08
				6	0	21.05

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1851.5	18615	3	1	0	23.00
				1	14	23.08
				8	4	22.03
				15	0	22.07
	1880	18900		1	0	22.84
				1	14	22.84
				8	4	22.22
				15	0	22.14
	1908.5	19185		1	0	22.92
				1	14	22.92
				8	4	22.04
				15	0	22.04
16QAM	1851.5	18615	3	1	0	22.34
				1	14	22.28
				8	4	21.03
				15	0	21.04
	1880	18900		1	0	22.19
				1	14	22.22
				8	4	21.21
				15	0	21.16
	1908.5	19185		1	0	22.10
				1	14	22.11
				8	4	21.04
				15	0	20.96
64QAM	1851.5	18615	3	1	0	22.27
				1	14	22.15
				8	4	21.07
				15	0	21.05
	1880	18900		1	0	22.11
				1	14	22.00
				8	4	21.25
				15	0	21.23
	1908.5	19185		1	0	22.07
				1	14	22.01
				8	4	21.03
				15	0	21.07

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1852.5	18625	5	1	0	23.07
				1	24	23.01
				12	6	22.05
				25	0	22.10
	1880	18900		1	0	22.96
				1	24	22.93
				12	6	22.25
				25	0	22.23
	1907.5	19175		1	0	22.95
				1	24	22.94
				12	6	22.05
				25	0	22.04
16QAM	1852.5	18625	5	1	0	22.41
				1	24	22.29
				12	6	21.01
				25	0	21.05
	1880	18900		1	0	22.15
				1	24	22.12
				12	6	21.19
				25	0	21.16
	1907.5	19175		1	0	22.13
				1	24	22.14
				12	6	21.03
				25	0	21.05
64QAM	1852.5	18625	5	1	0	22.17
				1	24	22.22
				12	6	21.00
				25	0	21.05
	1880	18900		1	0	22.11
				1	24	21.97
				12	6	21.18
				25	0	21.26
	1907.5	19175		1	0	22.08
				1	24	22.09
				12	6	21.11
				25	0	21.02

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1855	18650	10	1	0	23.02
				1	49	23.02
				24	12	22.09
				50	0	22.16
	1880	18900		1	0	22.88
				1	49	22.91
				24	12	22.13
				50	0	22.22
	1905	19150		1	0	22.88
				1	49	22.84
				24	12	22.03
				50	0	22.07
16QAM	1855	18650	10	1	0	22.39
				1	49	22.31
				24	12	21.04
				50	0	21.10
	1880	18900		1	0	22.15
				1	49	22.19
				24	12	21.18
				50	0	21.13
	1905	19150		1	0	22.17
				1	49	22.07
				24	12	21.12
				50	0	21.01
64QAM	1855	18650	10	1	0	22.21
				1	49	22.24
				24	12	21.05
				50	0	21.11
	1880	18900		1	0	22.10
				1	49	22.06
				24	12	21.13
				50	0	21.27
	1905	19150		1	0	22.03
				1	49	22.07
				24	12	21.06
				50	0	21.06

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1857.5	18675	15	1	0	23.01
				1	74	23.11
				40	18	22.05
				75	0	22.10
	1880	18900		1	0	22.91
				1	74	22.82
				40	18	22.25
				75	0	22.16
	1902.5	19125		1	0	22.91
				1	74	22.93
				40	18	22.13
				75	0	21.99
16QAM	1857.5	18675	15	1	0	22.42
				1	74	22.31
				40	18	21.15
				75	0	21.17
	1880	18900		1	0	22.16
				1	74	22.19
				40	18	21.22
				75	0	21.23
	1902.5	19125		1	0	22.20
				1	74	22.20
				40	18	21.07
				75	0	21.07
64QAM	1857.5	18675	15	1	0	22.23
				1	74	22.25
				40	18	21.00
				75	0	21.10
	1880	18900		1	0	22.05
				1	74	22.10
				40	18	21.19
				75	0	21.24
	1902.5	19125		1	0	22.07
				1	74	22.00
				40	18	21.02
				75	0	21.07

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1860	18700	20	1	0	23.12
				1	99	23.12
				50	25	22.13
				100	0	22.17
	1880	18900		1	0	22.97
				1	99	22.97
				50	25	22.26
				100	0	22.28
	1900	19100		1	0	22.96
				1	99	22.96
				50	25	22.18
				100	0	22.07
16QAM	1860	18700	20	1	0	22.42
				1	99	22.42
				50	25	21.16
				100	0	21.18
	1880	18900		1	0	22.26
				1	99	22.26
				50	25	21.28
				100	0	21.27
	1900	19100		1	0	22.21
				1	99	22.21
				50	25	21.14
				100	0	21.08
64QAM	1860	18700	20	1	0	22.28
				1	99	22.28
				50	25	21.11
				100	0	21.19
	1880	18900		1	0	22.11
				1	99	22.11
				50	25	21.26
				100	0	21.27
	1900	19100		1	0	22.10
				1	99	22.10
				50	25	21.13
				100	0	21.07

2 Occupied Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel	BW (MHz)	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1850.7	18607	1.4	6	0	1.0812	Fig.1	1.0797	Fig.2	1.0810	Fig.3
	1880.0	18900		6	0	1.0808	Fig.4	1.0802	Fig.5	1.0775	Fig.6
	1909.3	19193		6	0	1.0785	Fig.7	1.0781	Fig.8	1.0810	Fig.9
	1851.5	18615	3	15	0	2.6890	Fig.10	2.6802	Fig.11	2.6792	Fig.12
	1880.0	18900		15	0	2.6849	Fig.13	2.6917	Fig.14	2.6857	Fig.15
	1908.5	19185		15	0	2.6888	Fig.16	2.6831	Fig.17	2.6856	Fig.18
	1852.5	18625	5	25	0	4.4761	Fig.19	4.4777	Fig.20	4.4844	Fig.21
	1880.0	18900		25	0	4.4868	Fig.22	4.4828	Fig.23	4.4916	Fig.24
	1907.5	19175		25	0	4.4815	Fig.25	4.4863	Fig.26	4.4915	Fig.27
	1855	18650	10	50	0	8.9677	Fig.28	8.9674	Fig.29	8.9629	Fig.30
	1880	18900		50	0	8.9829	Fig.31	8.9617	Fig.32	8.9681	Fig.33
	1905	19150		50	0	8.9766	Fig.34	8.9749	Fig.35	8.9678	Fig.36
	1857.5	18675	15	75	0	13.421	Fig.37	13.415	Fig.38	13.415	Fig.39
	1880.0	18900		75	0	13.430	Fig.40	13.462	Fig.41	13.412	Fig.42
	1902.5	19125		75	0	13.412	Fig.43	13.426	Fig.44	13.409	Fig.45
	1860	18700	20	100	0	17.839	Fig.46	17.838	Fig.47	17.790	Fig.48
	1880	18900		100	0	17.907	Fig.49	17.868	Fig.50	17.896	Fig.51
	1900	19100		100	0	17.831	Fig.52	17.870	Fig.53	17.836	Fig.54

Band	Carrier frequency (MHz)	Channel	BW (MHz)	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
2	1850.7	18607	1.4	6	0	1.241	Fig.1	1.237	Fig.2	1.222	Fig.3
	1880.0	18900		6	0	1.235	Fig.4	1.241	Fig.5	1.227	Fig.6
	1909.3	19193		6	0	1.239	Fig.7	1.227	Fig.8	1.240	Fig.9
	1851.5	18615	3	15	0	2.887	Fig.10	2.890	Fig.11	2.877	Fig.12
	1880.0	18900		15	0	2.883	Fig.13	2.868	Fig.14	2.870	Fig.15
	1908.5	19185		15	0	2.880	Fig.16	2.890	Fig.17	2.887	Fig.18
	1852.5	18625	5	25	0	5.078	Fig.19	5.041	Fig.20	5.033	Fig.21
	1880.0	18900		25	0	4.994	Fig.22	5.061	Fig.23	5.106	Fig.24
	1907.5	19175		25	0	4.987	Fig.25	5.018	Fig.26	5.154	Fig.27
	1855	18650	10	50	0	9.856	Fig.28	9.768	Fig.29	9.662	Fig.30
	1880	18900		50	0	9.772	Fig.31	9.918	Fig.32	9.821	Fig.33
	1905	19150		50	0	9.819	Fig.34	9.728	Fig.35	9.790	Fig.36
	1857.5	18675	15	75	0	14.56	Fig.37	14.69	Fig.38	14.56	Fig.39
	1880.0	18900		75	0	14.67	Fig.40	14.59	Fig.41	14.61	Fig.42
	1902.5	19125		75	0	14.57	Fig.43	14.39	Fig.44	14.60	Fig.45
	1860	18700	20	100	0	19.29	Fig.46	19.24	Fig.47	19.22	Fig.48
	1880	18900		100	0	19.31	Fig.49	19.24	Fig.50	19.34	Fig.51
	1900	19100		100	0	19.12	Fig.52	19.16	Fig.53	19.08	Fig.54

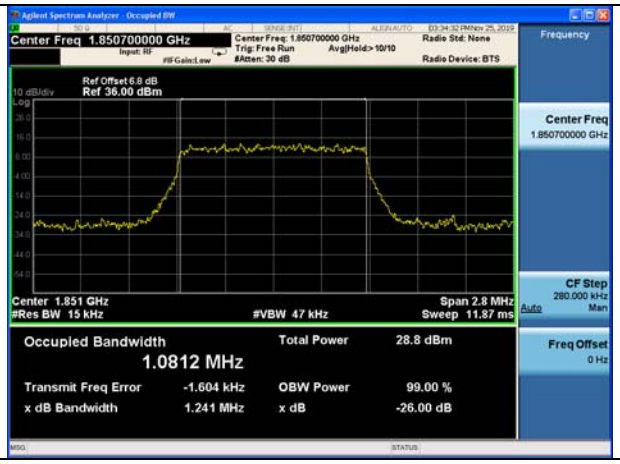


Fig.1

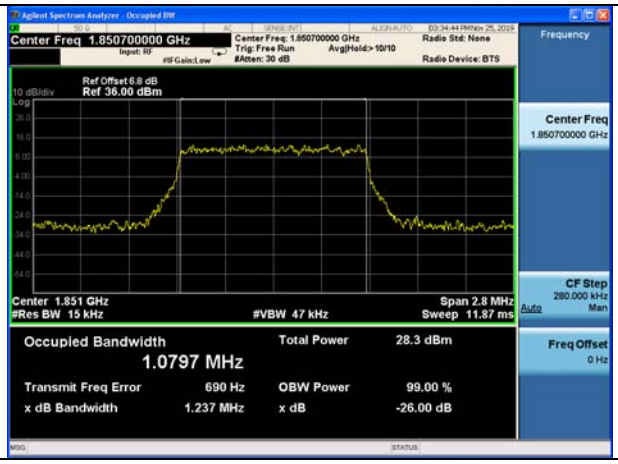


Fig.2

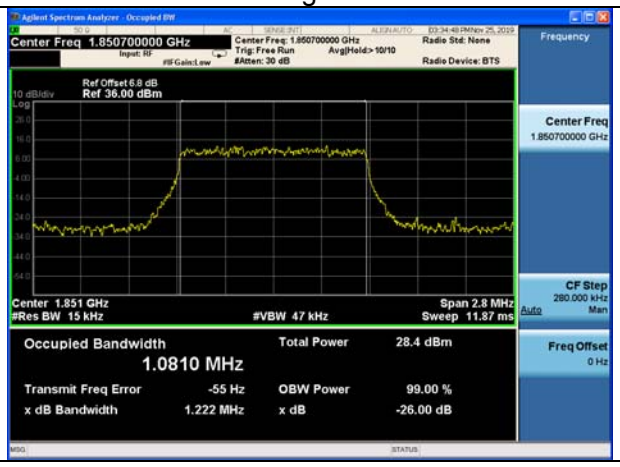


Fig.3

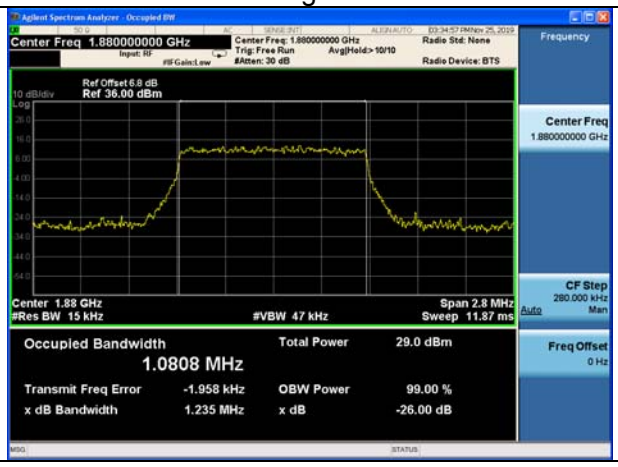


Fig.4

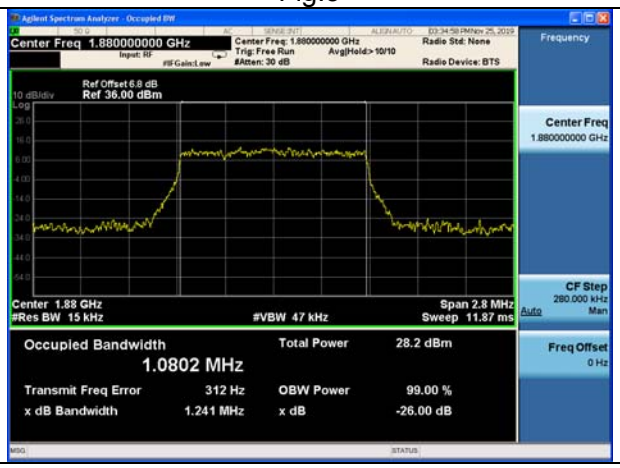


Fig.5

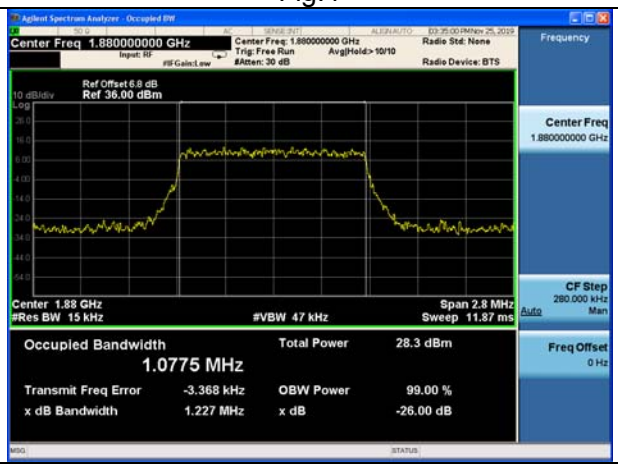


Fig.6

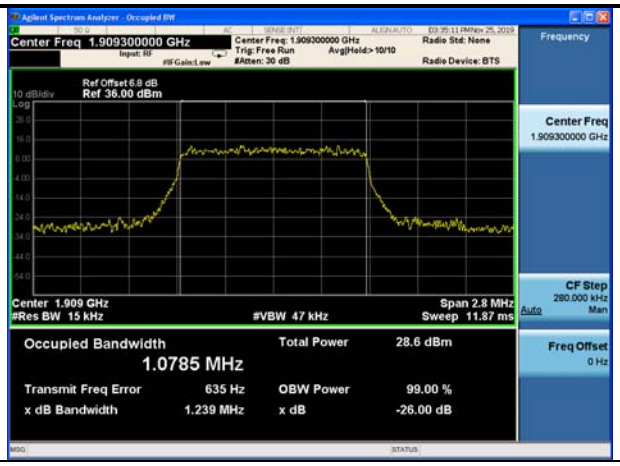


Fig.7

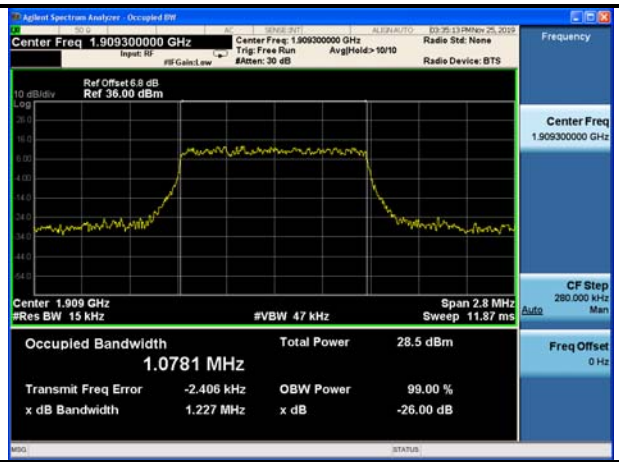


Fig.8

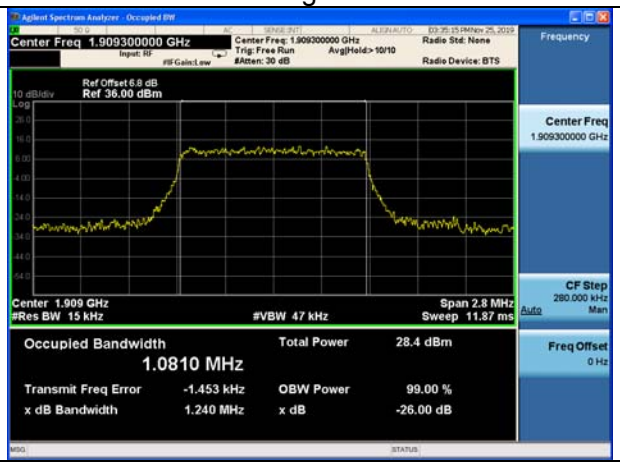


Fig.9

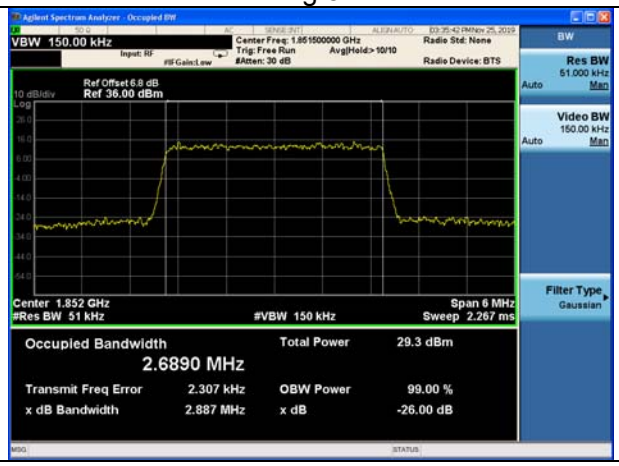


Fig.10

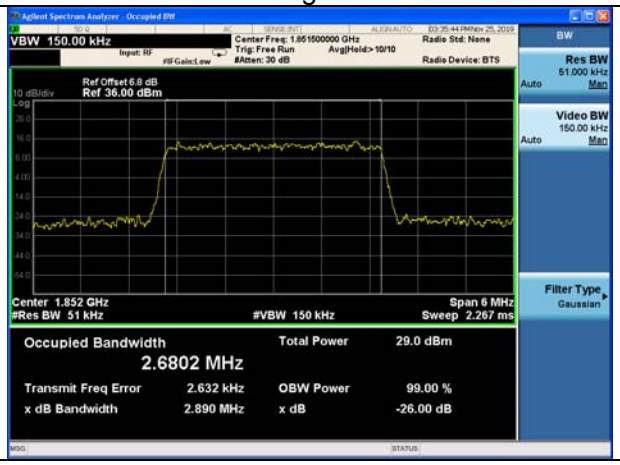


Fig.11

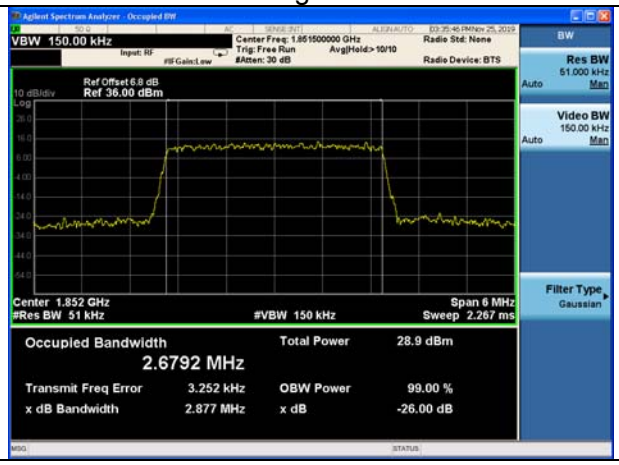


Fig.12

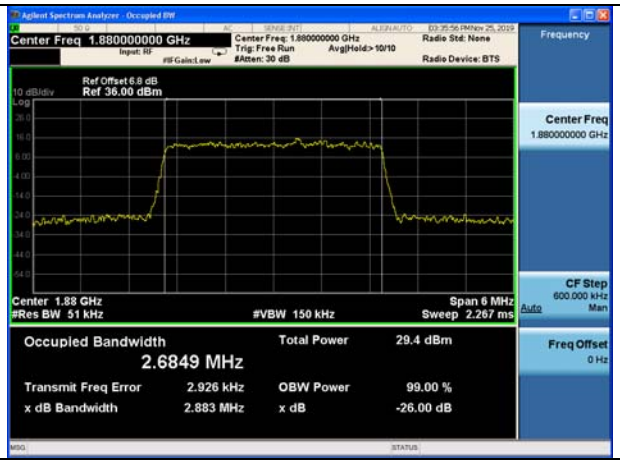


Fig.13

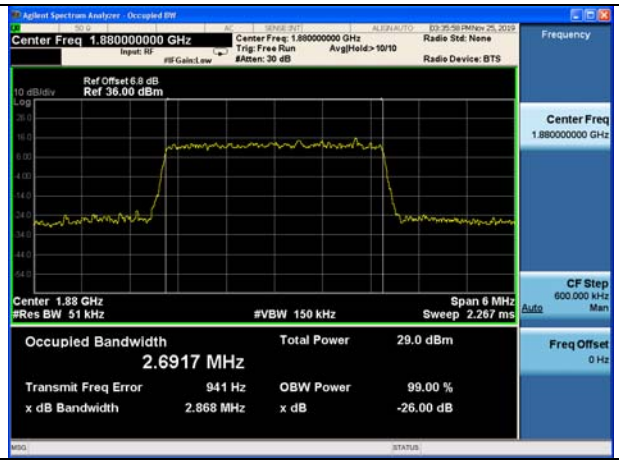


Fig.14

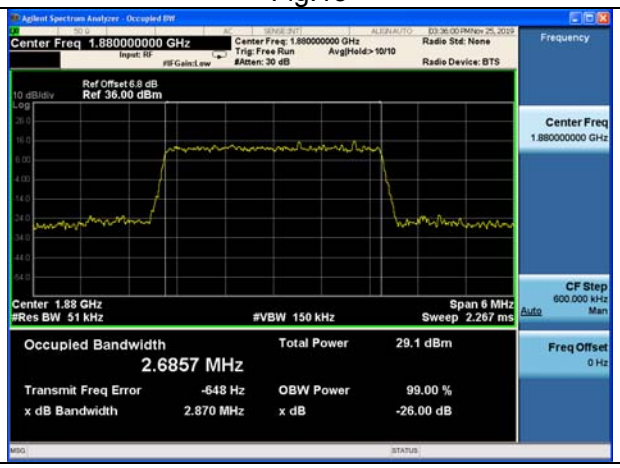


Fig.15

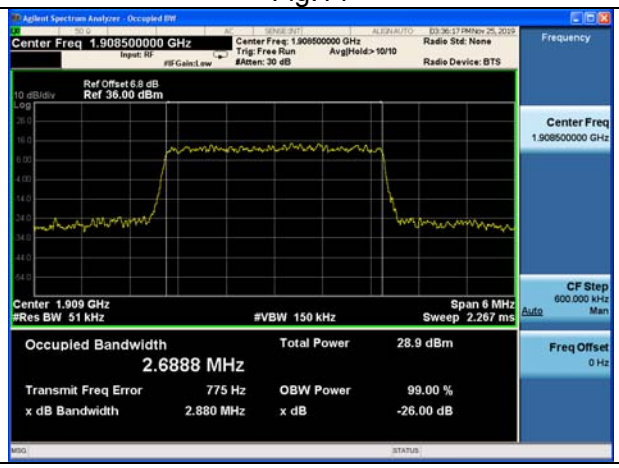


Fig.16

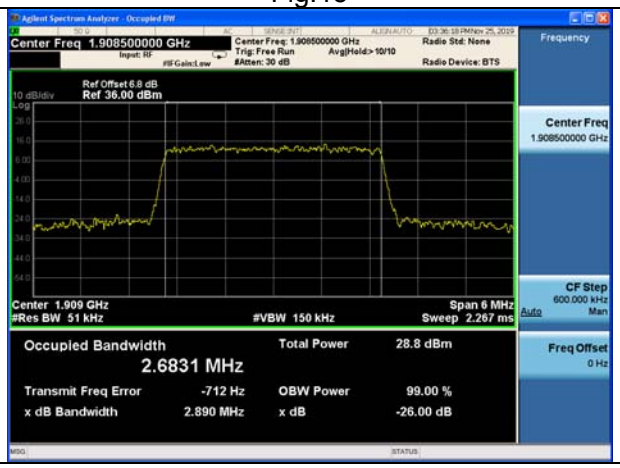


Fig.17

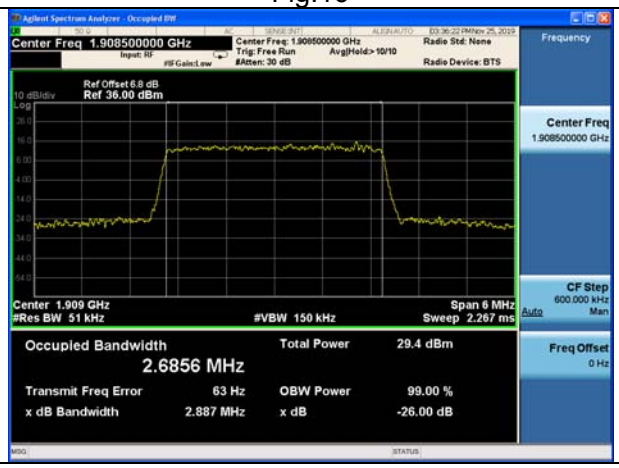


Fig.18

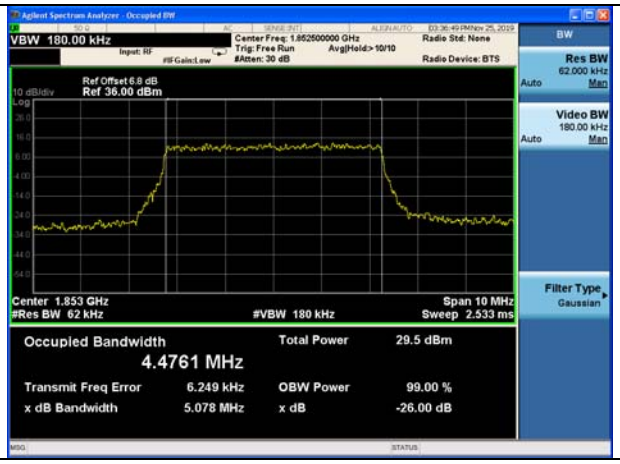


Fig.19

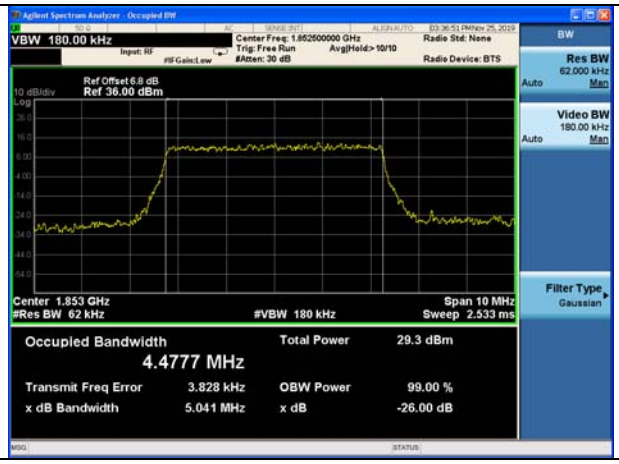


Fig.20

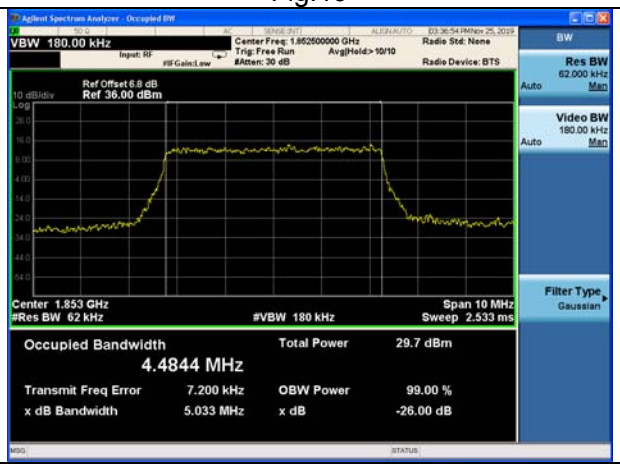


Fig.21

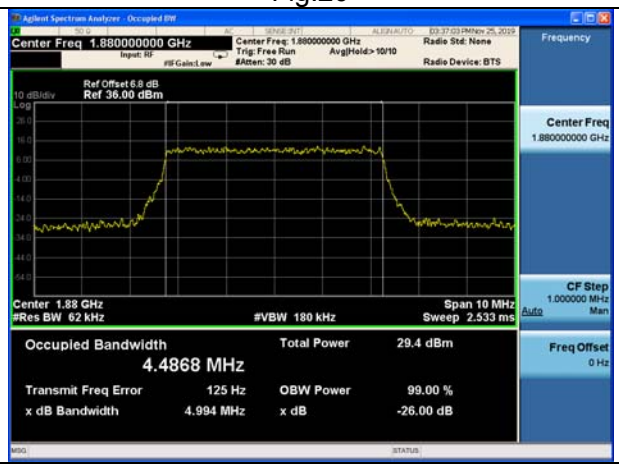


Fig.22

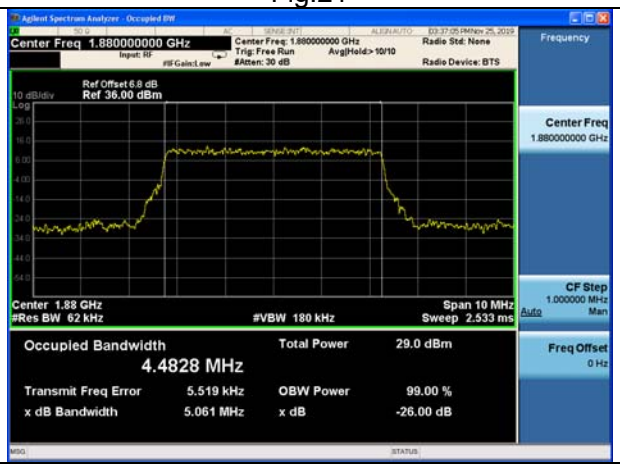


Fig.23

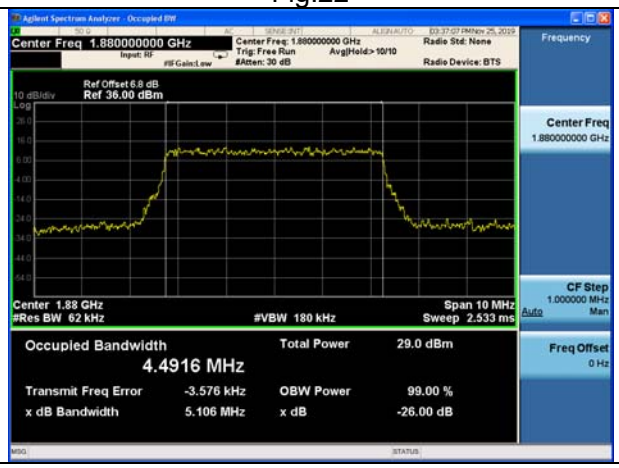


Fig.24

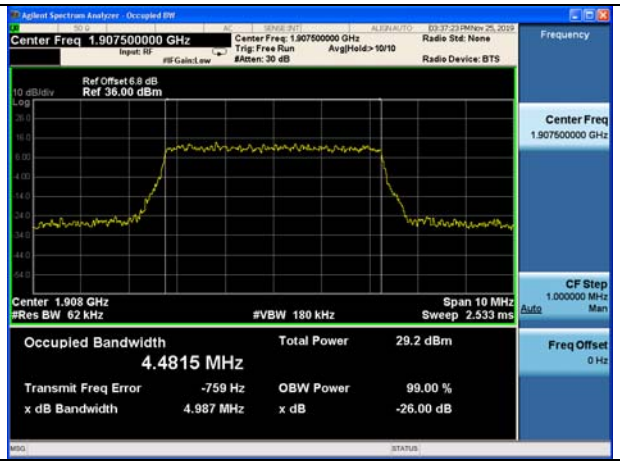


Fig.25

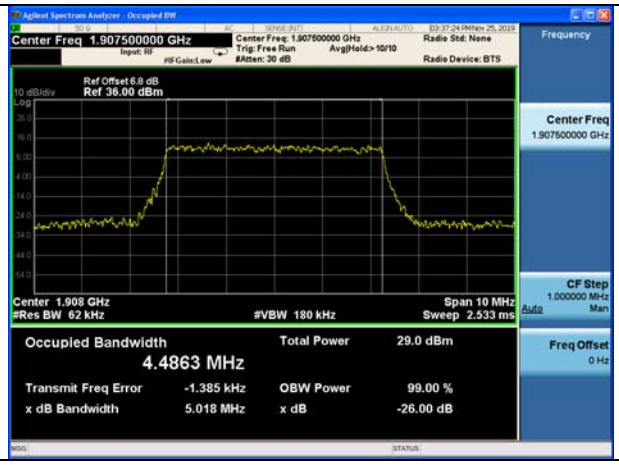


Fig.26

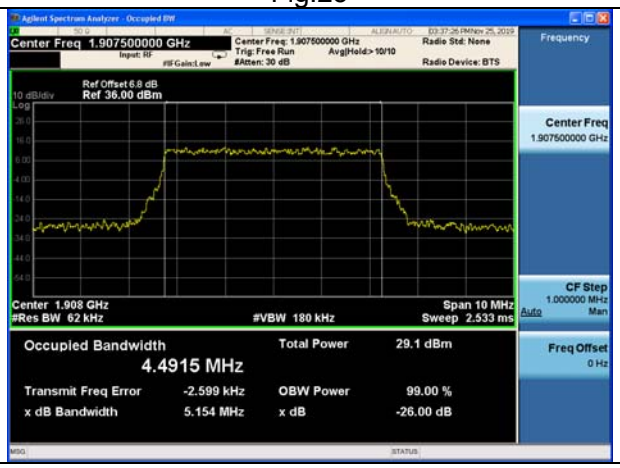


Fig.27

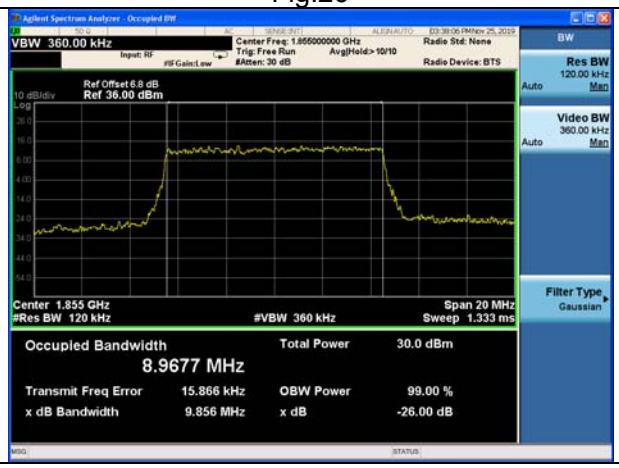


Fig.28

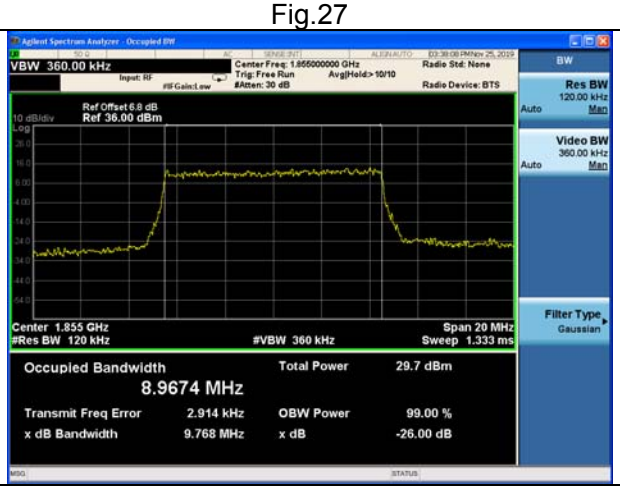


Fig.29

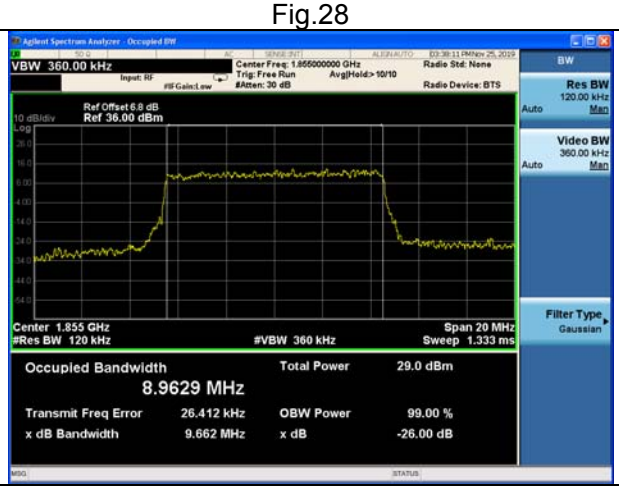


Fig.30

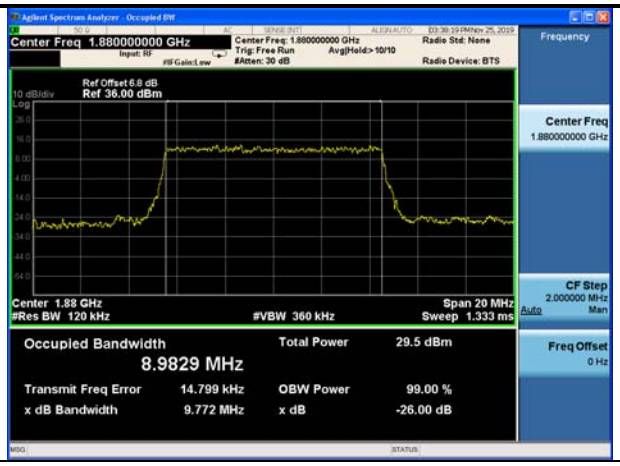


Fig.31

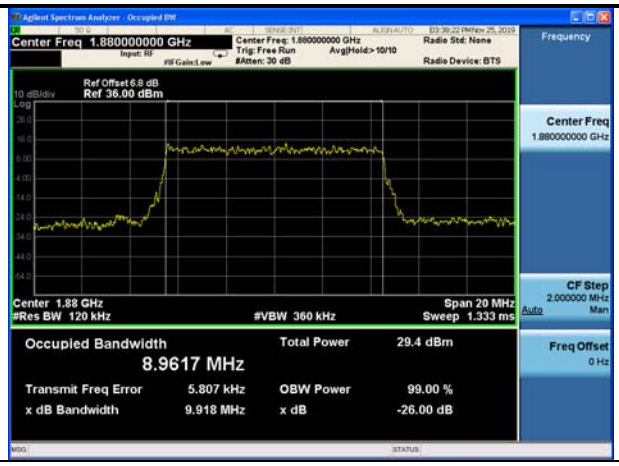


Fig.32

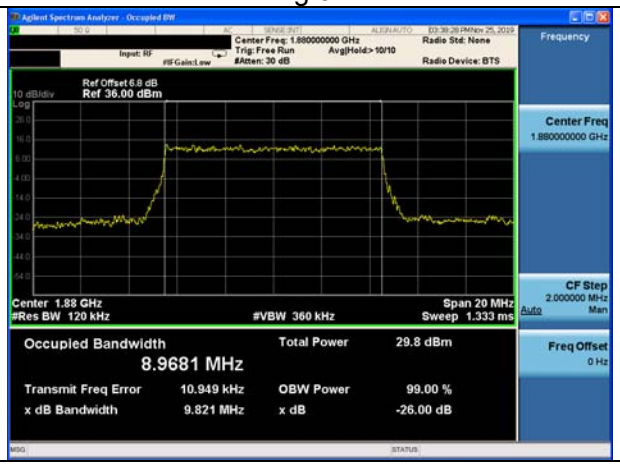


Fig.33

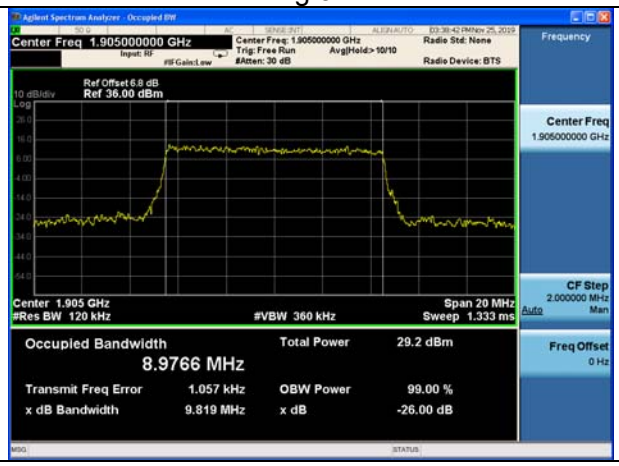


Fig.34

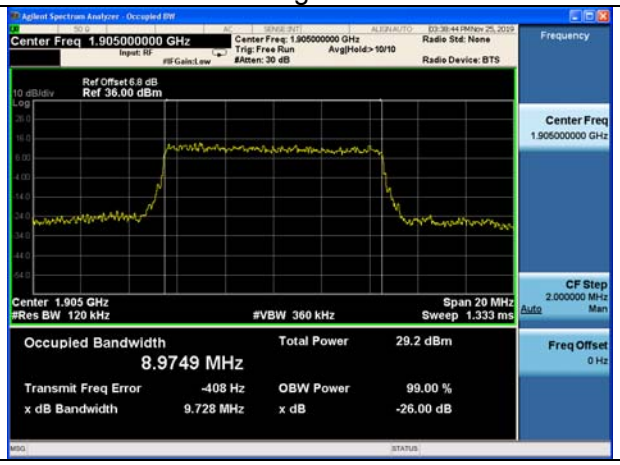


Fig.35

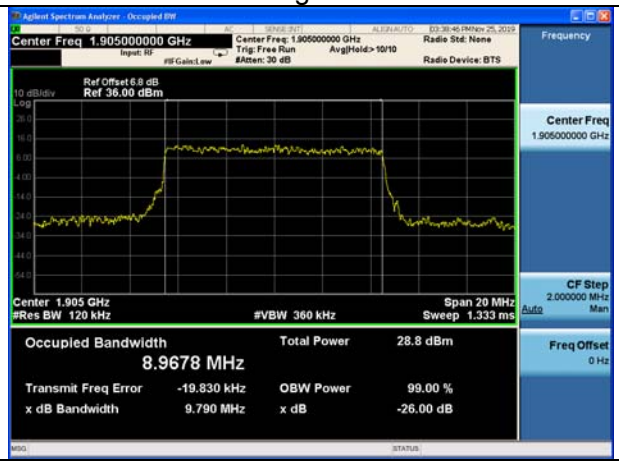


Fig.36

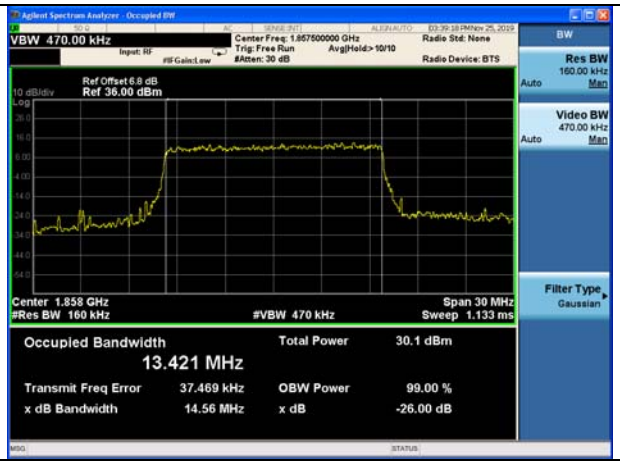


Fig.37

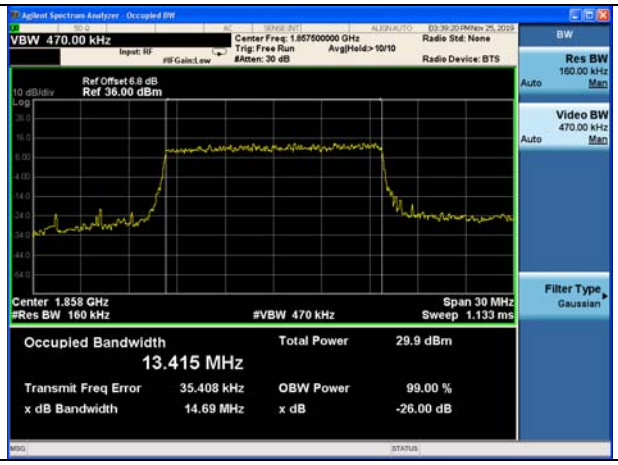


Fig.38

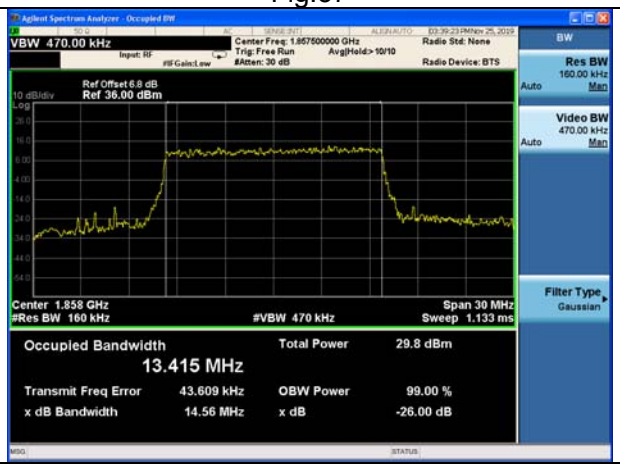


Fig.39

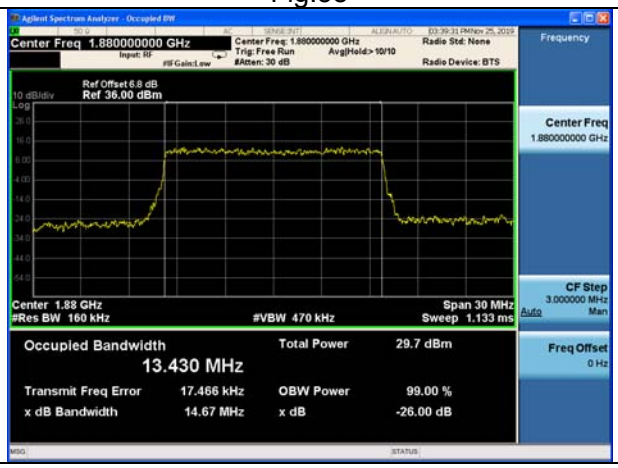


Fig.40

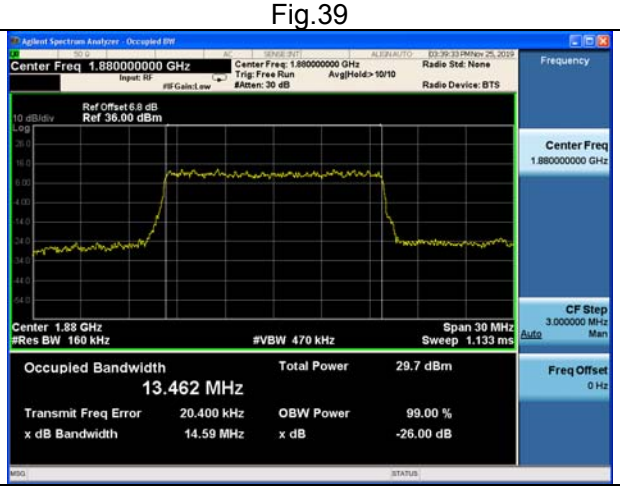


Fig.41

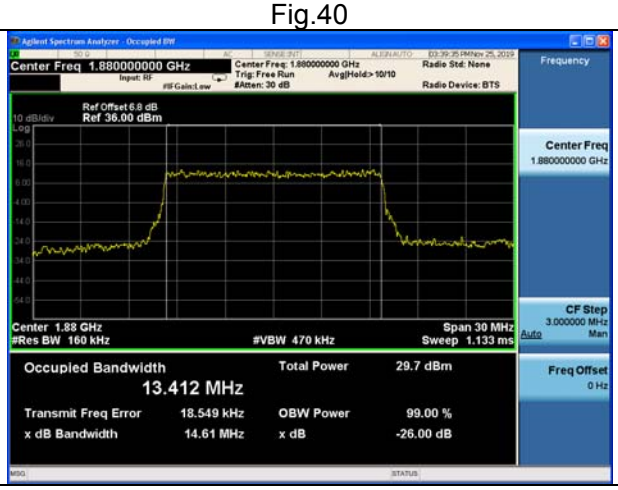


Fig.42

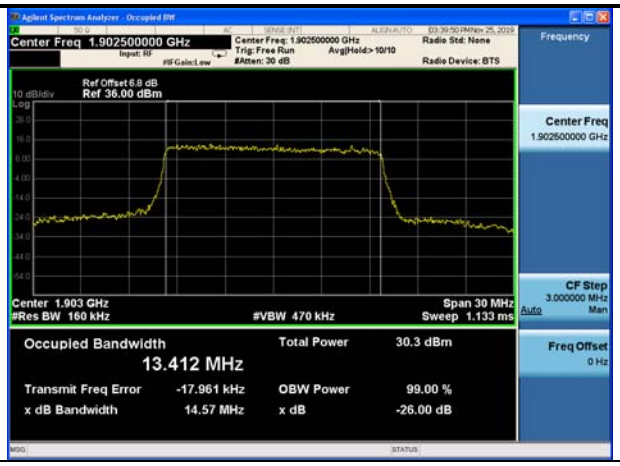


Fig.43

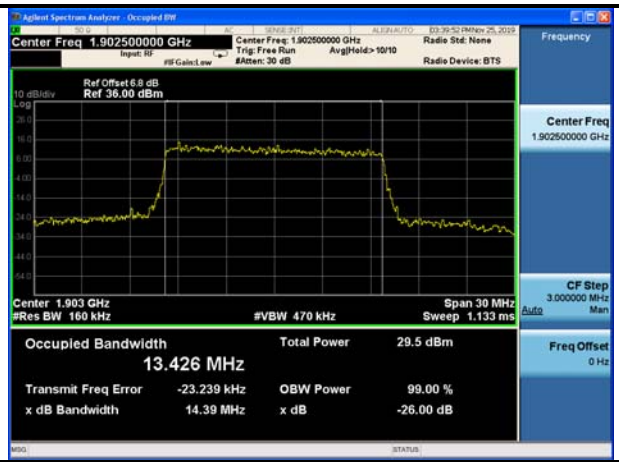


Fig.44

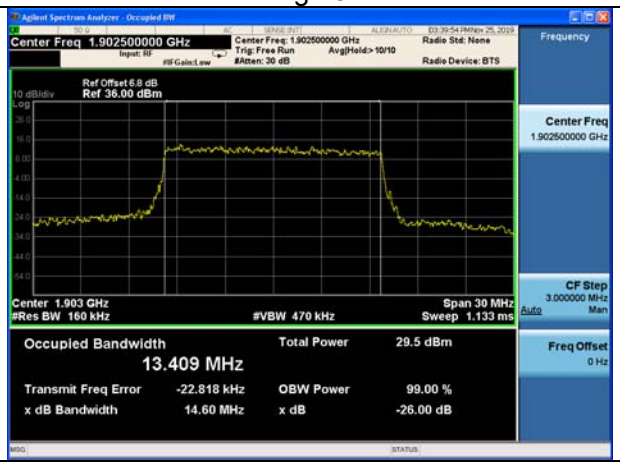


Fig.45

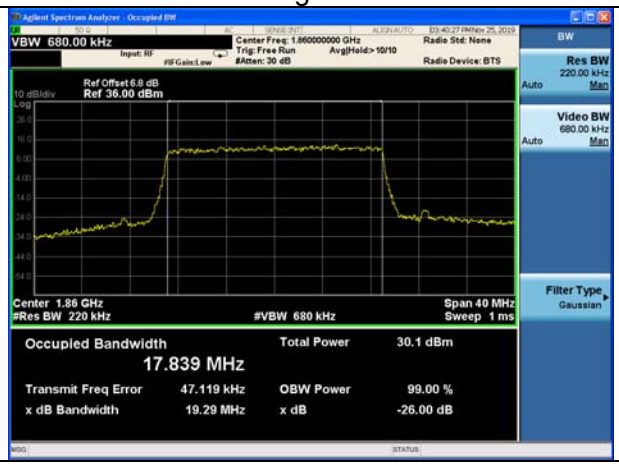


Fig.46

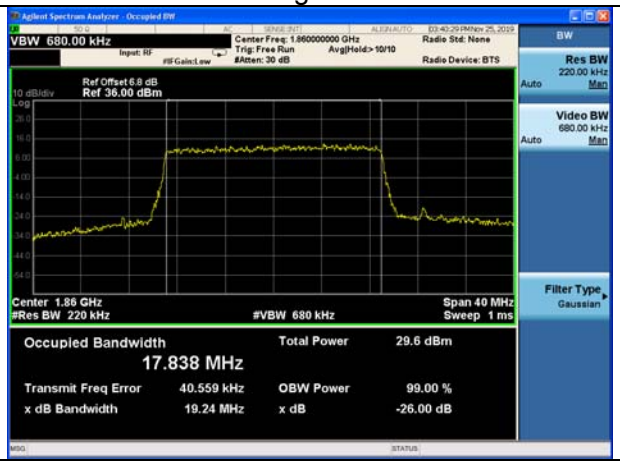


Fig.47

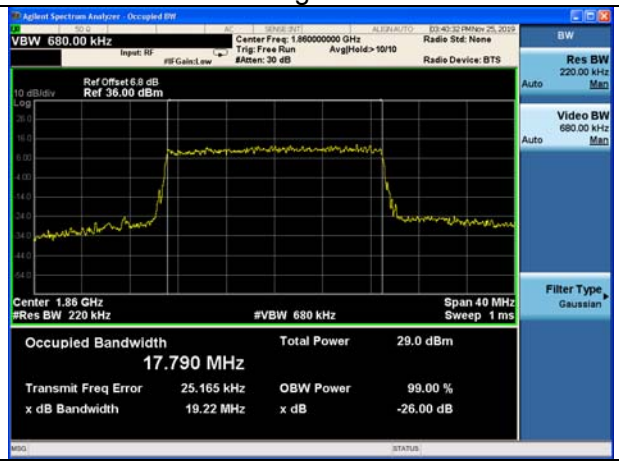


Fig.48

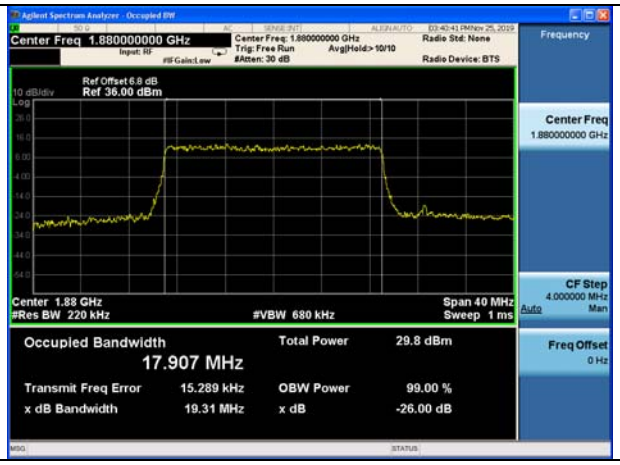


Fig.49

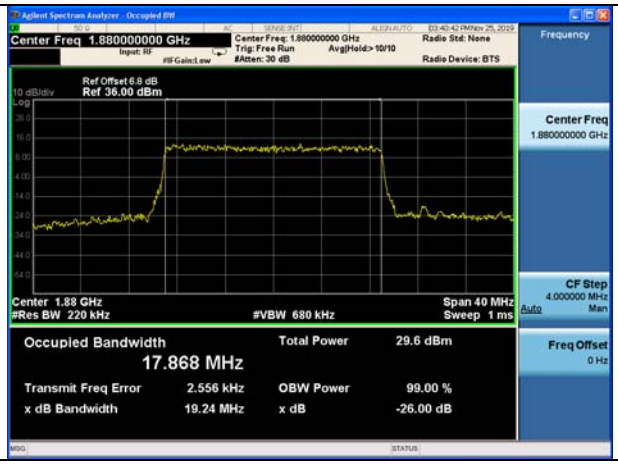


Fig.50

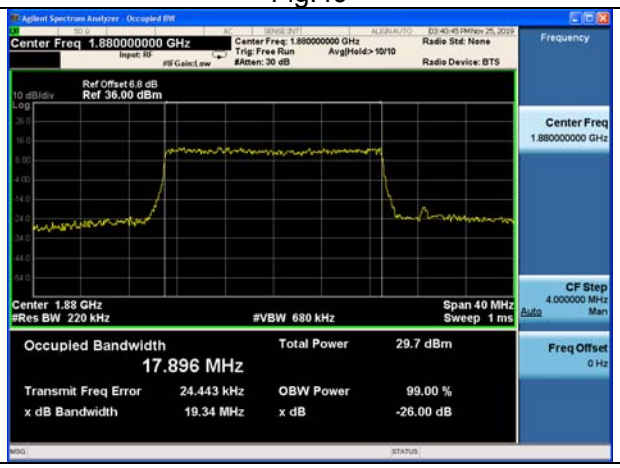


Fig.51

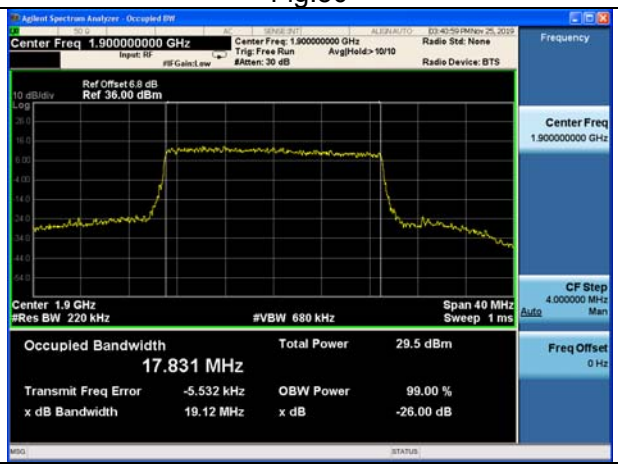


Fig.52

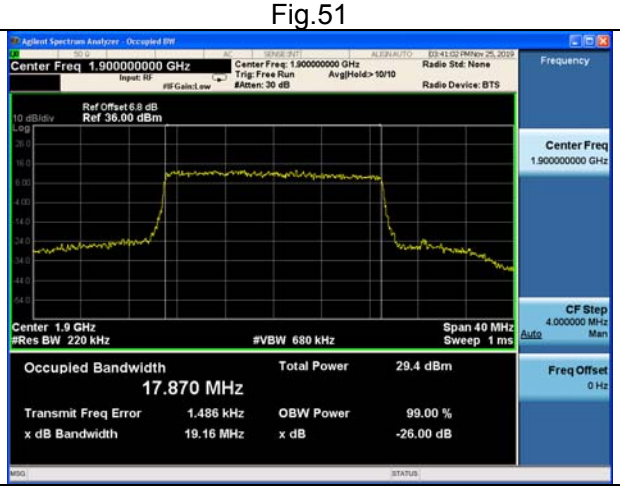


Fig.53

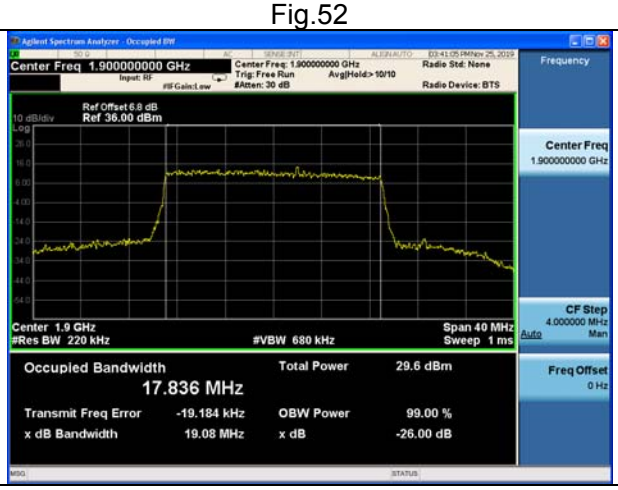


Fig.54

3 Peak-Average Ratio

Band	Carrier frequency (MHz)	Channel	BW (MHz)	RB Size	RB Offset	QPSK	16-QAM	64-QAM
2	1880.0	18900	1.4	1	0	Fig.1	Fig.2	Fig.3
			3	1	0	Fig.4	Fig.5	Fig.6
			5	1	0	Fig.7	Fig.8	Fig.9
			10	1	0	Fig.10	Fig.11	Fig.12
			15	1	0	Fig.13	Fig.14	Fig.15
			20	1	0	Fig.16	Fig.17	Fig.18

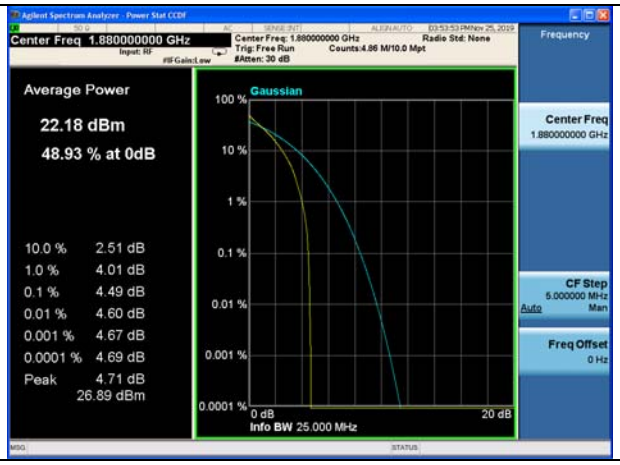


Fig.1

Fig.2

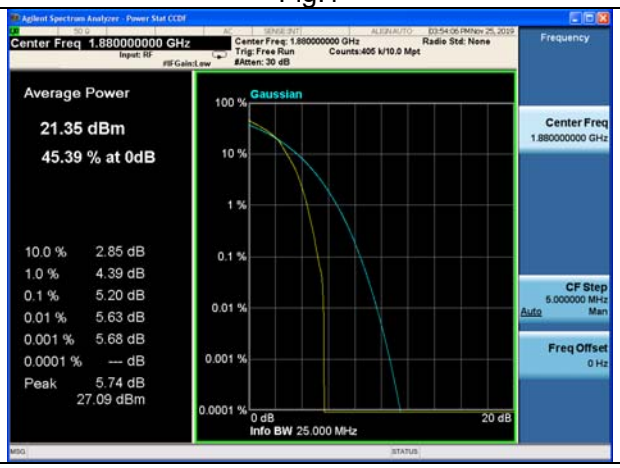


Fig.3

Fig.4

Fig.5

Fig.6

Fig.7

Fig.8

Fig.9

Fig.10

Fig.11

Fig.12

Fig.13

Fig.14

Fig.15

Fig.16


Agilent Spectrum Analyzer - Power Stat CCDF
Center Freq 1.880000000 GHz
Center Freq: 1.880000000 GHz
Trig: Free Run
#Atten: 30 dB
Counts:495 k/10.0 Mpt
Radio Std: None
Frequency
Average Power
21.56 dBm
43.94 % at 0dB
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
10.0 % 2.91 dB
1.0 % 4.84 dB
0.1 % 5.43 dB
0.01 % 5.66 dB
0.001 % 5.71 dB
0.0001 % --- dB
Peak 5.76 dB
27.32 dBm
0 dB
20 dB
Info BW 25.000 MHz
Center Freq
1.880000000 GHz
CF Step
5.000000 MHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS

Fig.17


Agilent Spectrum Analyzer - Power Stat CCDF
Center Freq 1.880000000 GHz
Center Freq: 1.880000000 GHz
Trig: Free Run
#Atten: 30 dB
Counts:495 k/10.0 Mpt
Radio Std: None
Frequency
Average Power
21.33 dBm
44.10 % at 0dB
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
10.0 % 2.96 dB
1.0 % 4.54 dB
0.1 % 5.05 dB
0.01 % 5.34 dB
0.001 % 5.43 dB
0.0001 % --- dB
Peak 5.54 dB
26.87 dBm
0 dB
20 dB
Info BW 25.000 MHz
Center Freq
1.880000000 GHz
CF Step
5.000000 MHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS

Fig.18

4 Spurious Emissions at antenna terminal

Band	Carrier frequency (MHz)	Channel	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
2	1860	18700	20	1	0	Fig.1-2
	1880	18900	20	1	0	Fig.3-4
	1900	19100	20	1	0	Fig.5-6

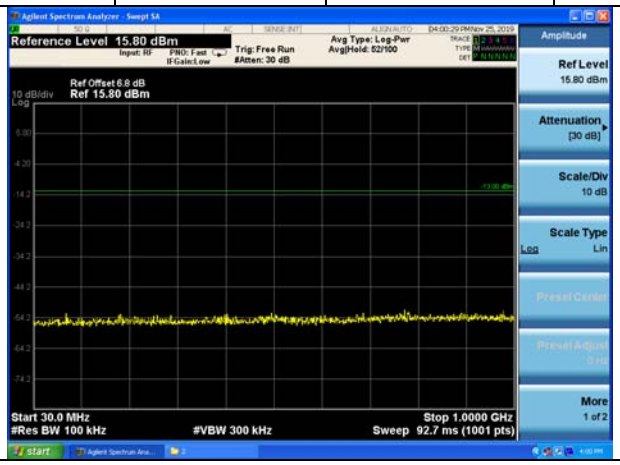


Fig.1

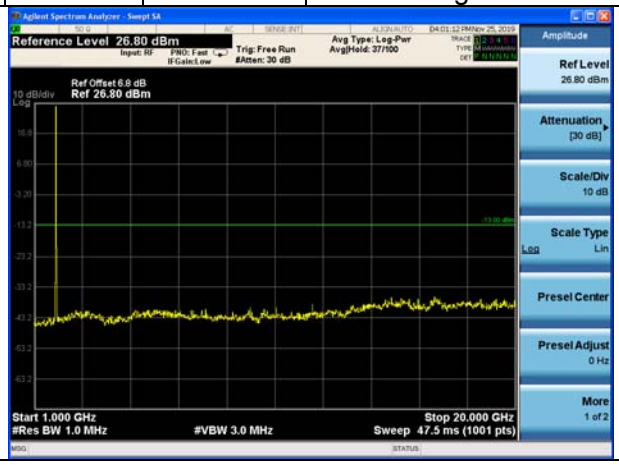


Fig.2

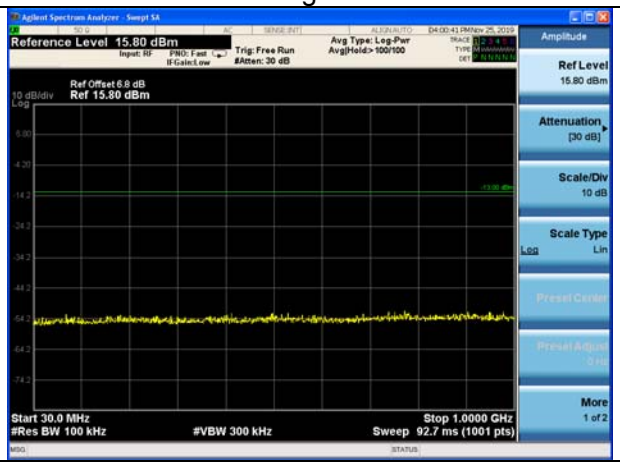


Fig3

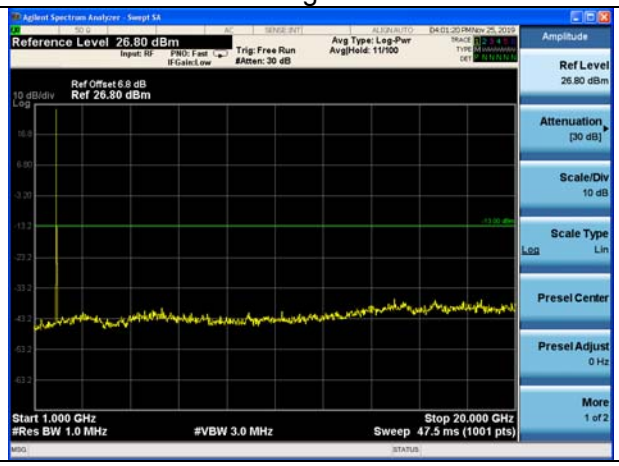


Fig4

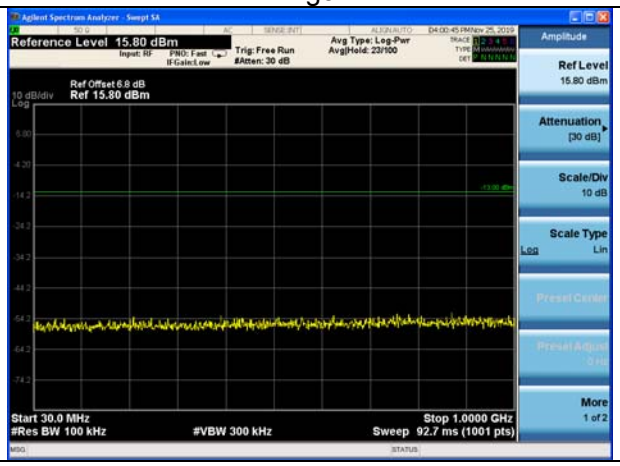


Fig5

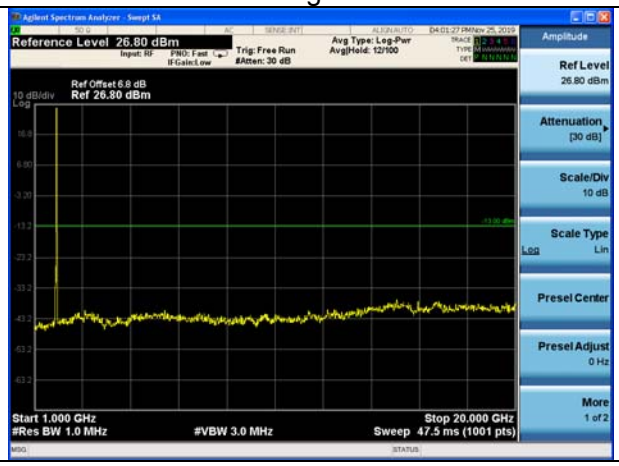


Fig6

5 Band Edges Compliance

Test result

Band	Carrier frequency (MHz)	Channel	BW	RB Size	RB Offset	Band Edges Plot
						QPSK
2	1850.7	18607	1.4	1	0	Fig.1
				6	0	Fig.2
	1909.3	19193		1	5	Fig.3
				6	0	Fig.4
	1851.5	18615	3	1	0	Fig.5
				15	0	Fig.6
	1908.5	19185		1	14	Fig.7
				15	0	Fig.8
	1852.5	18625	5	1	0	Fig.9
				25	0	Fig.10
	1907.5	19175		1	24	Fig.11
				25	0	Fig.12
	1855	18650	10	1	0	Fig.13
				50	0	Fig.14
	1905	19150		1	49	Fig.15
				50	0	Fig.16
	1857.5	18675	15	1	0	Fig.17
				75	0	Fig.18
	1902.5	19125		1	74	Fig.19
				75	0	Fig.20
	1860	18700	20	1	0	Fig.21
				100	0	Fig.22
	1900	19100		1	99	Fig.23
				100	0	Fig.24

Fig.1

Fig.2

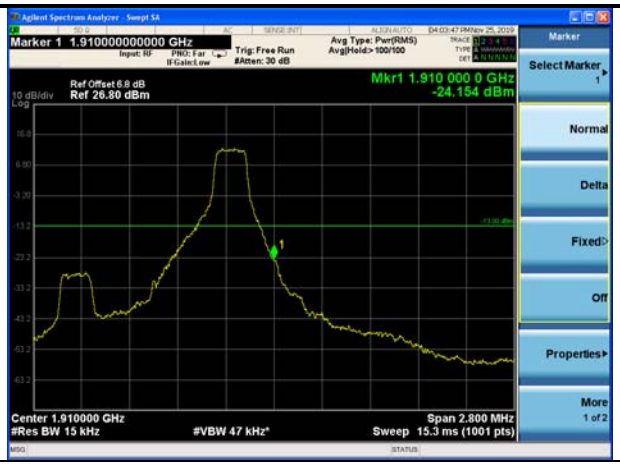


Fig.3

Fig.4

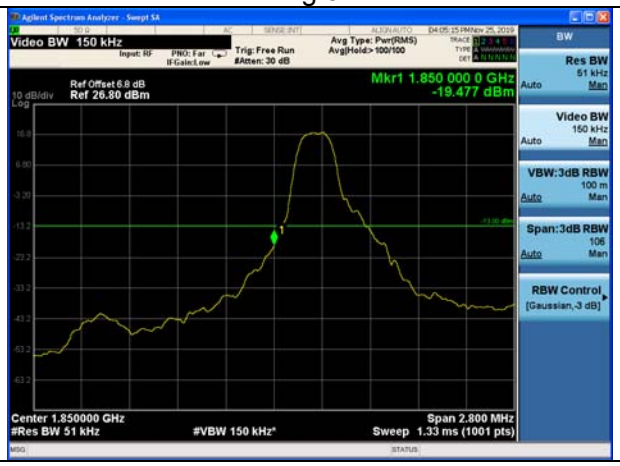


Fig.5

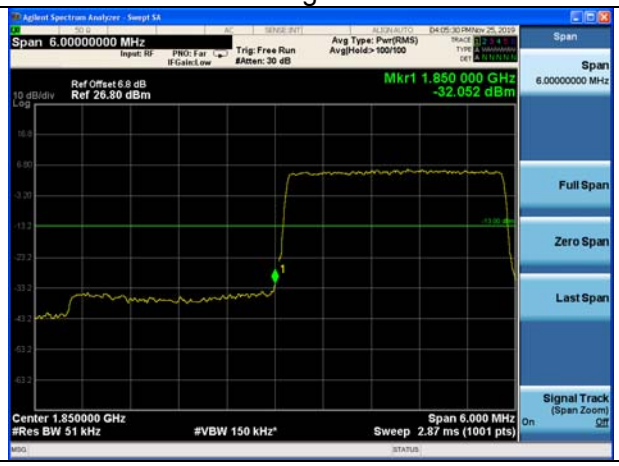


Fig.6

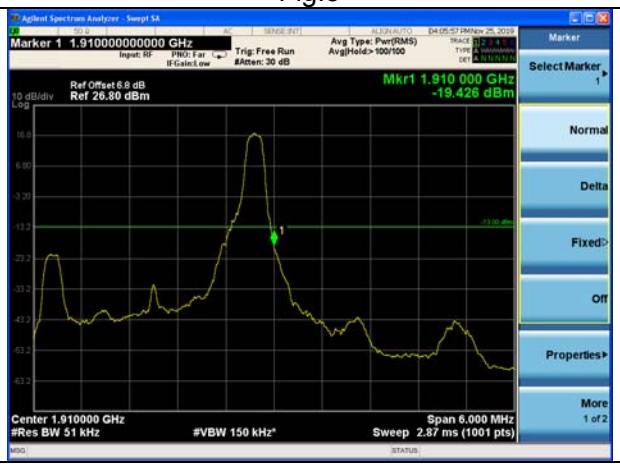


Fig.7

Fig.8

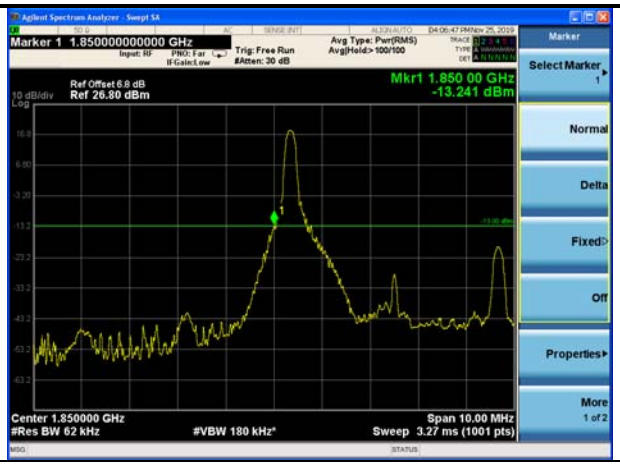


Fig.9

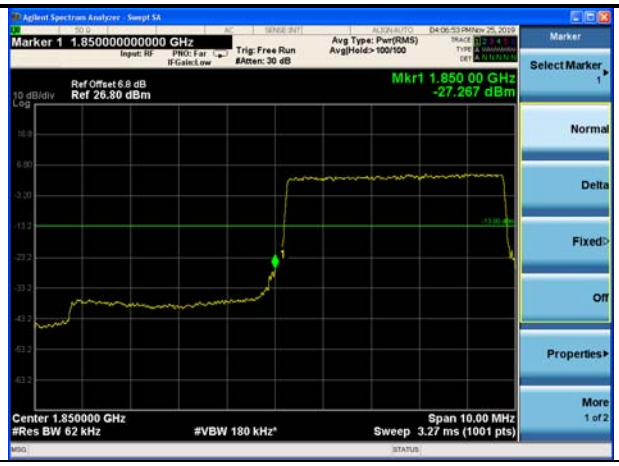


Fig.10

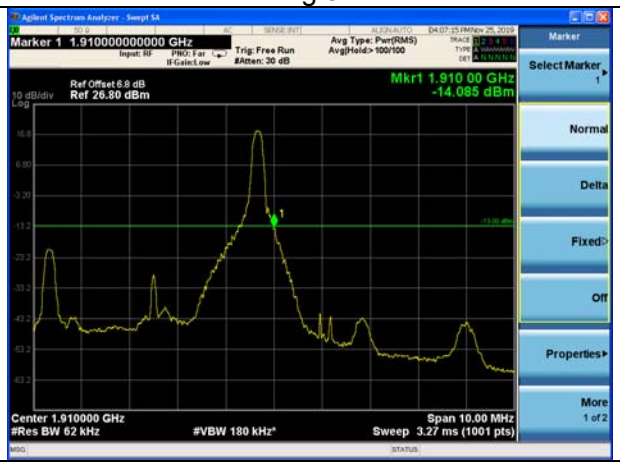


Fig.11

Fig.12

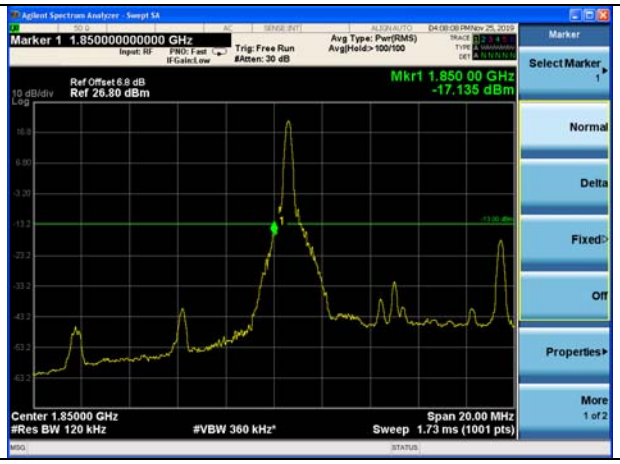


Fig.13

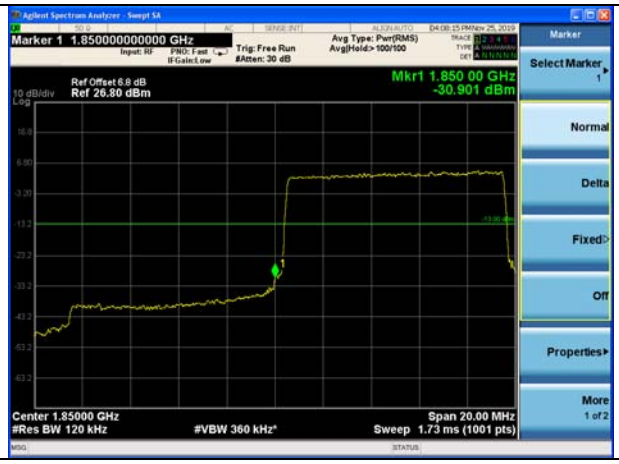


Fig.14

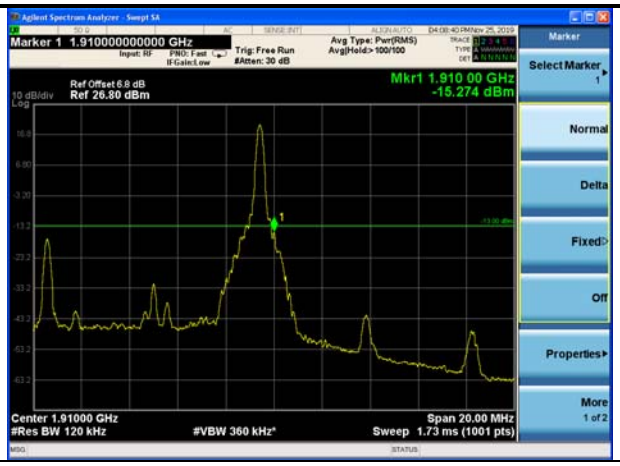


Fig.15

Fig.16

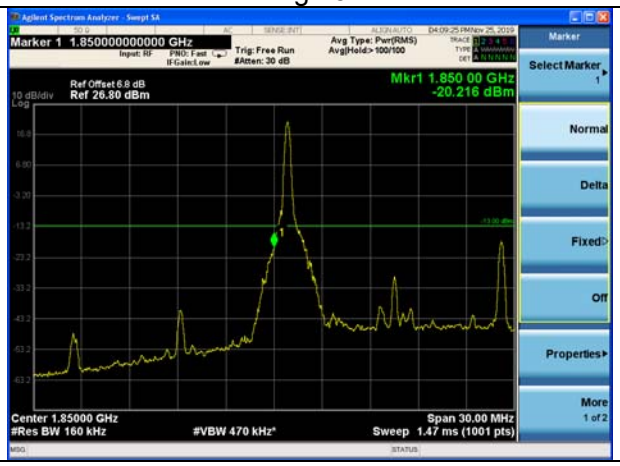


Fig.17

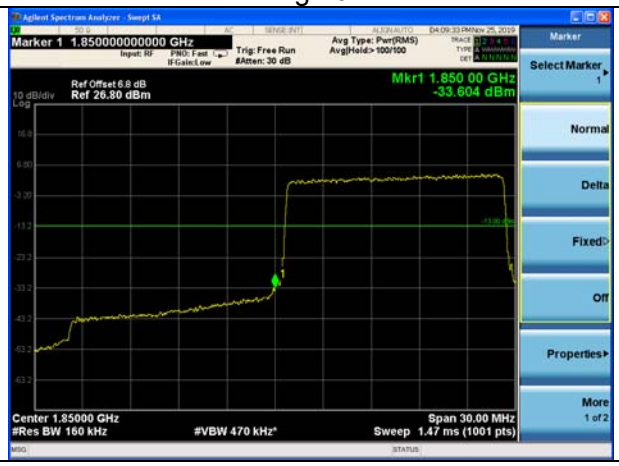


Fig.18

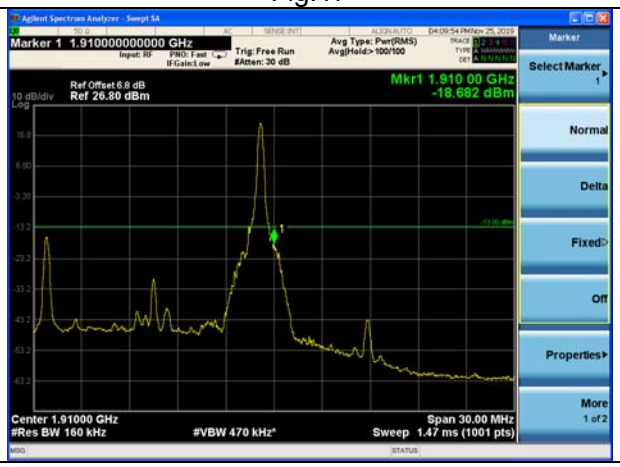


Fig.19

Fig.20

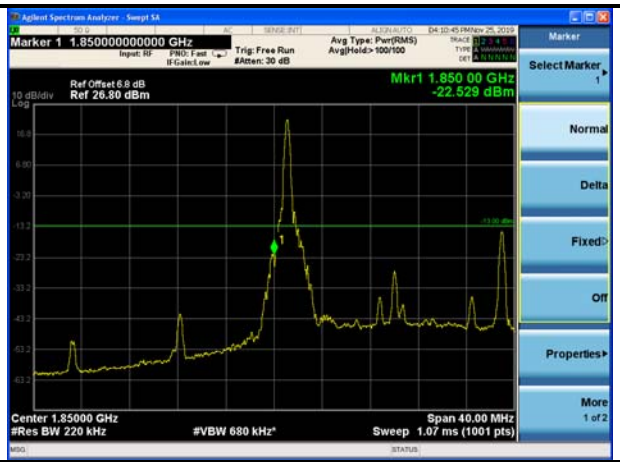


Fig.21

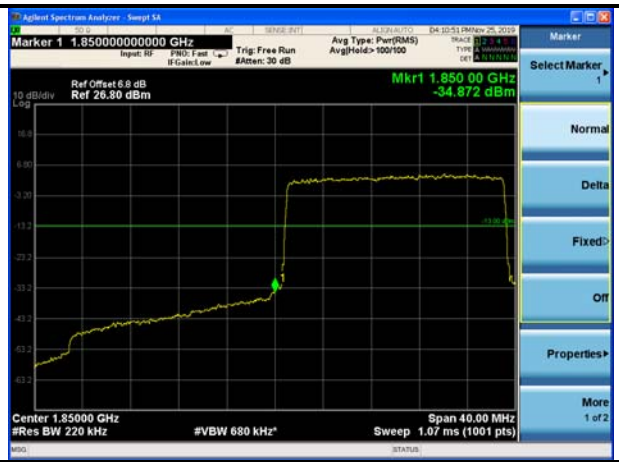


Fig.22

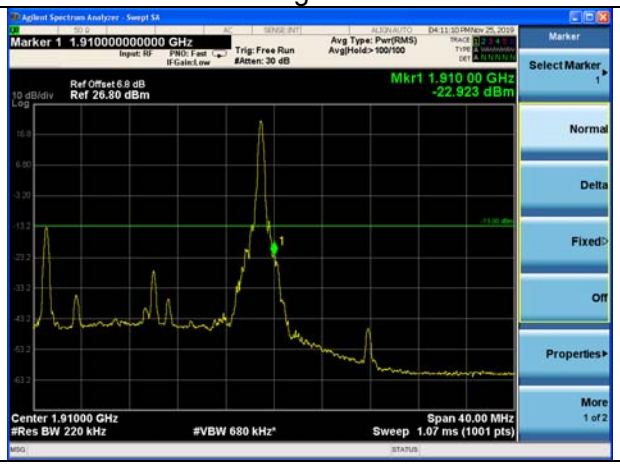


Fig.23

Fig.24

6 Frequency Stability

Test result:

Temperature(°C)	Voltage	Test Result (ppm) Band2 Low Channel					
		1.4M	3M	5M	10M	15M	20M
-10	NV	-0.024	0.036	0.042	-0.019	0.056	-0.075
0	NV	-0.001	-0.049	-0.074	-0.041	0.010	-0.008
+10	NV	-0.034	-0.074	-0.001	0.049	0.037	-0.069
+20	NV	0.000	0.000	0.000	0.000	0.000	0.000
+30	NV	0.062	0.092	0.014	0.069	-0.036	0.046
+40	NV	0.018	-0.098	-0.025	0.018	0.015	0.037
+50	NV	-0.050	-0.005	0.091	-0.085	-0.057	-0.003
+55	NV	0.000	0.061	0.090	-0.004	0.051	0.008
+20	LV	-0.016	-0.093	-0.037	-0.027	0.087	-0.003
+20	HV	0.047	0.068	-0.022	0.068	-0.091	0.030

Temperature(°C)	Voltage	Test Result (ppm) Band2 High Channel					
		1.4M	3M	5M	10M	15M	20M
-10	NV	0.009	-0.086	-0.061	0.037	0.019	0.028
0	NV	0.059	-0.046	-0.068	-0.024	-0.031	-0.011
+10	NV	0.010	0.015	0.073	-0.073	0.029	-0.029
+20	NV	0.000	0.000	0.000	0.000	0.000	0.000
+30	NV	0.029	0.033	0.048	-0.024	0.095	-0.011
+40	NV	0.070	-0.020	-0.023	-0.086	0.074	0.038
+50	NV	0.059	-0.064	0.094	-0.095	-0.051	-0.051
+55	NV	0.037	0.064	-0.056	-0.092	-0.041	0.070
+20	LV	-0.065	-0.069	-0.071	0.023	-0.089	0.019
+20	HV	-0.092	-0.009	-0.048	-0.043	0.028	-0.050

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

LTE Band 4

1 RF Power Output up Antenna

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1710.7	19957	1.4	1	0	22.44
				1	5	22.40
				3	2	21.46
				6	0	21.52
	1732.5	20175		1	0	22.42
				1	5	22.43
				3	2	21.76
				6	0	21.66
	1754.3	20393		1	0	22.38
				1	5	22.50
				3	2	21.82
				6	0	21.57
16QAM	1710.7	19957	1.4	1	0	21.84
				1	5	21.81
				3	2	20.44
				6	0	20.64
	1732.5	20175		1	0	21.87
				1	5	21.84
				3	2	20.79
				6	0	20.61
	1754.3	20393		1	0	21.89
				1	5	21.83
				3	2	20.66
				6	0	20.60
64QAM	1710.7	19957	1.4	1	0	21.74
				1	5	21.64
				3	2	20.52
				6	0	20.62
	1732.5	20175		1	0	21.66
				1	5	21.63
				3	2	20.77
				6	0	20.62
	1754.3	20393		1	0	21.64
				1	5	21.68
				3	2	20.79
				6	0	20.57

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1711.5	19965	3	1	0	22.53
				1	14	22.49
				8	4	21.54
				15	0	21.62
	1732.5	20175		1	0	22.50
				1	14	22.55
				8	4	21.67
				15	0	21.68
	1753.5	20385		1	0	22.49
				1	14	22.46
				8	4	21.79
				15	0	21.66
16QAM	1711.5	19965	3	1	0	21.78
				1	14	21.73
				8	4	20.54
				15	0	20.61
	1732.5	20175		1	0	21.86
				1	14	21.79
				8	4	20.75
				15	0	20.55
	1753.5	20385		1	0	21.87
				1	14	21.78
				8	4	20.81
				15	0	20.69
64QAM	1711.5	19965	3	1	0	21.70
				1	14	21.68
				8	4	20.52
				15	0	20.62
	1732.5	20175		1	0	21.61
				1	14	21.64
				8	4	20.67
				15	0	20.61
	1753.5	20385		1	0	21.61
				1	14	21.59
				8	4	20.76
				15	0	20.70

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1712.5	19975	5	1	0	22.48
				1	24	22.54
				12	6	21.60
				25	0	21.64
	1732.5	20175		1	0	22.53
				1	24	22.51
				12	6	21.68
				25	0	21.58
	1752.5	20375		1	0	22.46
				1	24	22.52
				12	6	21.80
				25	0	21.70
16QAM	1712.5	19975	5	1	0	21.83
				1	24	21.82
				12	6	20.51
				25	0	20.51
	1732.5	20175		1	0	21.85
				1	24	21.78
				12	6	20.66
				25	0	20.55
	1752.5	20375		1	0	21.75
				1	24	21.75
				12	6	20.68
				25	0	20.69
64QAM	1712.5	19975	5	1	0	21.71
				1	24	21.64
				12	6	20.43
				25	0	20.52
	1732.5	20175		1	0	21.75
				1	24	21.68
				12	6	20.66
				25	0	20.56
	1752.5	20375		1	0	21.65
				1	24	21.56
				12	6	20.77
				25	0	20.66

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1715	20000	10	1	0	22.45
				1	49	22.46
				24	12	21.47
				50	0	21.56
	1732.5	20175		1	0	22.42
				1	49	22.47
				24	12	21.81
				50	0	21.57
	1750	20350		1	0	22.51
				1	49	22.43
				24	12	21.73
				50	0	21.57
16QAM	1715	20000	10	1	0	21.83
				1	49	21.80
				24	12	20.53
				50	0	20.55
	1732.5	20175		1	0	21.81
				1	49	21.75
				24	12	20.76
				50	0	20.59
	1750	20350		1	0	21.76
				1	49	21.80
				24	12	20.68
				50	0	20.63
64QAM	1715	20000	10	1	0	21.72
				1	49	21.75
				24	12	20.45
				50	0	20.64
	1732.5	20175		1	0	21.68
				1	49	21.60
				24	12	20.71
				50	0	20.67
	1750	20350		1	0	21.63
				1	49	21.59
				24	12	20.72
				50	0	20.65

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1717.5	20025	15	1	0	22.52
				1	74	22.42
				40	18	21.53
				75	0	21.63
	1732.5	20175		1	0	22.53
				1	74	22.46
				40	18	21.70
				75	0	21.64
	1747.5	20325		1	0	22.37
				1	74	22.46
				40	18	21.83
				75	0	21.69
16QAM	1717.5	20025	15	1	0	21.88
				1	74	21.75
				40	18	20.52
				75	0	20.63
	1732.5	20175		1	0	21.74
				1	74	21.76
				40	18	20.66
				75	0	20.54
	1747.5	20325		1	0	21.74
				1	74	21.78
				40	18	20.74
				75	0	20.65
64QAM	1717.5	20025	15	1	0	21.63
				1	74	21.64
				40	18	20.52
				75	0	20.53
	1732.5	20175		1	0	21.73
				1	74	21.73
				40	18	20.65
				75	0	20.57
	1747.5	20325		1	0	21.61
				1	74	21.66
				40	18	20.78
				75	0	20.66

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1720	20050	20	1	0	22.54
				1	99	22.54
				50	25	21.60
				100	0	21.66
	1732.5	20175		1	0	22.55
				1	99	22.55
				50	25	21.82
				100	0	21.69
	1745	20300		1	0	22.52
				1	99	22.52
				50	25	21.88
				100	0	21.71
16QAM	1720	20050	20	1	0	21.88
				1	99	21.88
				50	25	20.57
				100	0	20.66
	1732.5	20175		1	0	21.88
				1	99	21.88
				50	25	20.81
				100	0	20.69
	1745	20300		1	0	21.89
				1	99	21.89
				50	25	20.81
				100	0	20.70
64QAM	1720	20050	20	1	0	21.76
				1	99	21.76
				50	25	20.57
				100	0	20.66
	1732.5	20175		1	0	21.75
				1	99	21.75
				50	25	20.79
				100	0	20.70
	1745	20300		1	0	21.70
				1	99	21.70
				50	25	20.80
				100	0	20.71

1 RF Power Output down Antenna

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1710.7	19957	1.4	1	0	22.84
				1	5	22.80
				3	2	21.99
				6	0	21.95
	1732.5	20175		1	0	22.80
				1	5	22.85
				3	2	22.16
				6	0	22.02
	1754.3	20393		1	0	22.85
				1	5	22.90
				3	2	22.10
				6	0	22.08
16QAM	1710.7	19957	1.4	1	0	22.16
				1	5	22.09
				3	2	20.95
				6	0	20.99
	1732.5	20175		1	0	22.22
				1	5	22.20
				3	2	21.12
				6	0	21.03
	1754.3	20393		1	0	22.16
				1	5	22.23
				3	2	21.03
				6	0	21.03
64QAM	1710.7	19957	1.4	1	0	22.07
				1	5	22.05
				3	2	20.86
				6	0	20.96
	1732.5	20175		1	0	22.09
				1	5	22.01
				3	2	21.09
				6	0	21.06
	1754.3	20393		1	0	22.09
				1	5	21.96
				3	2	21.03
				6	0	21.06

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1711.5	19965	3	1	0	22.88
				1	14	22.82
				8	4	21.90
				15	0	22.02
	1732.5	20175		1	0	22.79
				1	14	22.88
				8	4	22.09
				15	0	21.98
	1753.5	20385		1	0	22.76
				1	14	22.86
				8	4	22.18
				15	0	22.00
16QAM	1711.5	19965	3	1	0	22.20
				1	14	22.23
				8	4	20.91
				15	0	20.99
	1732.5	20175		1	0	22.21
				1	14	22.19
				8	4	21.19
				15	0	21.11
	1753.5	20385		1	0	22.15
				1	14	22.18
				8	4	21.10
				15	0	21.10
64QAM	1711.5	19965	3	1	0	22.06
				1	14	22.07
				8	4	20.97
				15	0	20.99
	1732.5	20175		1	0	22.01
				1	14	21.96
				8	4	21.16
				15	0	21.08
	1753.5	20385		1	0	22.01
				1	14	22.11
				8	4	21.04
				15	0	21.06

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1712.5	19975	5	1	0	22.86
				1	24	22.86
				12	6	22.00
				25	0	21.92
	1732.5	20175		1	0	22.82
				1	24	22.87
				12	6	22.15
				25	0	22.00
	1752.5	20375		1	0	22.90
				1	24	22.82
				12	6	22.05
				25	0	21.97
16QAM	1712.5	19975	5	1	0	22.16
				1	24	22.22
				12	6	20.85
				25	0	20.97
	1732.5	20175		1	0	22.18
				1	24	22.14
				12	6	21.19
				25	0	21.12
	1752.5	20375		1	0	22.09
				1	24	22.19
				12	6	21.11
				25	0	21.00
64QAM	1712.5	19975	5	1	0	21.98
				1	24	21.98
				12	6	20.90
				25	0	21.00
	1732.5	20175		1	0	21.98
				1	24	21.98
				12	6	21.05
				25	0	21.09
	1752.5	20375		1	0	22.05
				1	24	22.07
				12	6	21.14
				25	0	20.98

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1715	20000	10	1	0	22.84
				1	49	22.90
				24	12	21.89
				50	0	21.89
	1732.5	20175		1	0	22.88
				1	49	22.90
				24	12	22.16
				50	0	22.10
	1750	20350		1	0	22.86
				1	49	22.81
				24	12	22.14
				50	0	22.09
16QAM	1715	20000	10	1	0	22.16
				1	49	22.20
				24	12	20.88
				50	0	20.89
	1732.5	20175		1	0	22.12
				1	49	22.15
				24	12	21.07
				50	0	21.04
	1750	20350		1	0	22.18
				1	49	22.17
				24	12	21.08
				50	0	21.09
64QAM	1715	20000	10	1	0	21.99
				1	49	22.02
				24	12	20.95
				50	0	20.91
	1732.5	20175		1	0	22.04
				1	49	21.96
				24	12	21.03
				50	0	21.06
	1750	20350		1	0	22.10
				1	49	22.08
				24	12	21.07
				50	0	21.00

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1717.5	20025	15	1	0	22.87
				1	74	22.77
				40	18	21.88
				75	0	21.98
	1732.5	20175		1	0	22.84
				1	74	22.79
				40	18	22.11
				75	0	22.09
	1747.5	20325		1	0	22.89
				1	74	22.87
				40	18	22.08
				75	0	22.07
16QAM	1717.5	20025	15	1	0	22.11
				1	74	22.21
				40	18	20.93
				75	0	20.89
	1732.5	20175		1	0	22.10
				1	74	22.24
				40	18	21.17
				75	0	21.09
	1747.5	20325		1	0	22.23
				1	74	22.13
				40	18	21.15
				75	0	20.99
64QAM	1717.5	20025	15	1	0	21.99
				1	74	22.09
				40	18	20.89
				75	0	20.91
	1732.5	20175		1	0	21.97
				1	74	22.04
				40	18	21.04
				75	0	21.09
	1747.5	20325		1	0	22.09
				1	74	22.04
				40	18	21.09
				75	0	21.10

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	1720	20050	20	1	0	22.92
				1	99	22.92
				50	25	22.01
				100	0	22.02
	1732.5	20175		1	0	22.91
				1	99	22.91
				50	25	22.21
				100	0	22.12
	1745	20300		1	0	22.90
				1	99	22.90
				50	25	22.19
				100	0	22.11
16QAM	1720	20050	20	1	0	22.24
				1	99	22.24
				50	25	20.99
				100	0	21.02
	1732.5	20175		1	0	22.24
				1	99	22.24
				50	25	21.20
				100	0	21.12
	1745	20300		1	0	22.24
				1	99	22.24
				50	25	21.17
				100	0	21.12
64QAM	1720	20050	20	1	0	22.11
				1	99	22.11
				50	25	20.97
				100	0	21.02
	1732.5	20175		1	0	22.11
				1	99	22.11
				50	25	21.17
				100	0	21.10
	1745	20300		1	0	22.11
				1	99	22.11
				50	25	21.17
				100	0	21.11

2 Occupied Bandwidth

Test result

Band	Carrier frequency (MHz)	Channel	BW (MHz)	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
4	1710.7	19957	1.4	6	0	1.0818	Fig.1	1.0817	Fig.2	1.0811	Fig.3
	1732.5	20175		6	0	1.0775	Fig.4	1.0812	Fig.5	1.0798	Fig.6
	1754.3	20393		6	0	1.0802	Fig.7	1.0807	Fig.8	1.0778	Fig.9
	1711.5	19965	3	15	0	2.6823	Fig.10	2.6852	Fig.11	2.6827	Fig.12
	1732.5	20175		15	0	2.6834	Fig.13	2.6800	Fig.14	2.6840	Fig.15
	1753.5	20385		15	0	2.6818	Fig.16	2.6870	Fig.17	2.6885	Fig.18
	1712.5	19975	5	25	0	4.4873	Fig.19	4.4804	Fig.20	4.4887	Fig.21
	1732.5	20175		25	0	4.4841	Fig.22	4.4808	Fig.23	4.4878	Fig.24
	1752.5	20375		25	0	4.4873	Fig.25	4.4849	Fig.26	4.4870	Fig.27
	1715	20000	10	50	0	8.9760	Fig.28	8.9302	Fig.29	8.9522	Fig.30
	1732.5	20175		50	0	8.9480	Fig.31	8.9658	Fig.32	8.9528	Fig.33
	1750	20350		50	0	8.9499	Fig.34	8.9674	Fig.35	8.9720	Fig.36
	1717.5	20025	15	75	0	13.428	Fig.37	13.424	Fig.38	13.410	Fig.39
	1732.5	20175		75	0	13.416	Fig.40	13.432	Fig.41	13.409	Fig.42
	1747.5	20325		75	0	13.439	Fig.43	13.411	Fig.44	13.421	Fig.45
	1720	20050	20	100	0	17.867	Fig.46	17.858	Fig.47	17.877	Fig.48
	1732.5	20175		100	0	17.899	Fig.49	17.889	Fig.50	17.869	Fig.51
	1745	20300		100	0	17.910	Fig.52	17.902	Fig.53	17.899	Fig.54

Band	Carrier frequency (MHz)	Channel	BW (MHz)	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
4	1710.7	19957	1.4	6	0	1.237	Fig.1	1.236	Fig.2	1.229	Fig.3
	1732.5	20175		6	0	1.232	Fig.4	1.241	Fig.5	1.226	Fig.6
	1754.3	20393		6	0	1.215	Fig.7	1.235	Fig.8	1.230	Fig.9
	1711.5	19965	3	15	0	2.886	Fig.10	2.860	Fig.11	2.873	Fig.12
	1732.5	20175		15	0	2.889	Fig.13	2.876	Fig.14	2.871	Fig.15
	1753.5	20385		15	0	2.878	Fig.16	2.890	Fig.17	2.864	Fig.18
	1712.5	19975	5	25	0	5.000	Fig.19	5.081	Fig.20	5.093	Fig.21
	1732.5	20175		25	0	5.046	Fig.22	5.074	Fig.23	5.027	Fig.24
	1752.5	20375		25	0	5.057	Fig.25	5.024	Fig.26	5.080	Fig.27
	1715	20000	10	50	0	9.871	Fig.28	9.775	Fig.29	9.834	Fig.30
	1732.5	20175		50	0	9.868	Fig.31	9.874	Fig.32	9.926	Fig.33
	1750	20350		50	0	9.873	Fig.34	9.783	Fig.35	9.833	Fig.36
	1717.5	20025	15	75	0	14.43	Fig.37	14.54	Fig.38	14.61	Fig.39
	1732.5	20175		75	0	14.72	Fig.40	14.58	Fig.41	14.74	Fig.42
	1747.5	20325		75	0	14.66	Fig.43	14.77	Fig.44	14.48	Fig.45
	1720	20050	20	100	0	19.19	Fig.46	19.12	Fig.47	19.16	Fig.48
	1732.5	20175		100	0	19.15	Fig.49	19.32	Fig.50	19.22	Fig.51
	1745	20300		100	0	19.50	Fig.52	19.29	Fig.53	19.35	Fig.54

Fig.1

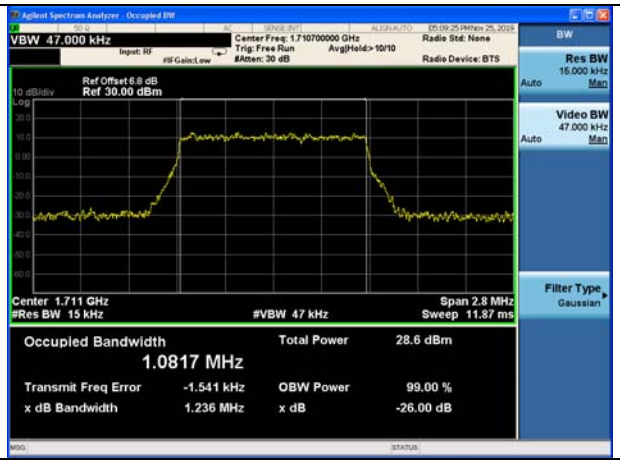


Fig.2

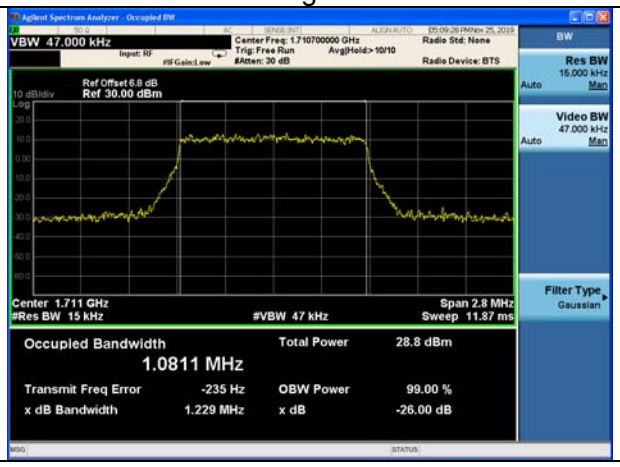


Fig.3

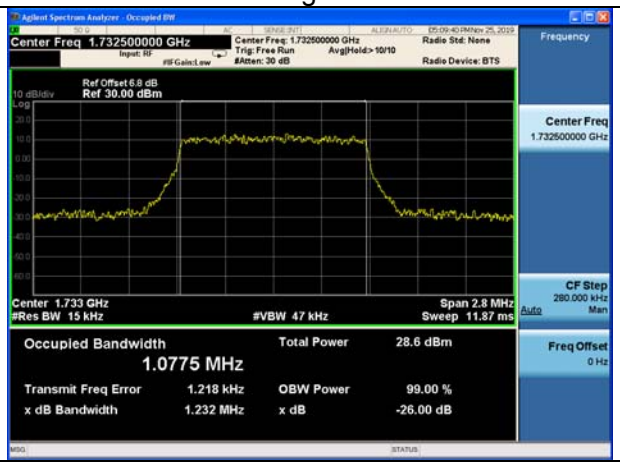


Fig.4

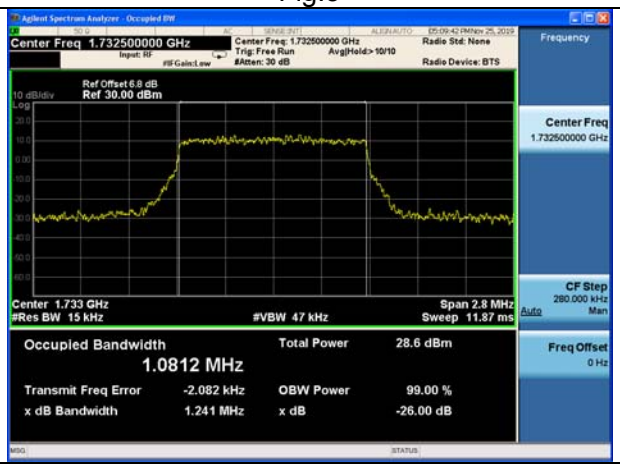


Fig.5

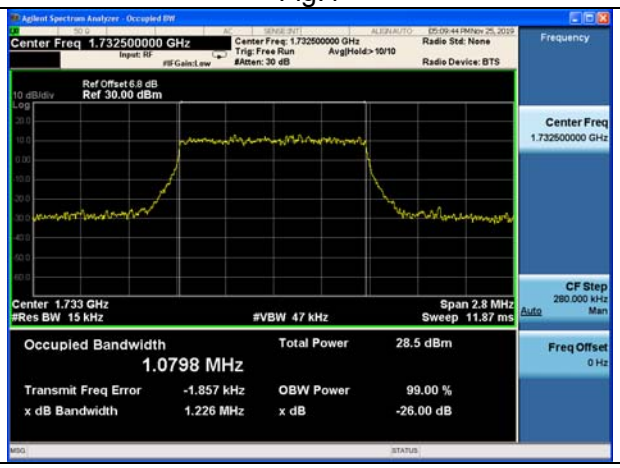


Fig.6

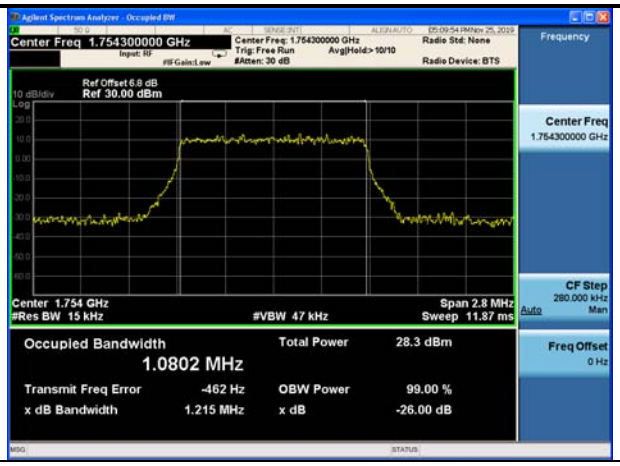


Fig.7

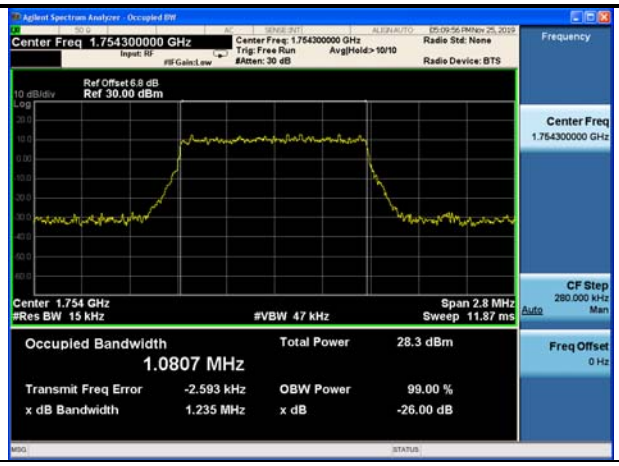


Fig.8

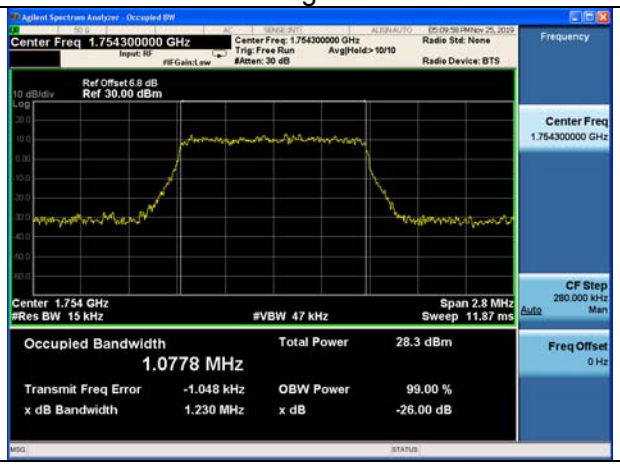


Fig.9

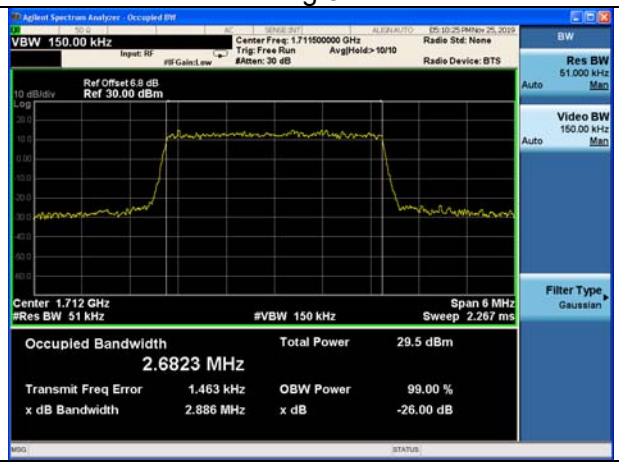


Fig.10

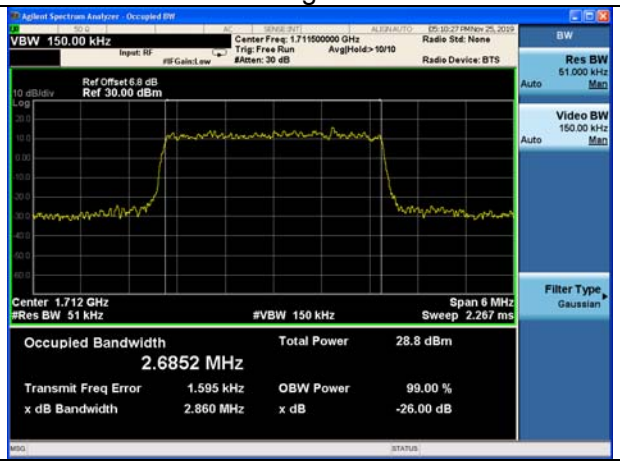


Fig.11

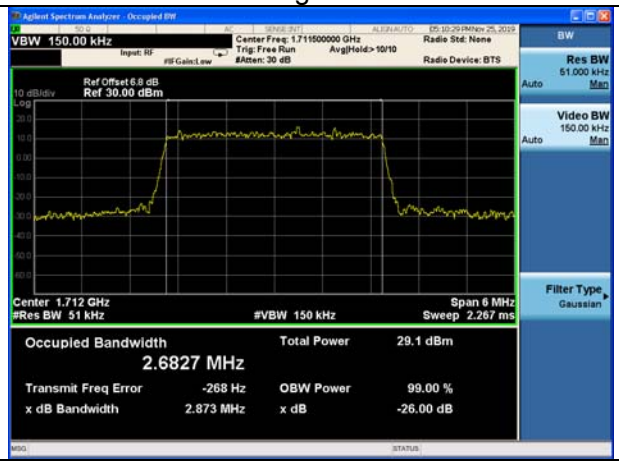


Fig.12

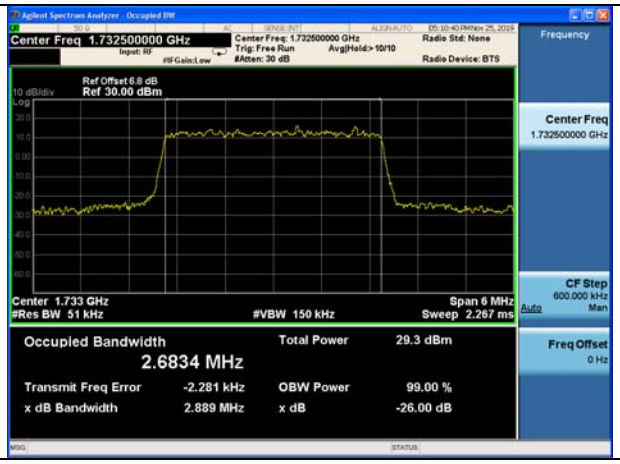


Fig.13

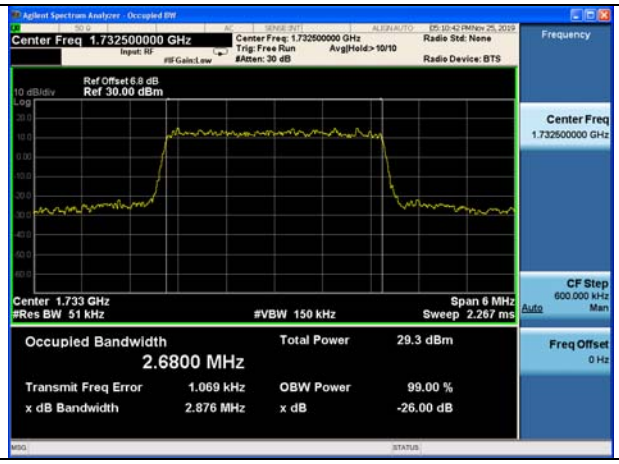


Fig.14

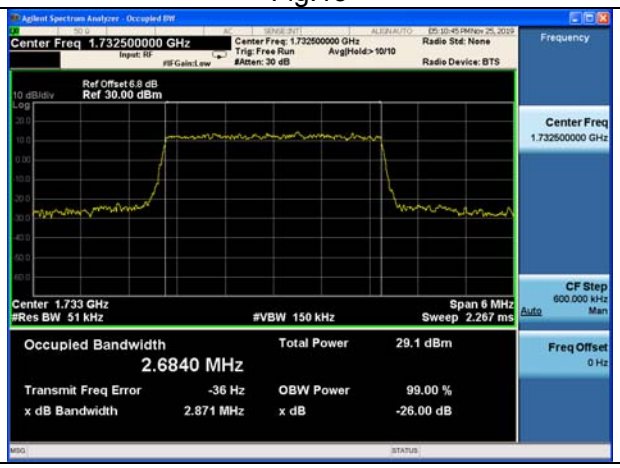


Fig.15

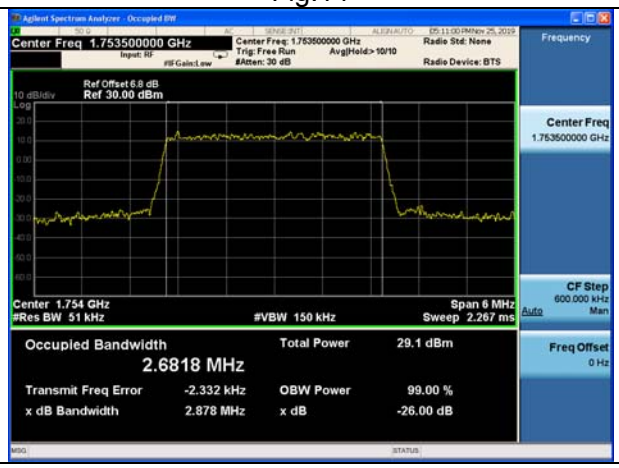


Fig.16

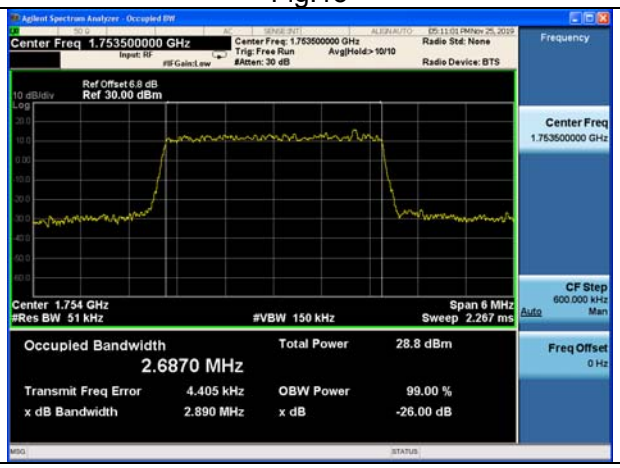


Fig.17

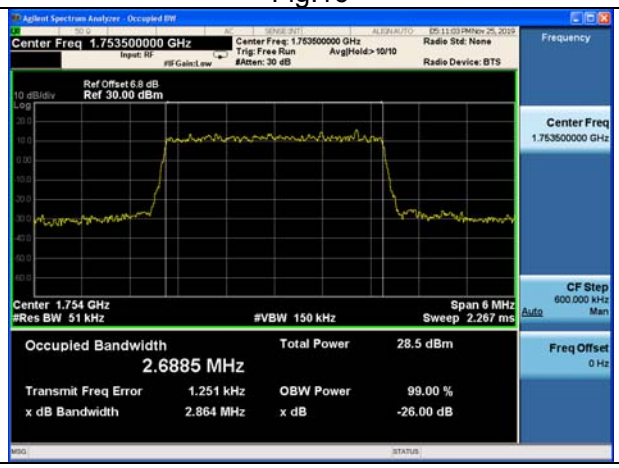


Fig.18

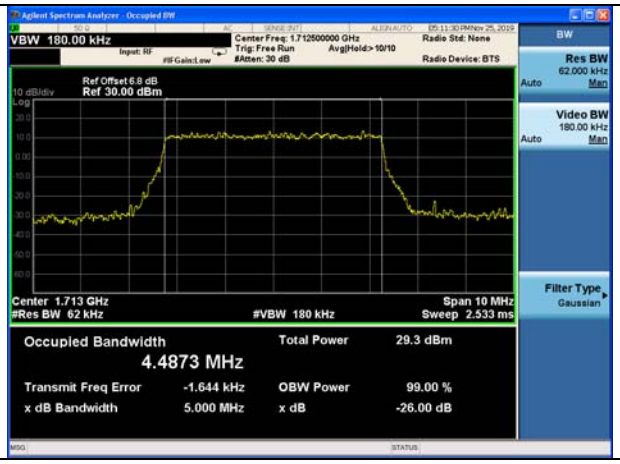


Fig.19

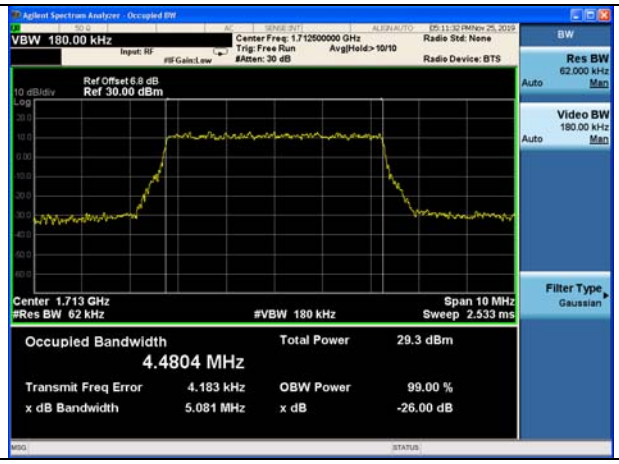


Fig.20

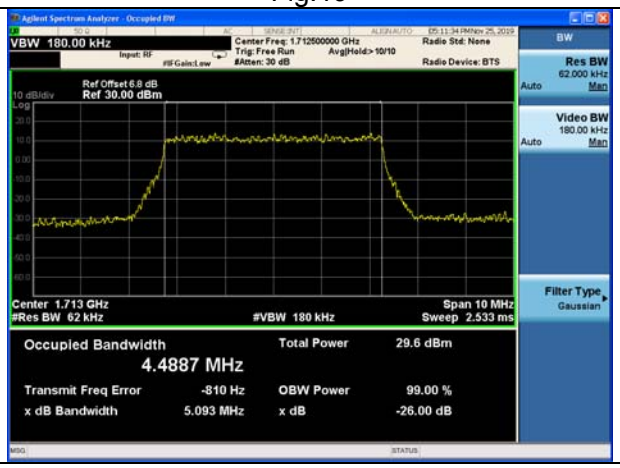


Fig.21

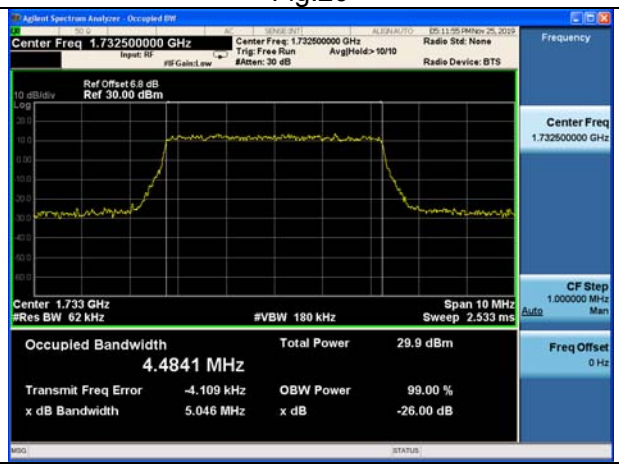


Fig.22

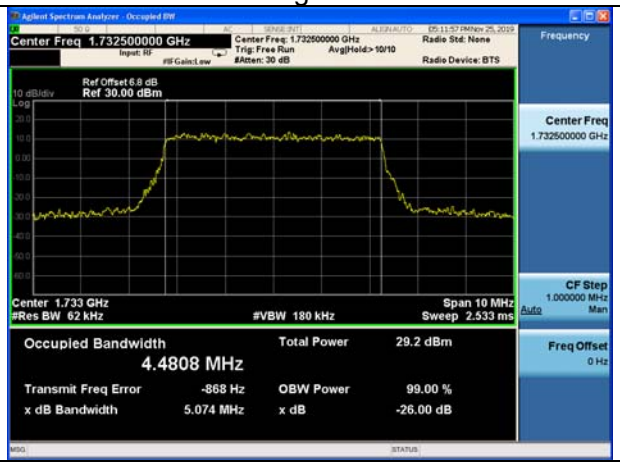


Fig.23

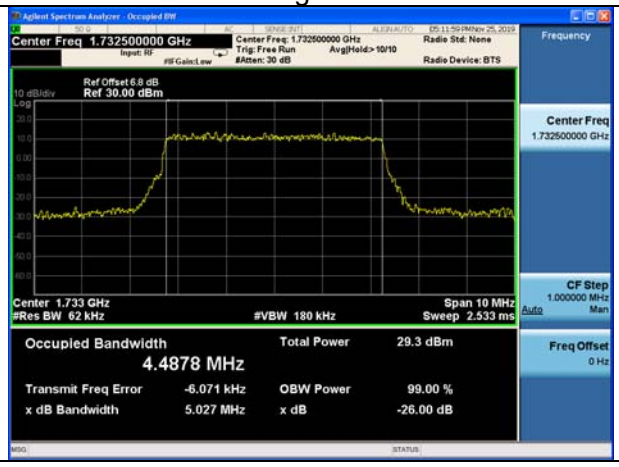


Fig.24

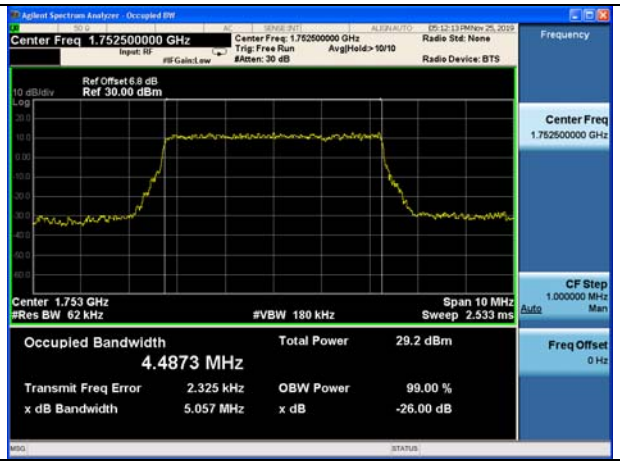


Fig.25

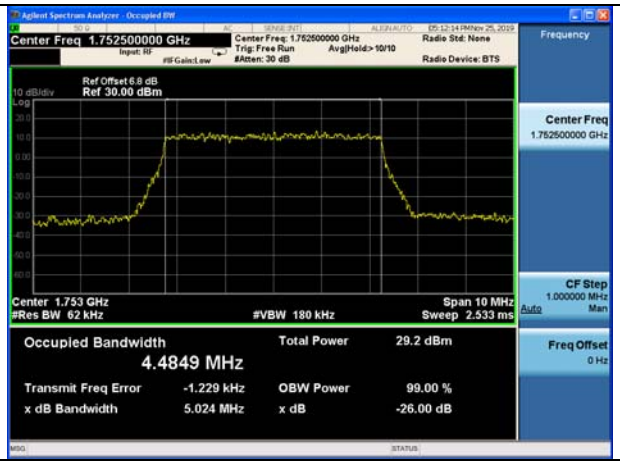


Fig.26

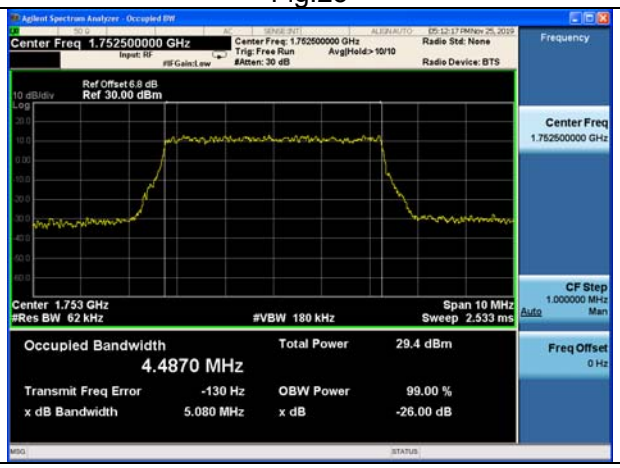


Fig.27

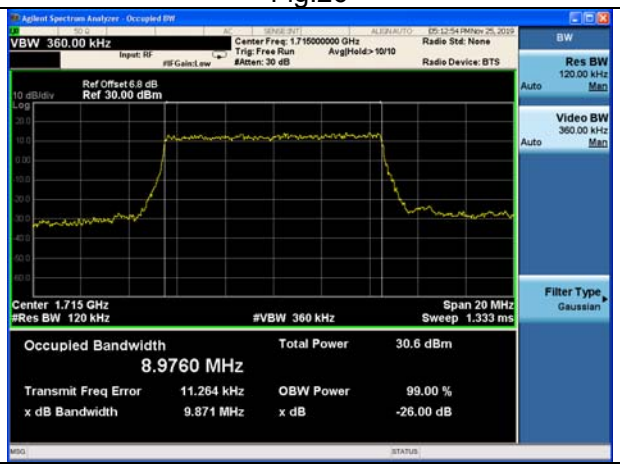


Fig.28

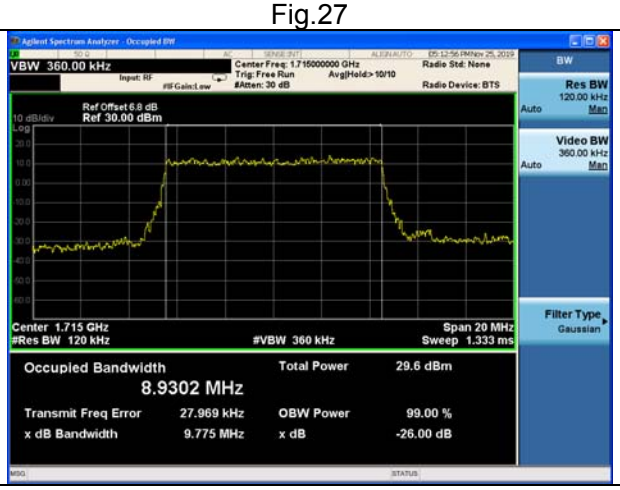


Fig.29

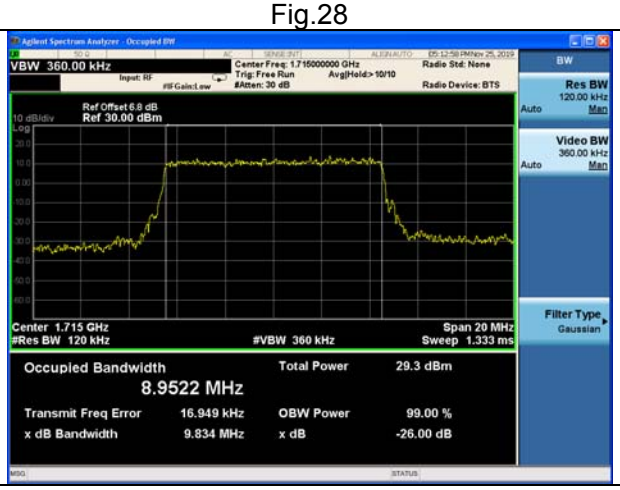


Fig.30

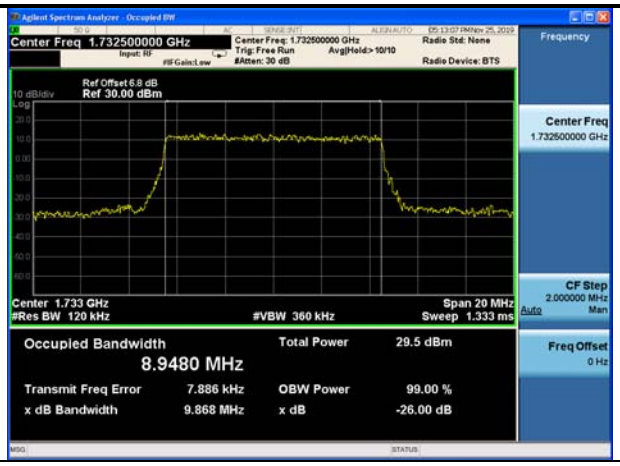


Fig.31

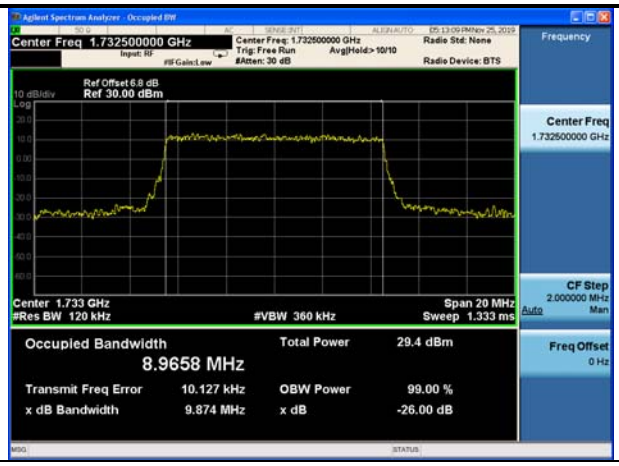


Fig.32

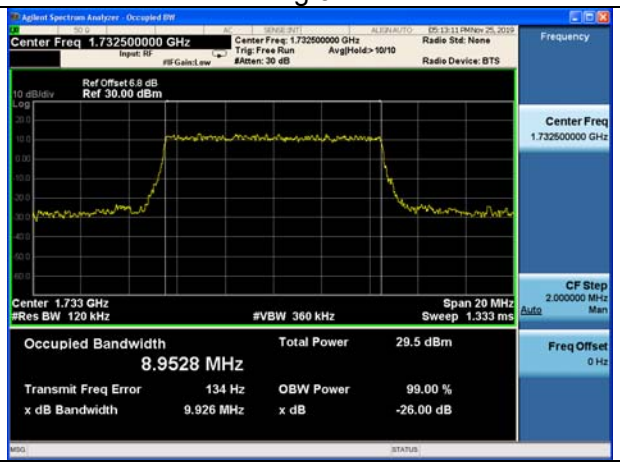


Fig.33

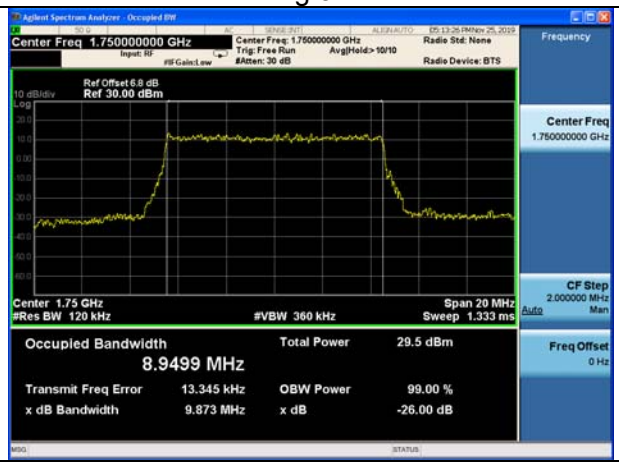


Fig.34

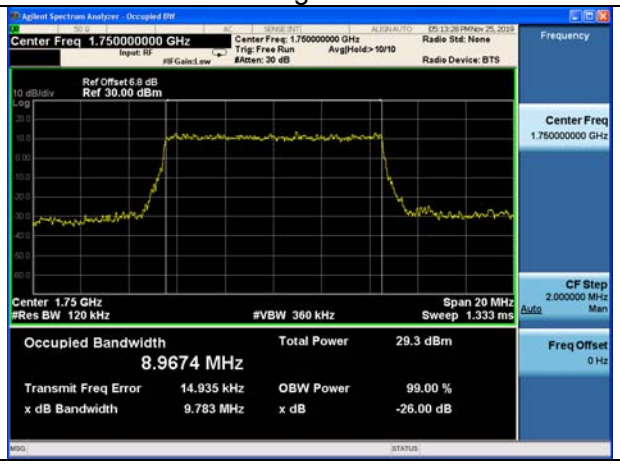


Fig.35

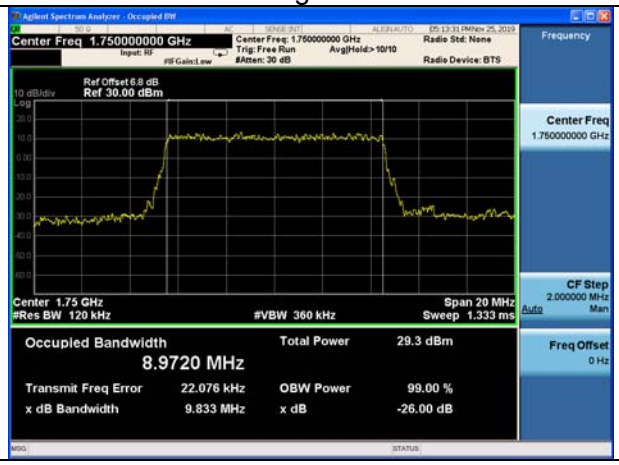


Fig.36