

Fig.5

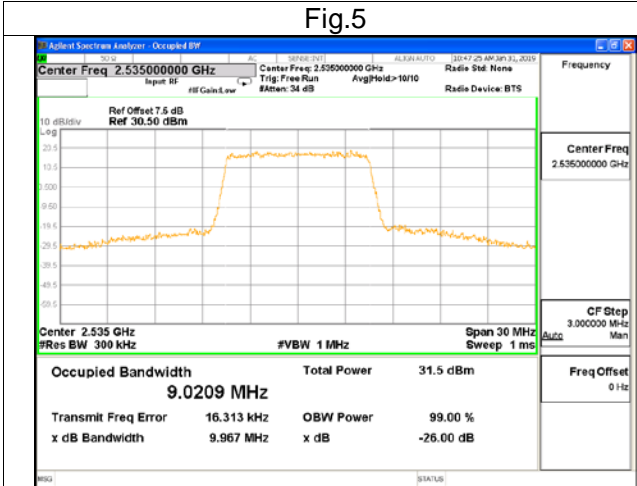


Fig.6

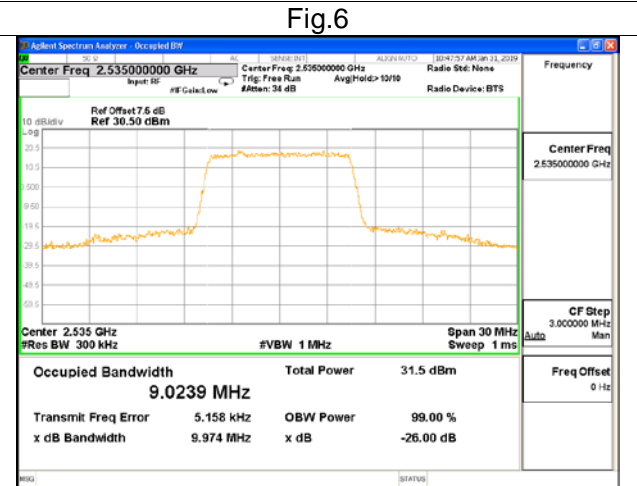


Fig.7

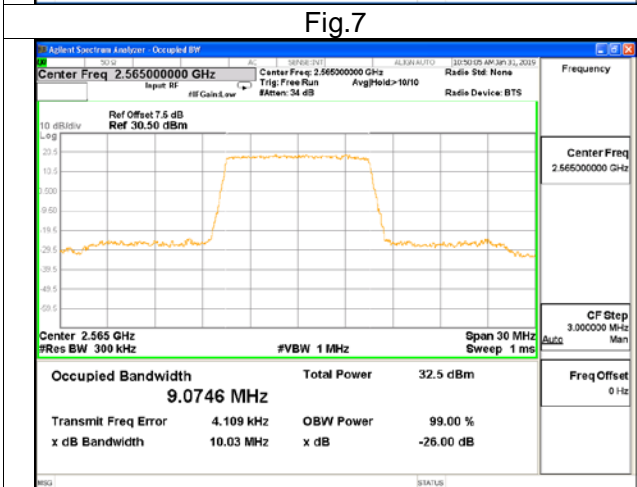


Fig.8

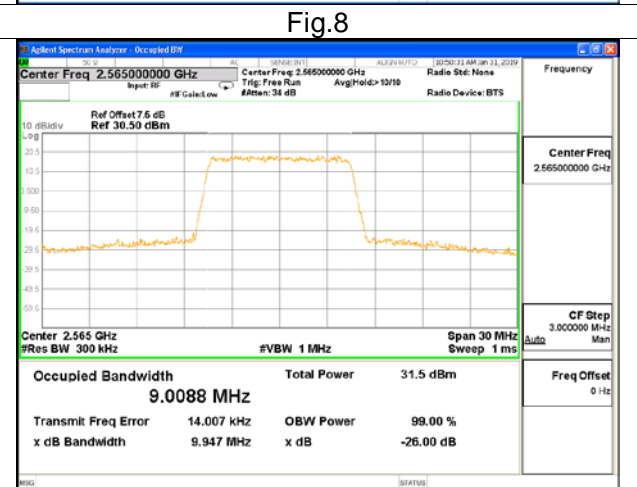
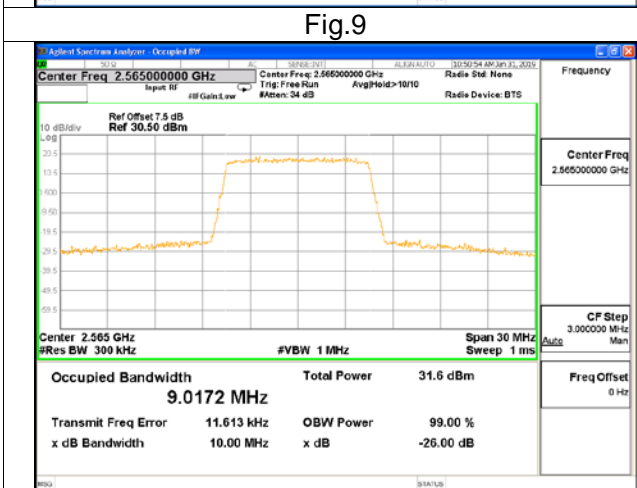


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
7	2507.5	20825	15	75	0	13.444	Fig.1	13.454	Fig.2	13.450	Fig.3
7	2535	21100	15	75	0	13.457	Fig.4	13.469	Fig.5	13.469	Fig.6
7	2562.5	21375	15	75	0	13.475	Fig.7	13.464	Fig.8	13.465	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
7	2507.5	20825	15	75	0	14.72	Fig.1	14.63	Fig.2	14.56	Fig.3
7	2535	21100	15	75	0	14.73	Fig.4	14.66	Fig.5	14.66	Fig.6
7	2562.5	21375	15	75	0	14.76	Fig.7	14.71	Fig.8	14.71	Fig.9

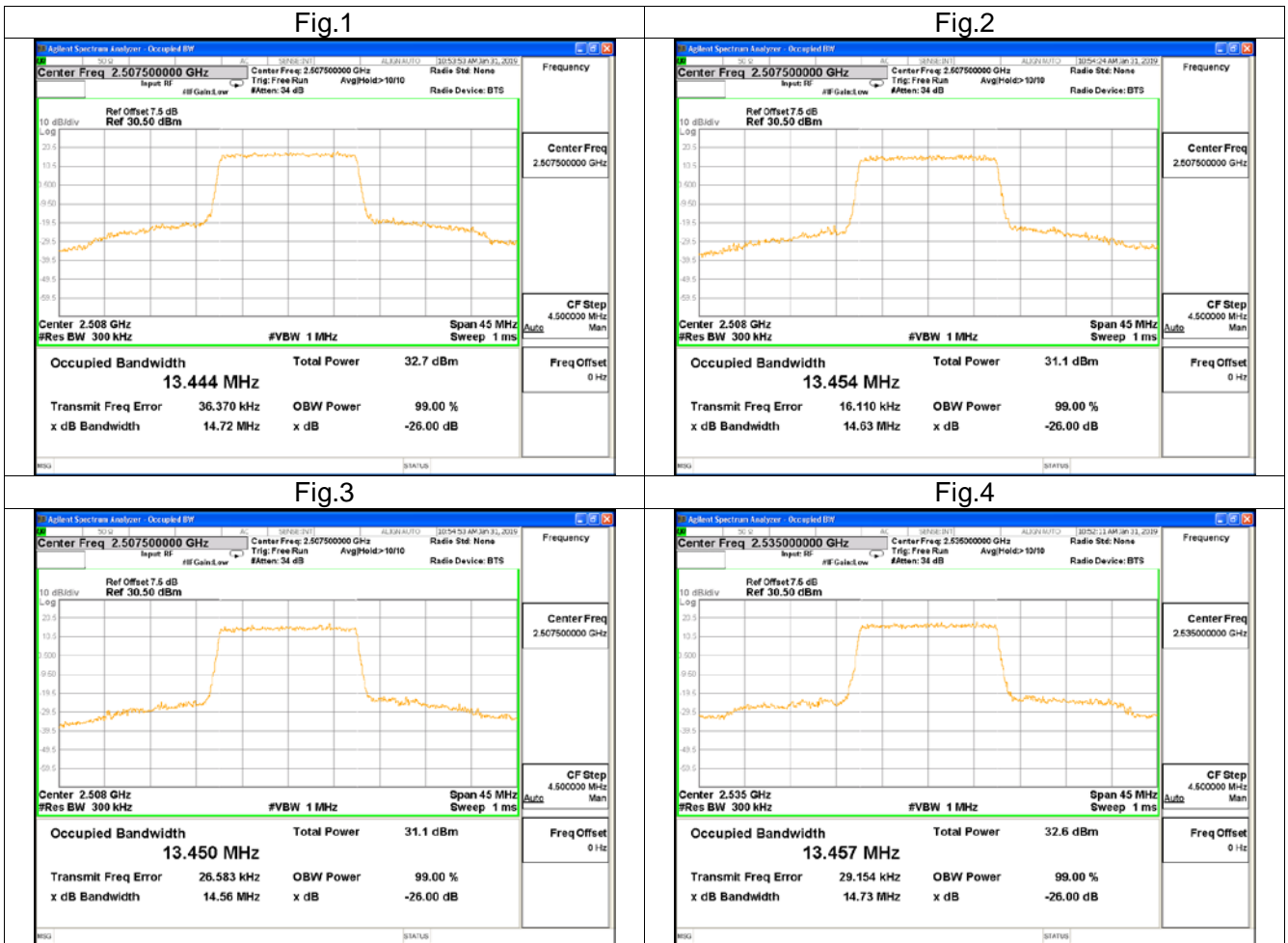


Fig.5

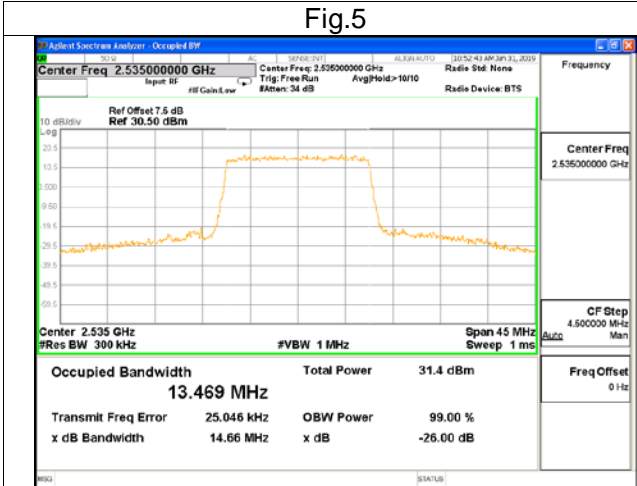


Fig.6

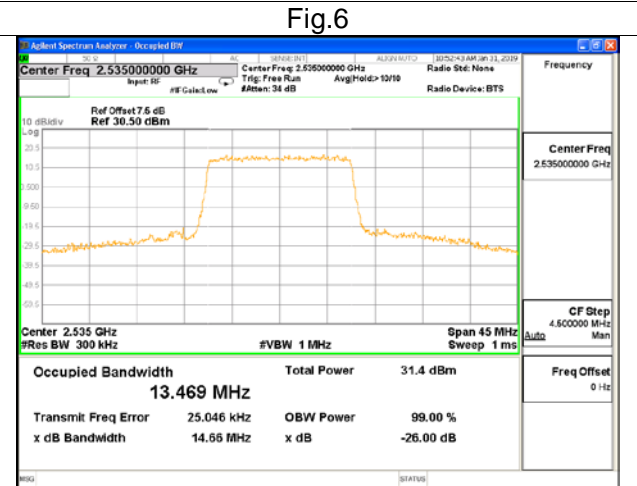


Fig.7

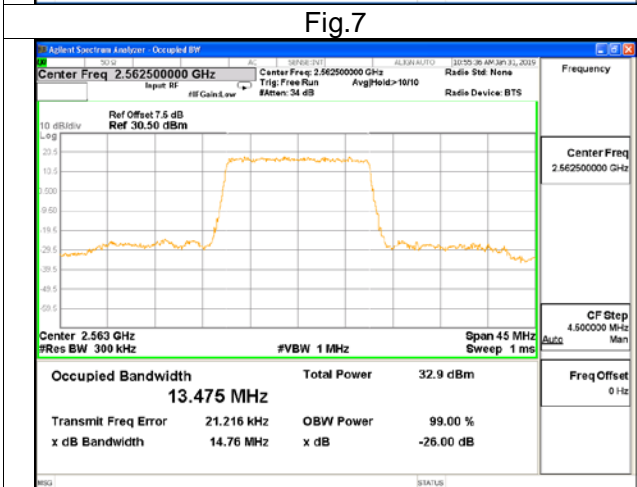


Fig.8

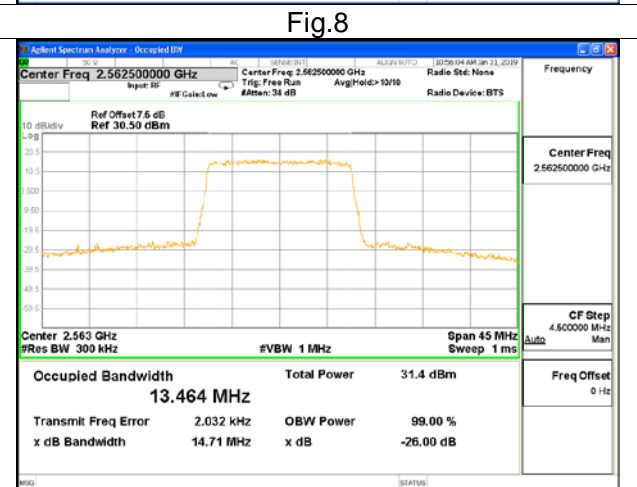
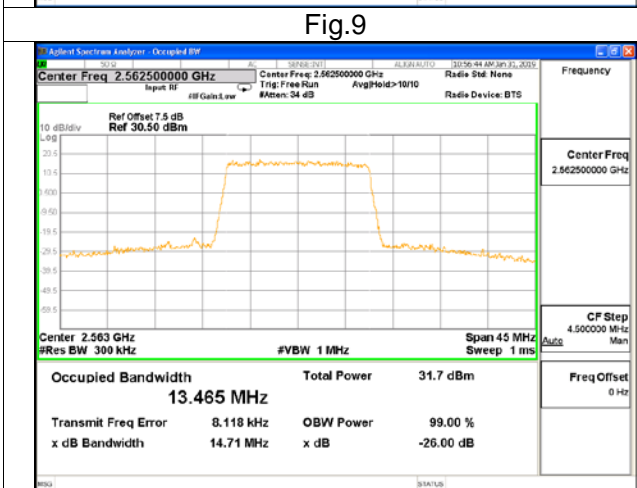


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
7	2510	20850	20	100	0	17.851	Fig.1	17.890	Fig.2	17.873	Fig.3
7	2535	21100	20	100	0	17.902	Fig.4	17.914	Fig.5	17.887	Fig.6
7	2560	21350	20	100	0	17.887	Fig.7	17.896	Fig.8	17.849	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
7	2510	20850	20	100	0	19.27	Fig.1	19.28	Fig.2	19.34	Fig.3
7	2535	21100	20	100	0	19.34	Fig.4	19.37	Fig.5	19.23	Fig.6
7	2560	21350	20	100	0	19.37	Fig.7	19.25	Fig.8	19.30	Fig.9

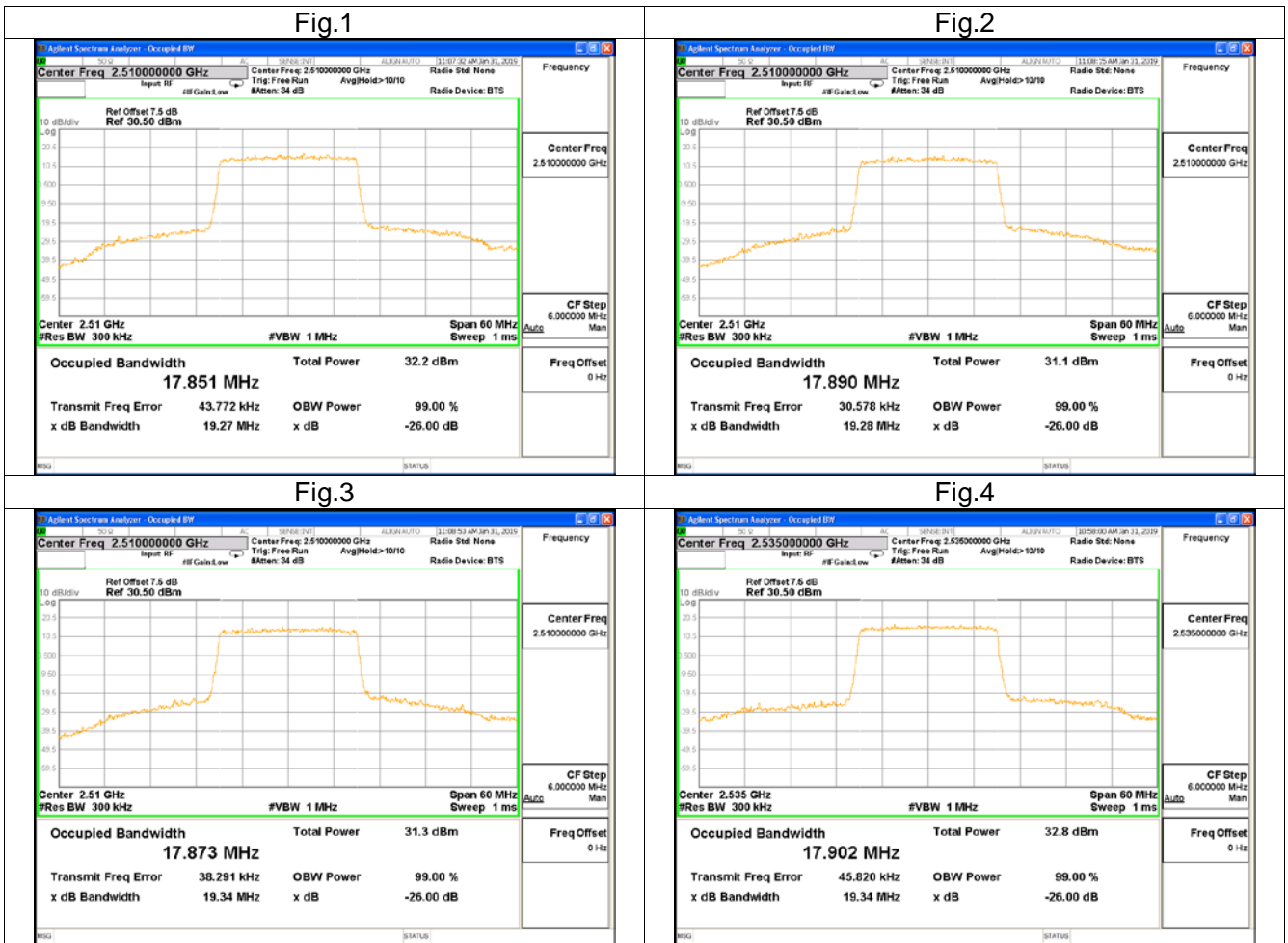


Fig.5

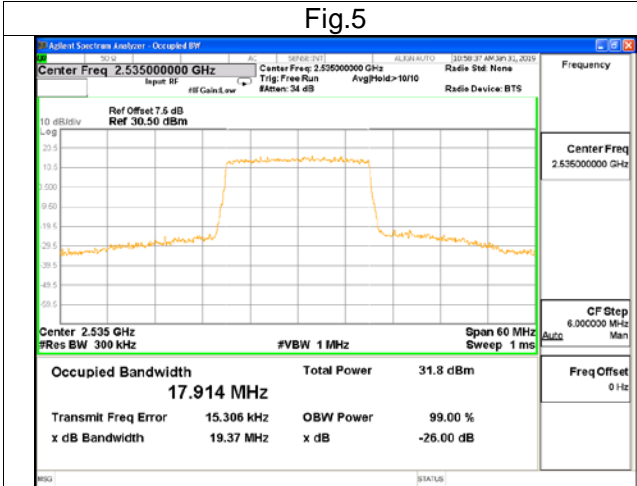


Fig.6

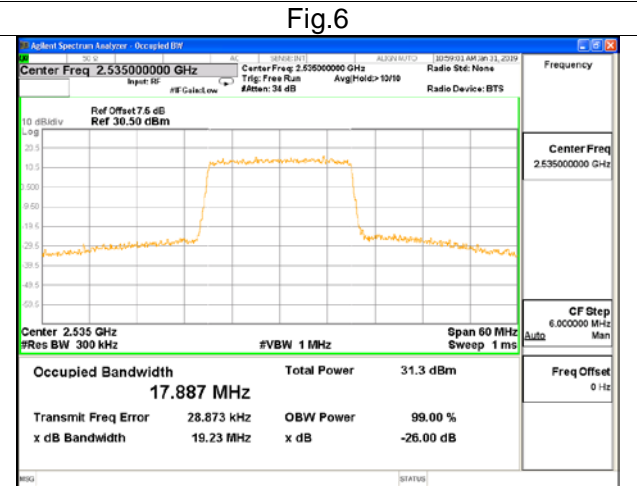


Fig.7

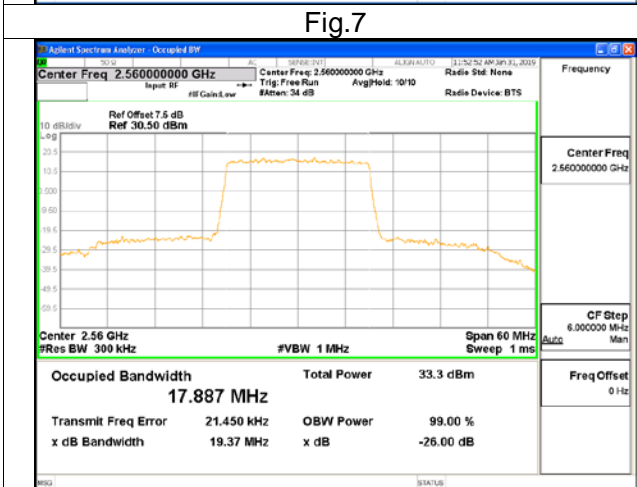


Fig.8

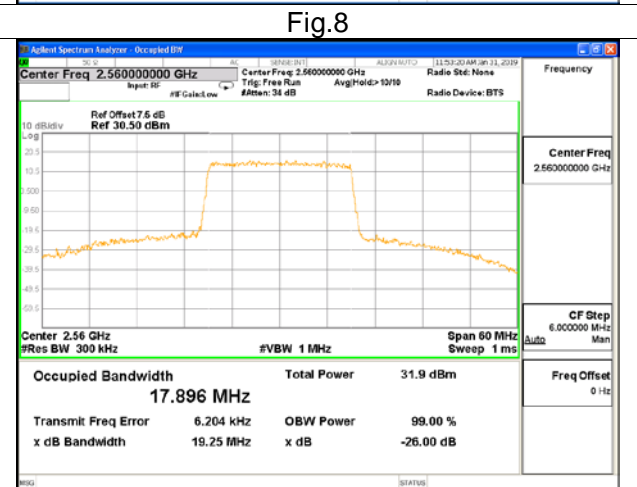
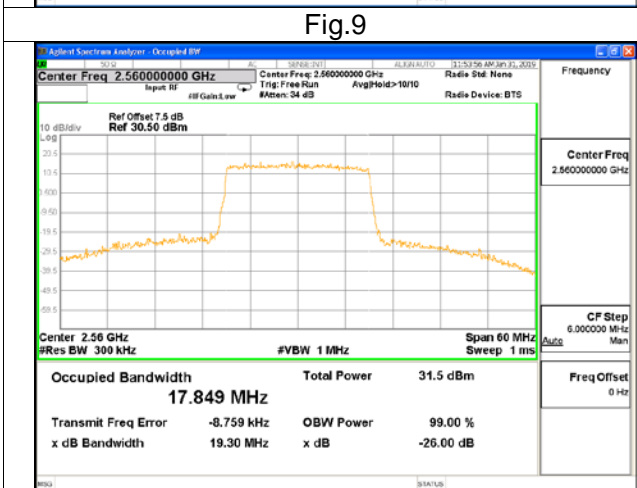
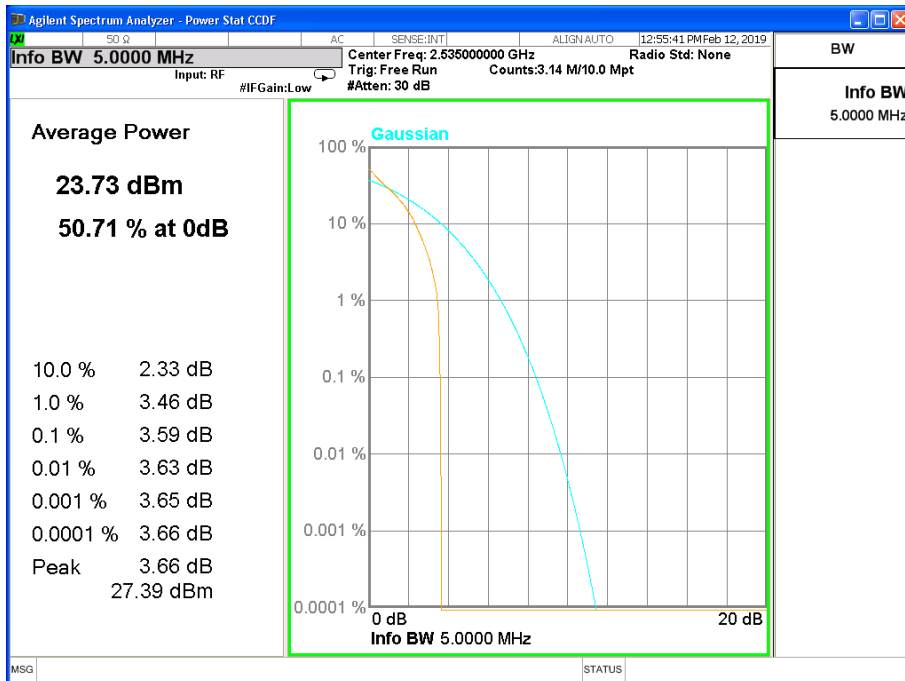


Fig.9

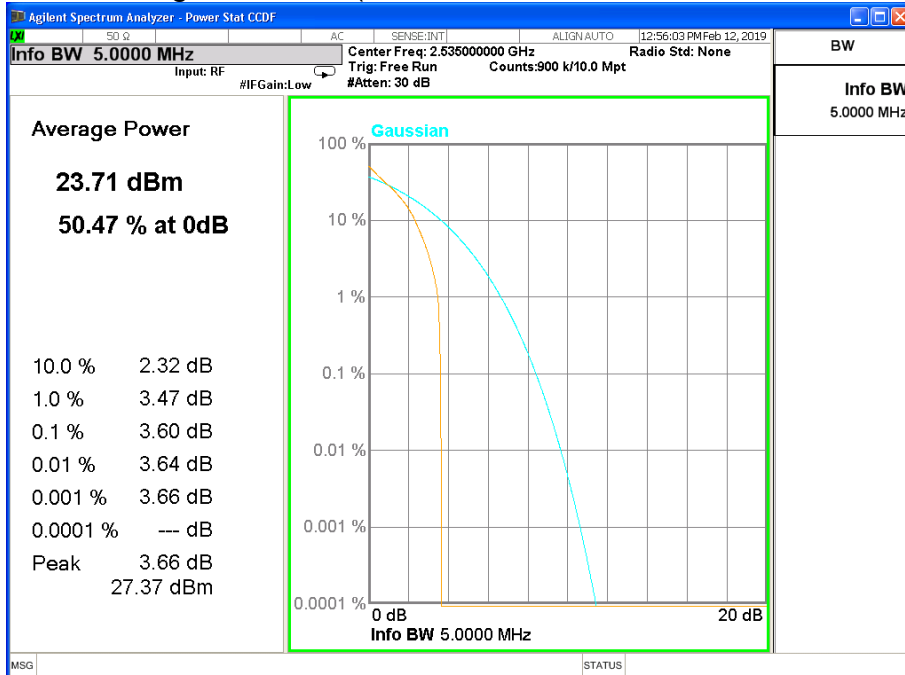


### 3 Peak-Average Ratio

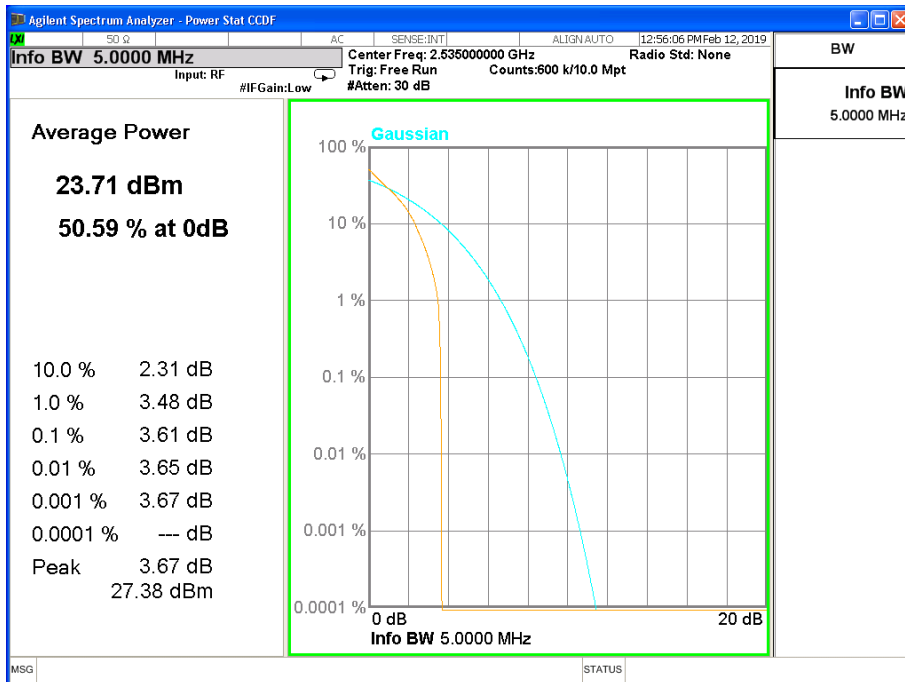
Test result:



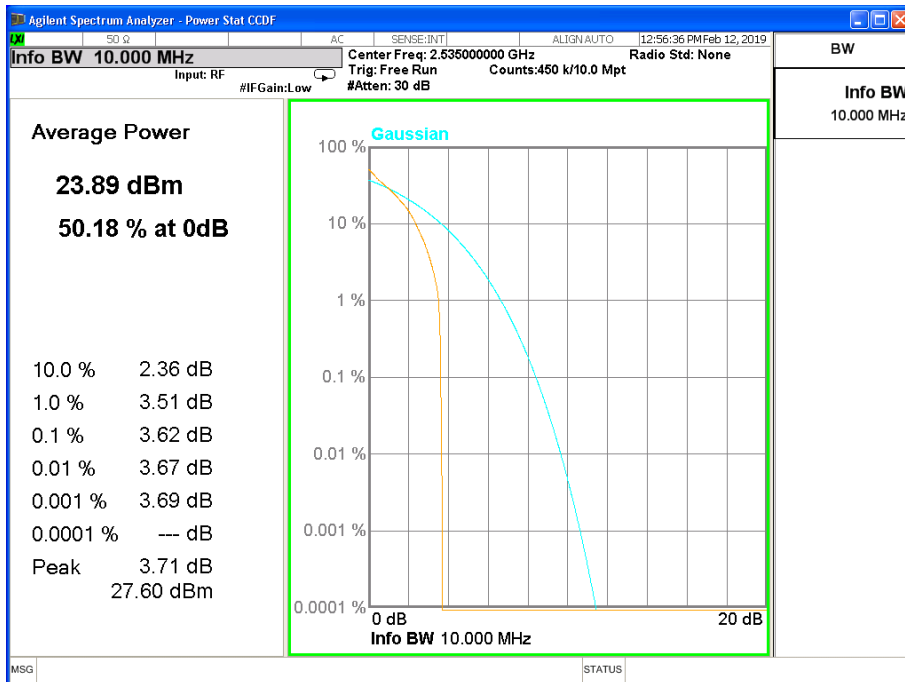
Peak-Average Ratio Plot(5MHz BW,QPSK,Band 7-mid Channel)



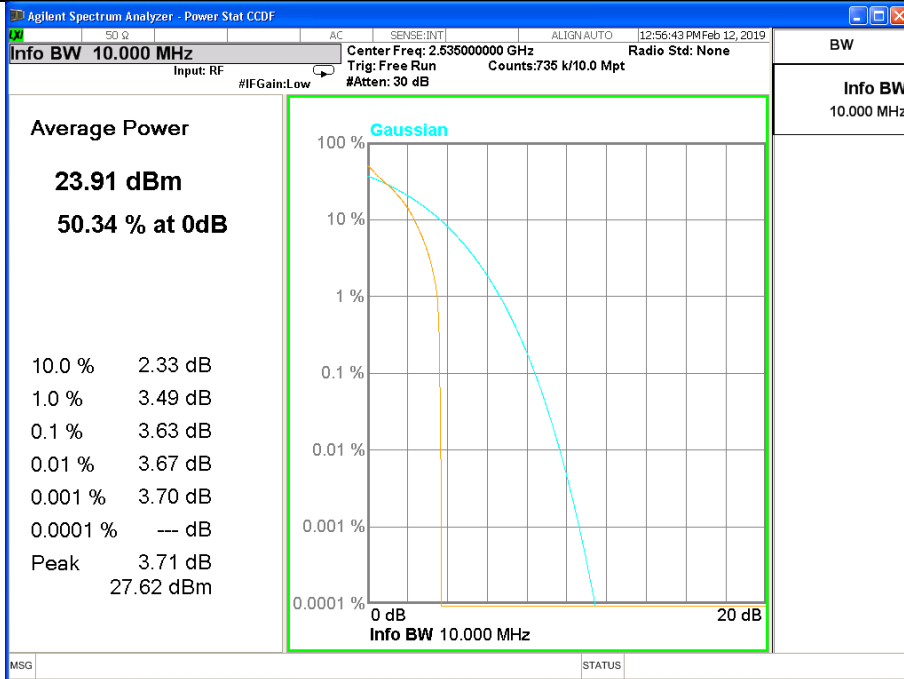
Peak-Average Ratio Plot(5MHz BW,16QAM,Band 7-mid Channel)



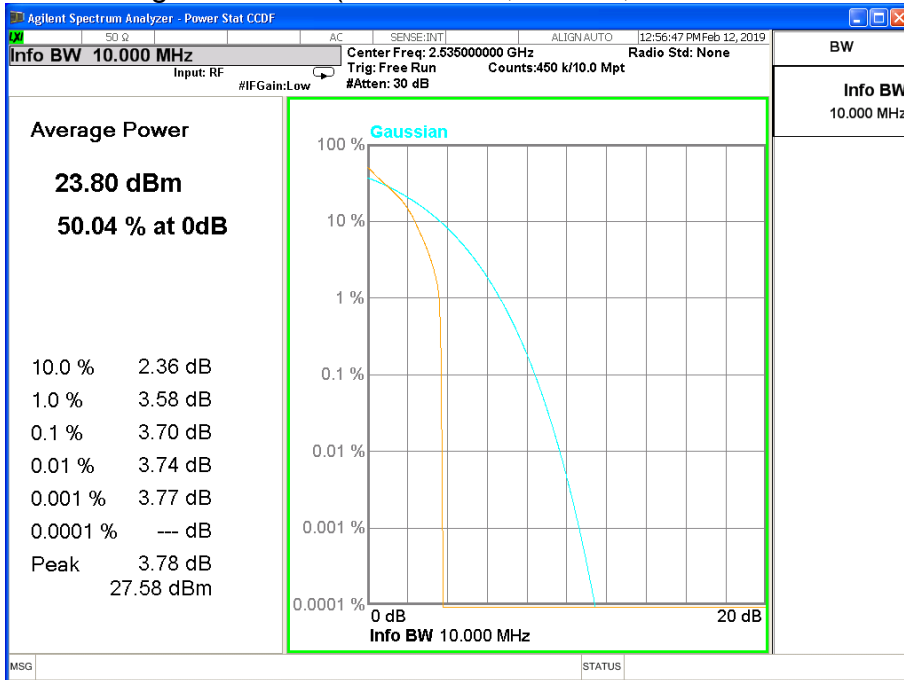
Peak-Average Ratio Plot(5MHz BW,64QAM,Band 7-mid Channel)



Peak-Average Ratio Plot(10MHz BW,QPSK,Band 7-mid Channel)

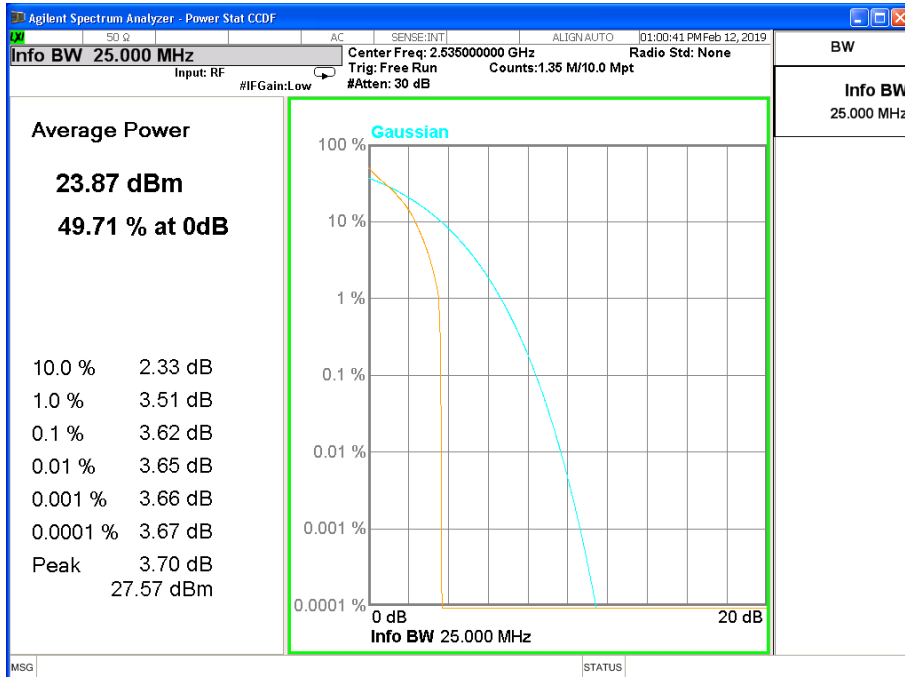


Peak-Average Ratio Plot(10MHz BW,16QAM,Band 7-mid Channel)

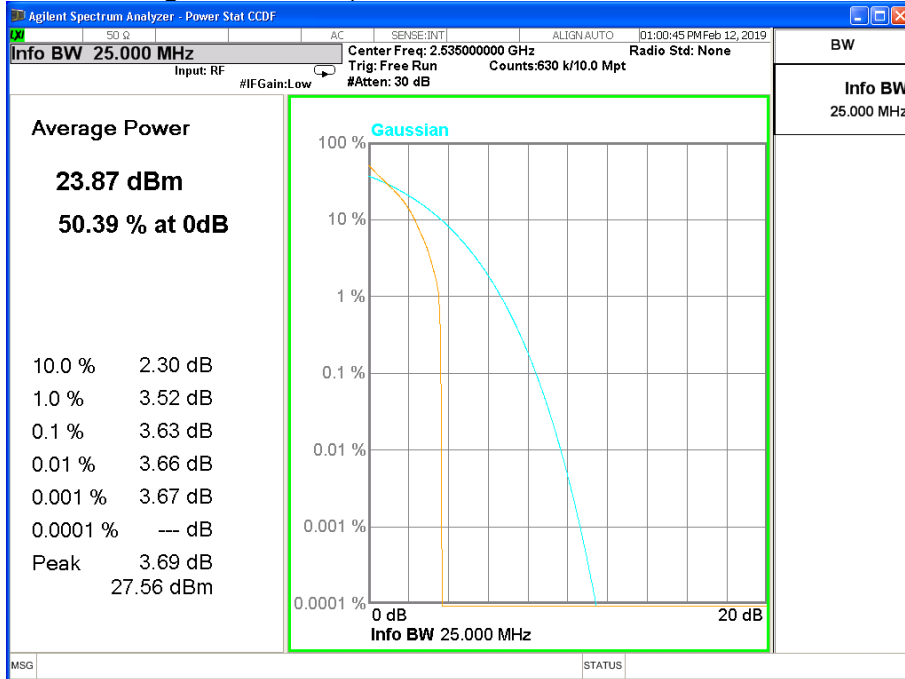


Peak-Average Ratio Plot(10MHz BW,64QAM,Band 7-mid Channel)

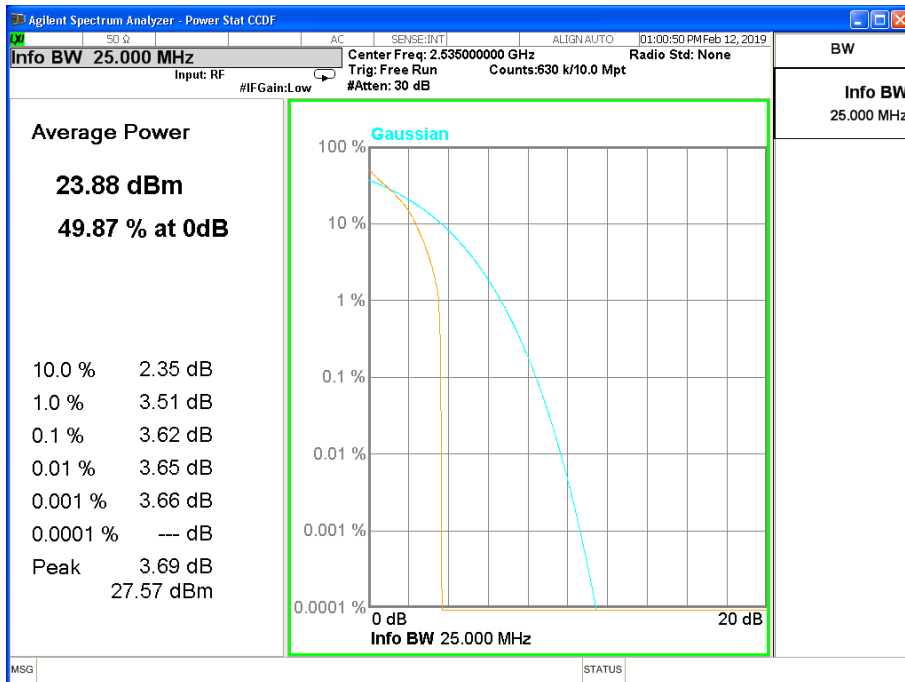




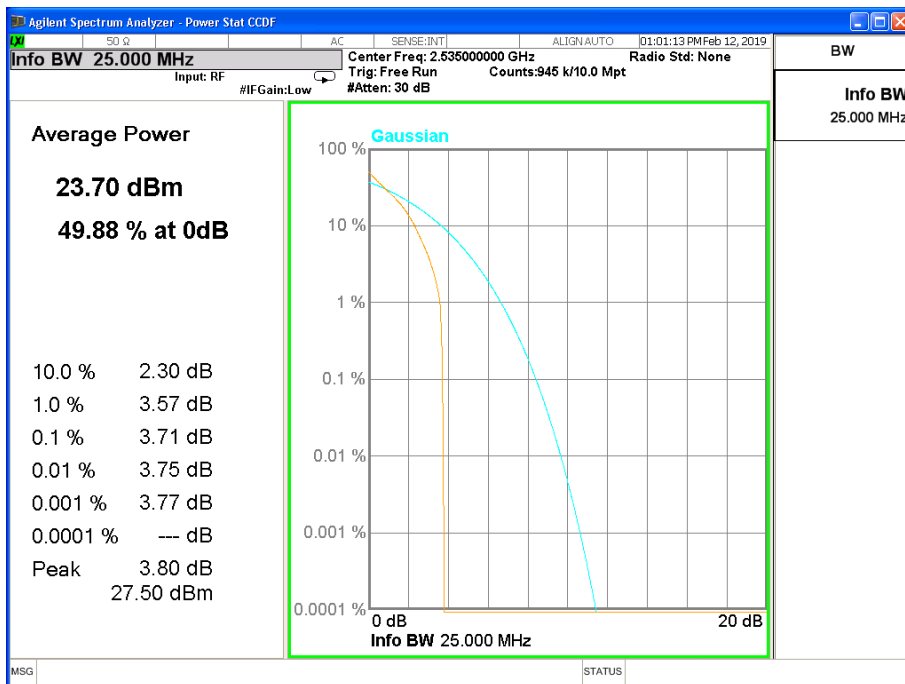
Peak-Average Ratio Plot(15MHz BW,QPSK,Band 7-mid Channel)



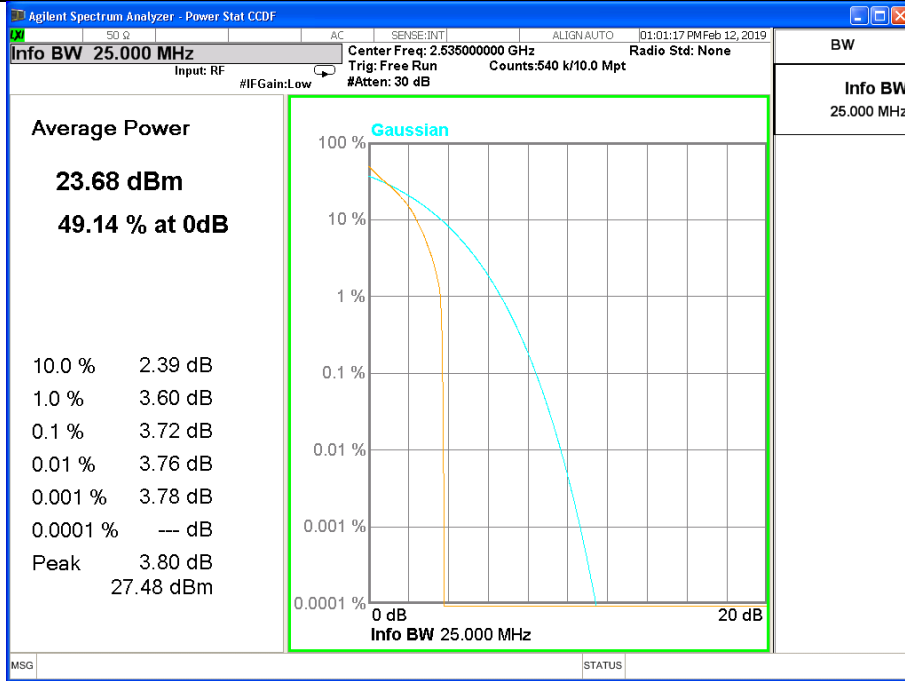
Peak-Average Ratio Plot(15MHz BW,16QAM,Band 7-mid Channel)



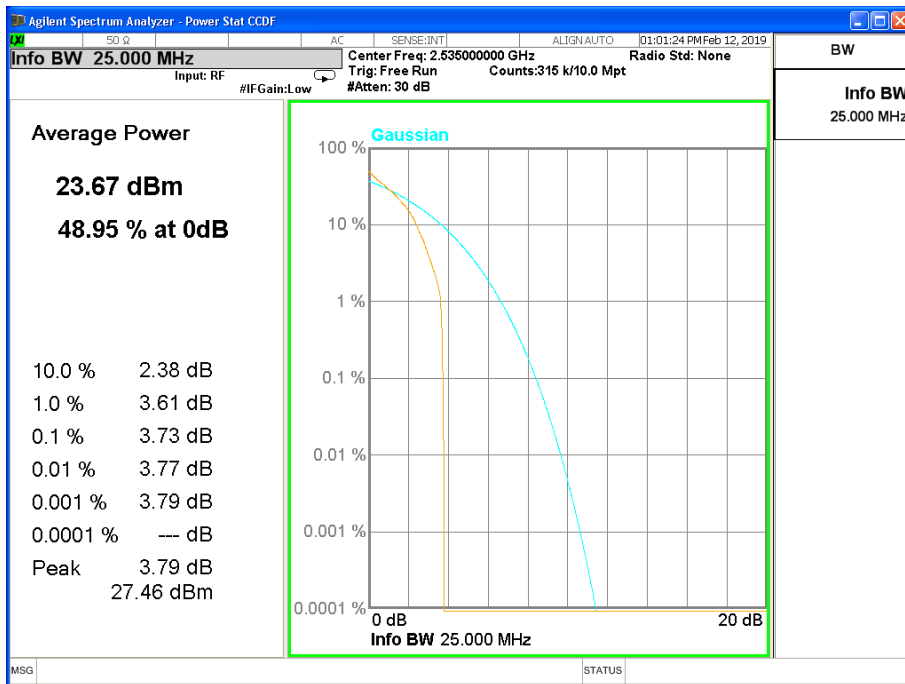
Peak-Average Ratio Plot(15MHz BW,64QAM,Band 7-mid Channel)



Peak-Average Ratio Plot(20MHz BW,QPSK,Band 7-mid Channel)



Peak-Average Ratio Plot(20MHz BW,16QAM,Band 7-mid Channel)



Peak-Average Ratio Plot(20MHz BW,64QAM,Band 7-mid Channel)

**4 Spurious Emissions at antenna terminal**  
Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
7	2510	20850	20	1	0	Fig.4

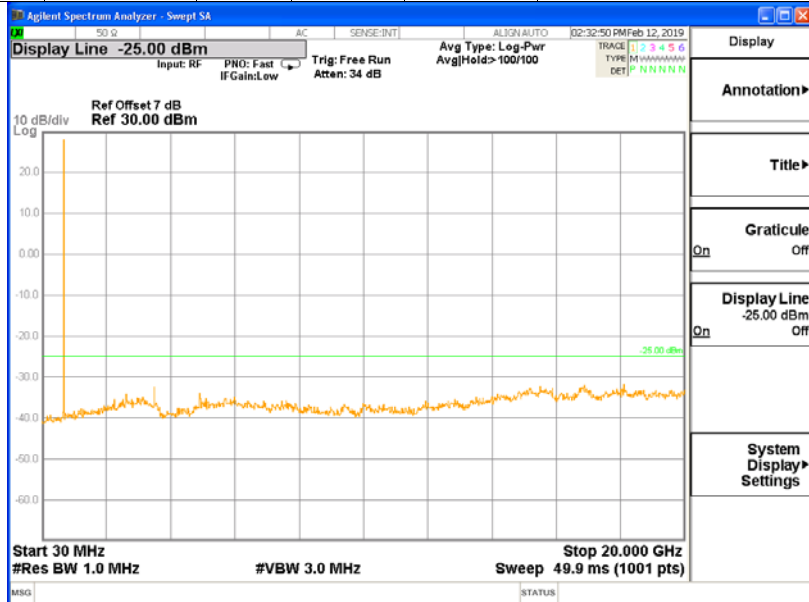


Fig.4

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
7	2535	21100	20	1	0	Fig.1

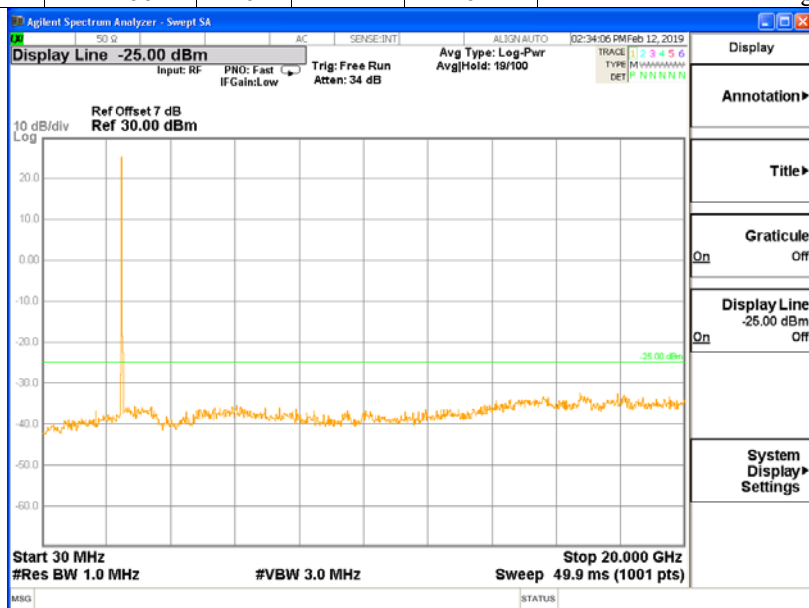


Fig.1

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
7	2560	21350	20	1	0	Fig.1

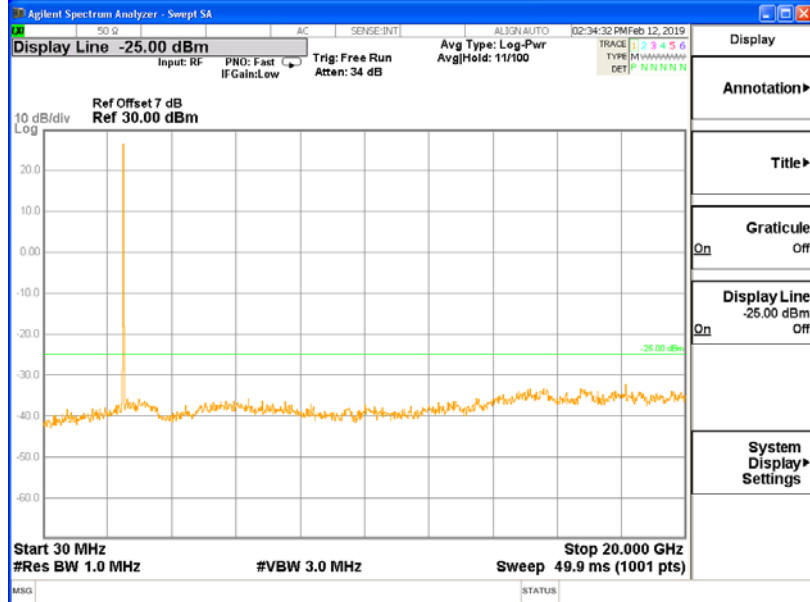
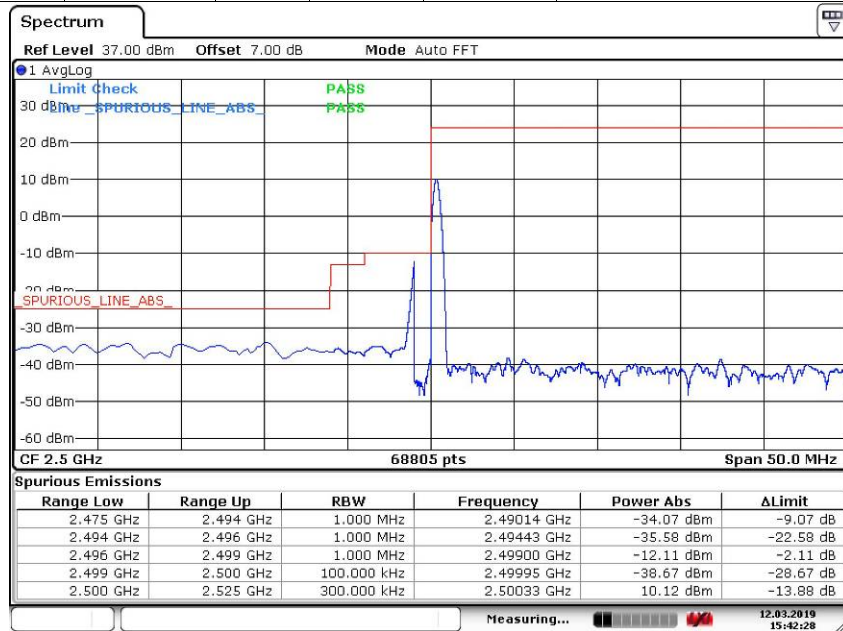


Fig.1

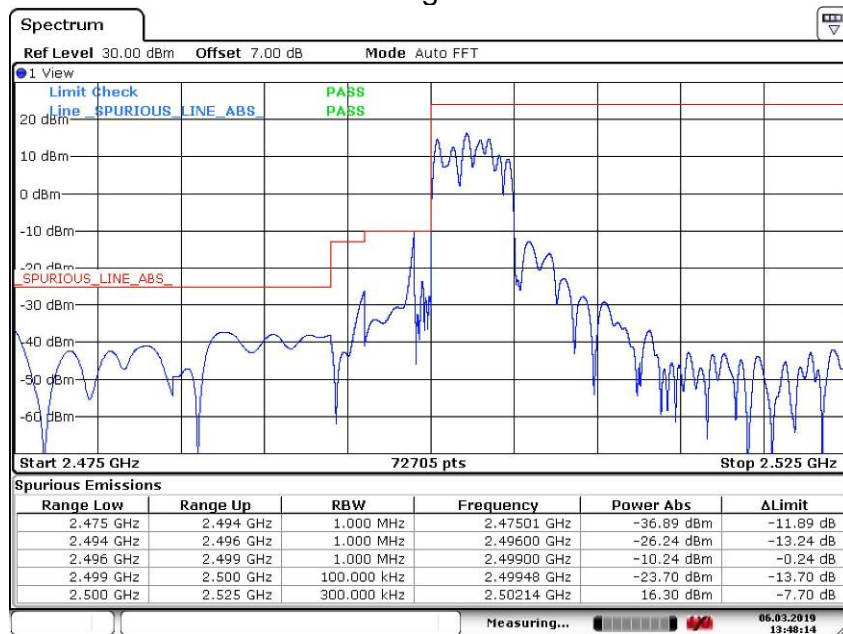
### 5 Band Edges Compliance Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
7	2502.5	20775	5	1	0	Fig.1
7	2502.5	20775	5	25	0	Fig.2
7	2567.5	21425	5	1	24	Fig.3
7	2567.5	21425	5	25	0	Fig.4



Date: 12.MAR.2019 15:42:27

Fig.1



Date: 6.MAR.2019 13:48:14

Fig.2

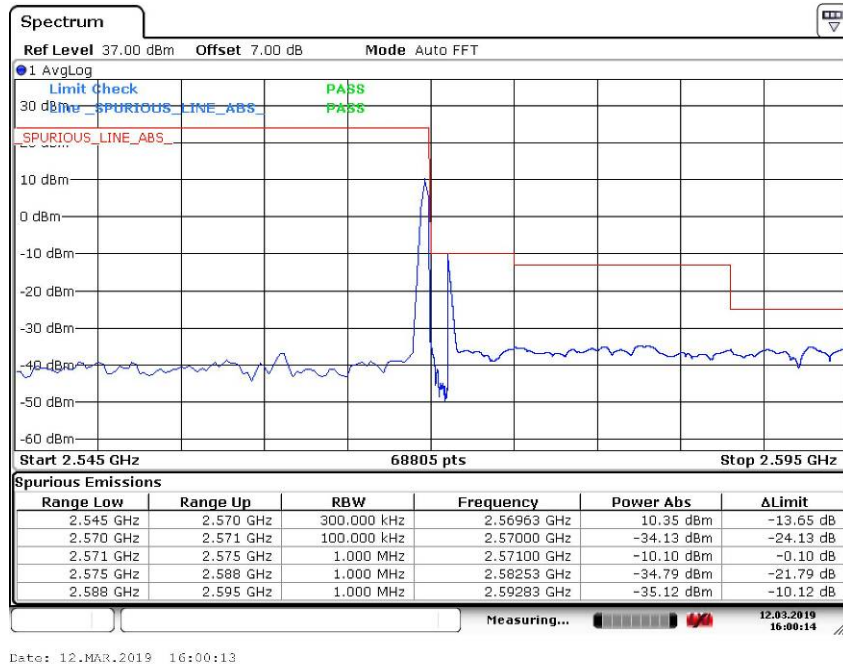


Fig.3

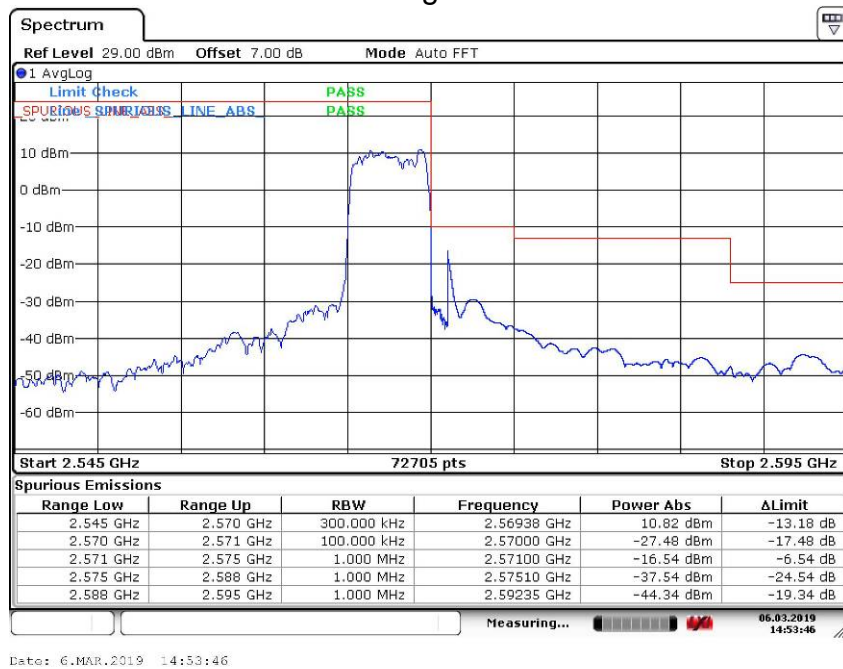


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
7	2505	20800	10	1	0	Fig.1
7	2505	20800	10	50	0	Fig.2
7	2565	21400	10	1	49	Fig.3
7	2565	21400	10	50	0	Fig.4

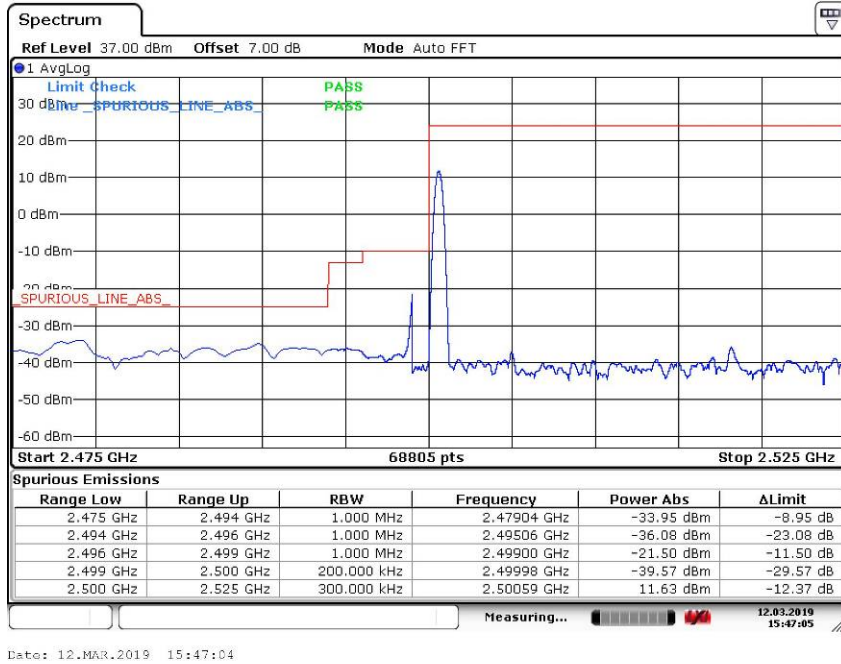


Fig.1

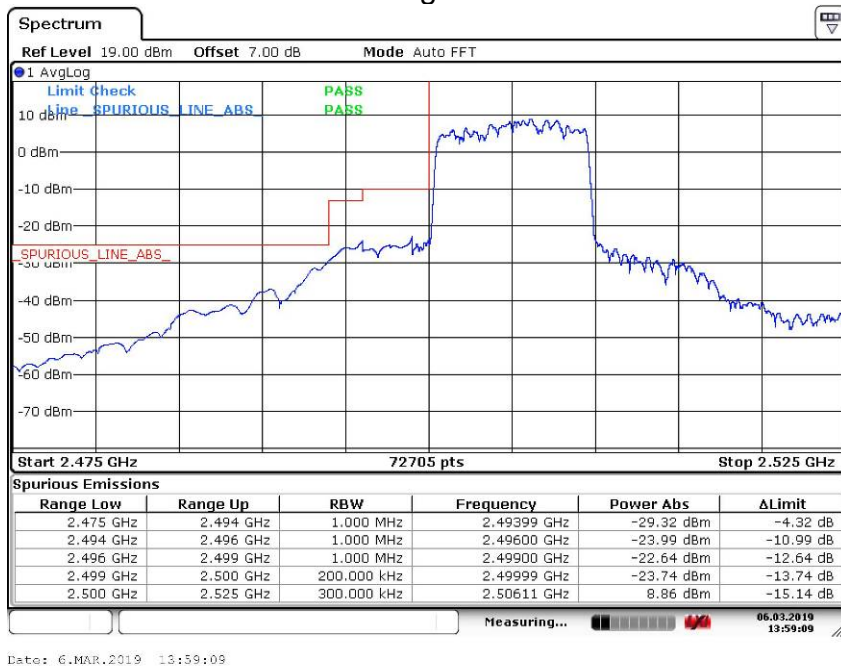


Fig.2



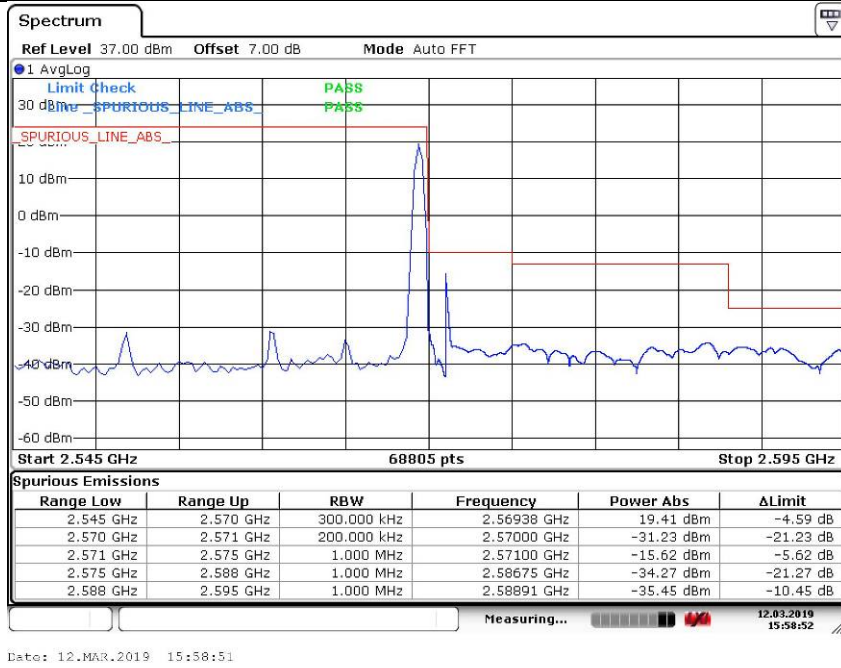


Fig.3

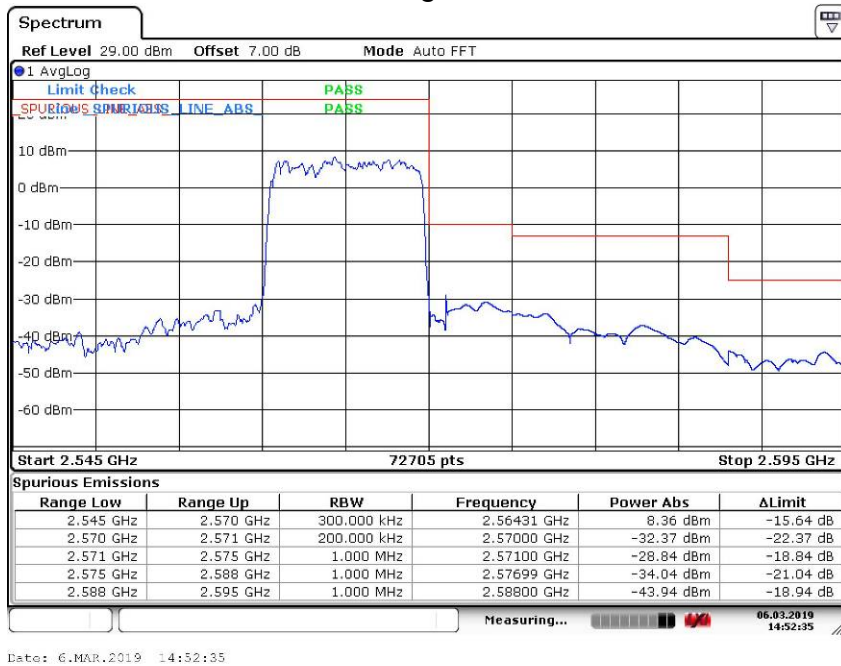


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
7	2507.5	20825	15	1	0	Fig.1
7	2507.5	20825	15	75	0	Fig.2
7	2562.5	21375	15	1	74	Fig.3
7	2562.5	21375	15	75	0	Fig.4

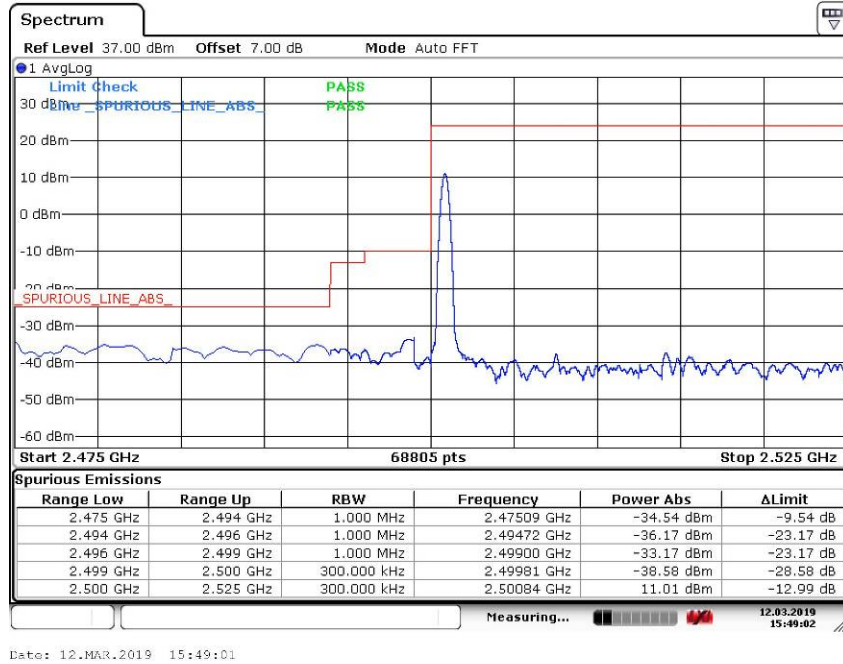


Fig.1

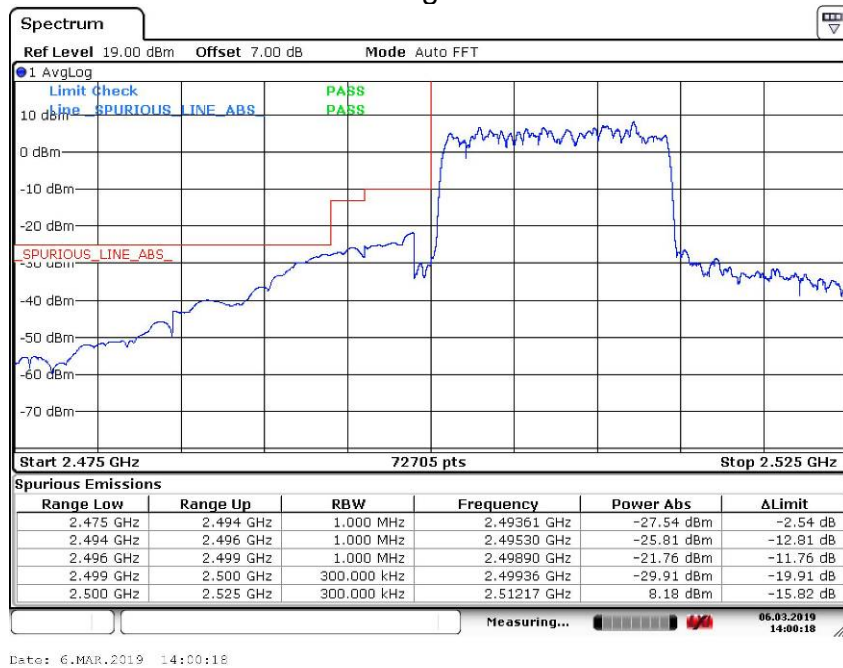


Fig.2

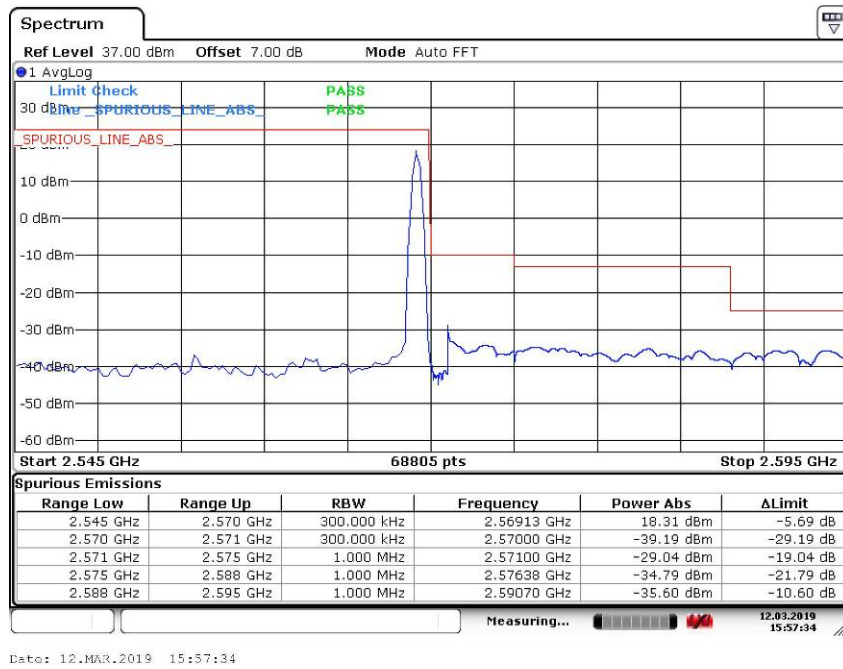


Fig.3

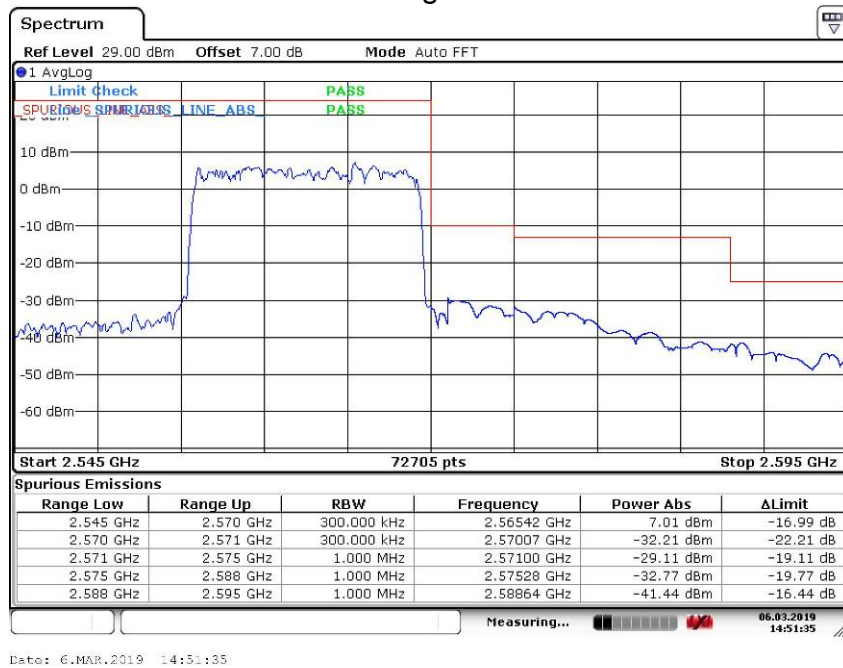


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
7	2510	20850	20	1	0	Fig.1
7	2510	20850	20	100	0	Fig.2
7	2560	21350	20	1	99	Fig.3
7	2560	21350	20	100	0	Fig.4

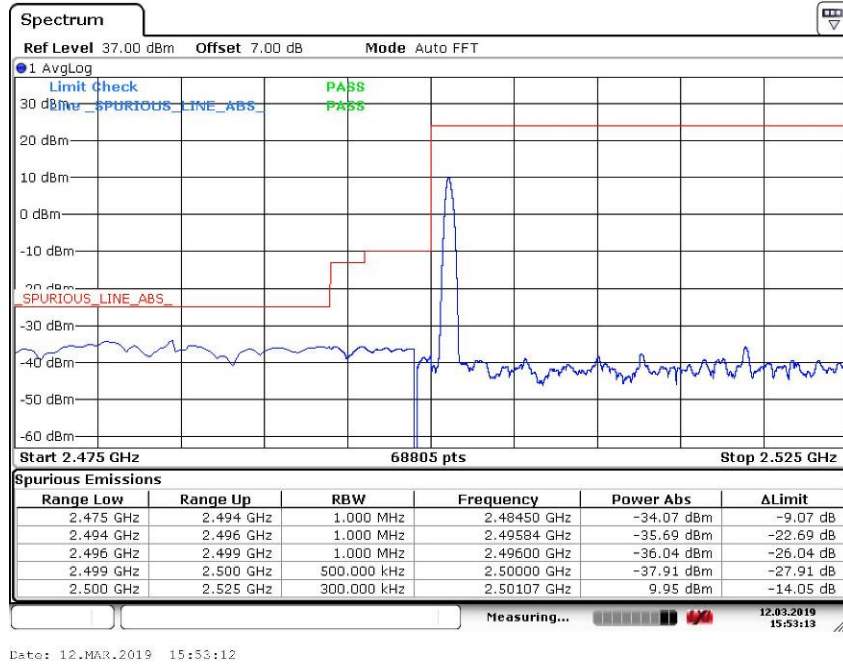


Fig.1

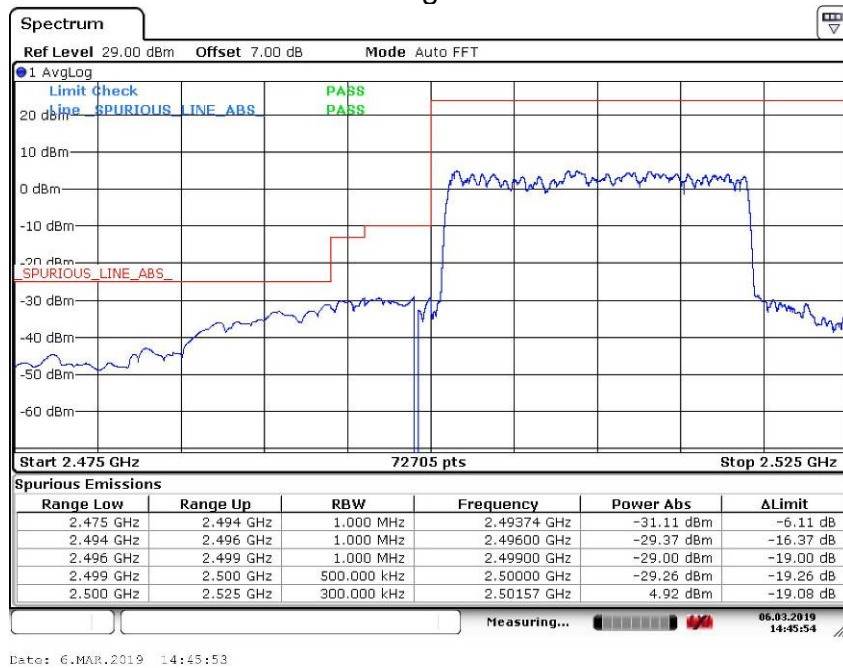


Fig.2

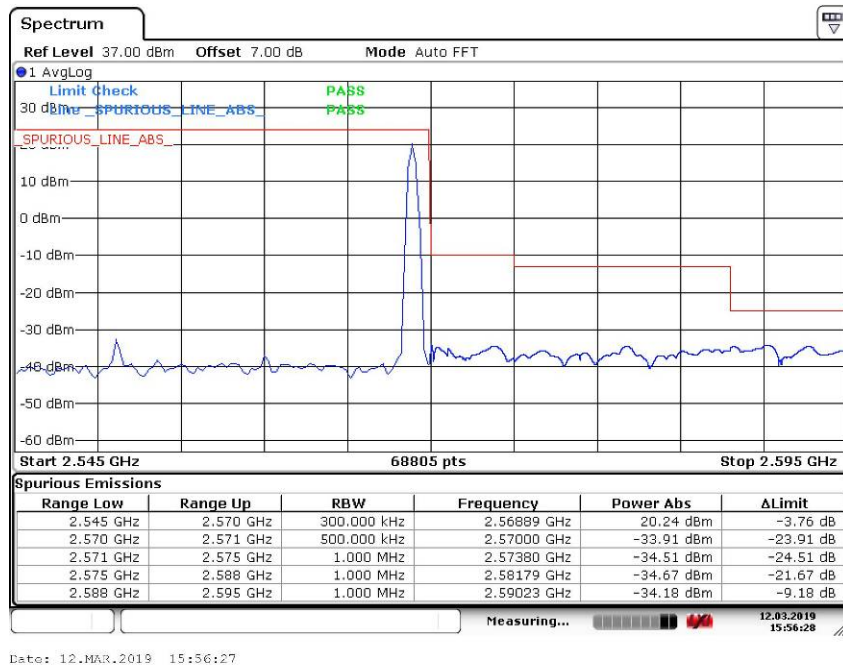


Fig.3

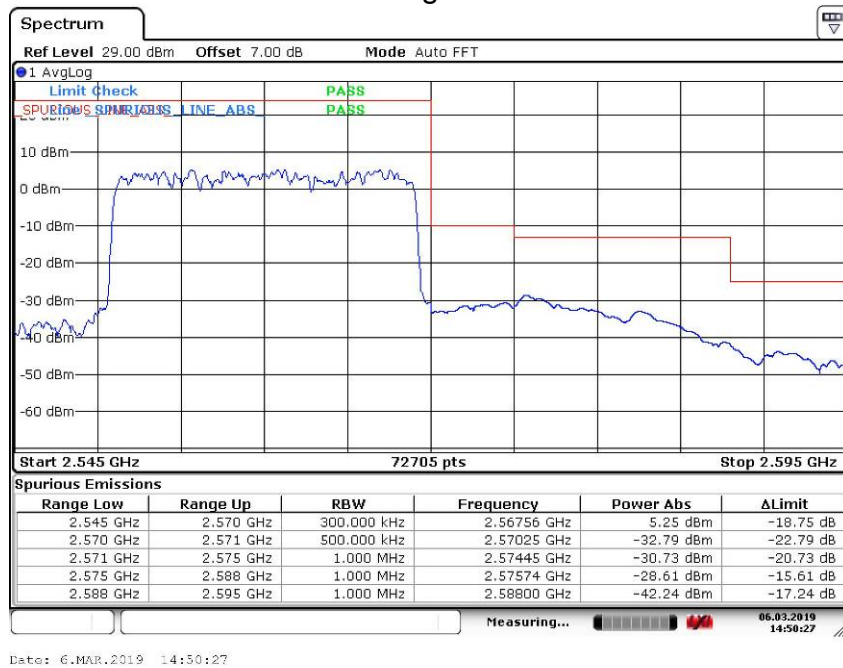


Fig.4

## 6 Frequency Stability

Test result:

Temperature(°C)	Voltage	Test Result (ppm) Band7 Low Channel			
		5M	10M	15M	20M
0	NV	0.007	0.005	0.016	0.005
+10	NV	0.010	-0.003	0.004	0.001
+20	NV	-0.003	0.012	0.005	0.009
+30	NV	0.008	0.005	-0.012	0.011
+35	NV	0.011	0.003	-0.002	0.017
+20	LV	0.006	0.017	0.002	0.005
+20	HV	0.016	0.008	-0.004	0.007

Temperature(°C)	Voltage	Test Result (ppm) Band7 High Channel			
		5M	10M	15M	20M
0	NV	0.006	-0.005	0.005	0.009
+10	NV	0.001	0.009	0.001	0.015
+20	NV	-0.004	0.016	0.016	0.015
+30	NV	0.003	-0.014	0.019	0.013
+35	NV	0.006	0.011	0.009	0.005
+20	LV	-0.014	0.014	0.017	0.014
+20	HV	0.002	0.020	0.002	-0.006

## APPENDIX A – TEST DATA OF CONDUCTED EMISSION

### LTE Band 12

#### 1 RF Power Output

Main ANT and DIV ANT are TX diversity switching.

Main Antenna Gain=-4.5dBi

DIV Antenna Gain=-8.0dBi

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
QPSK	699.7	23017	1.4	1	0	23.1	0.044	0.020
				1	5	23.2	0.045	0.020
				3	2	23.1	0.044	0.020
				6	0	22.2	0.036	0.016
	707.5	23095		1	0	23.1	0.044	0.020
				1	5	23.2	0.045	0.020
				3	2	23.1	0.044	0.020
				6	0	22.2	0.036	0.016
	715.3	23173		1	0	23.1	0.044	0.020
				1	5	23.2	0.045	0.020
				3	2	23.1	0.044	0.020
				6	0	22.2	0.036	0.016
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
16QAM	699.7	23017	1.4	1	0	22.7	0.040	0.018
				1	5	22.7	0.040	0.018
				3	2	22.3	0.037	0.016
				6	0	21.4	0.030	0.013
	707.5	23095		1	0	22.7	0.040	0.018
				1	5	22.7	0.040	0.018
				3	2	22.3	0.037	0.016
				6	0	21.4	0.030	0.013
	715.3	23173		1	0	22.7	0.040	0.018
				1	5	22.7	0.040	0.018
				3	2	22.3	0.037	0.016
				6	0	21.4	0.030	0.013
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
64QAM	699.7	23017	1.4	1	0	22.7	0.040	0.018
				1	5	22.8	0.041	0.018
				3	2	22.3	0.037	0.016
				6	0	21.2	0.029	0.013
	707.5	23095		1	0	22.7	0.040	0.018
				1	5	22.8	0.041	0.018
				3	2	22.3	0.037	0.016
				6	0	21.2	0.029	0.013
	715.3	23173		1	0	22.7	0.040	0.018
				1	5	22.8	0.041	0.018
				3	2	22.3	0.037	0.016
				6	0	21.2	0.029	0.013

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
QPSK	700.5	23025	3	1	0	23.2	0.045	0.020
				1	14	23.3	0.046	0.021
				8	4	22.3	0.037	0.016
				15	0	22.3	0.037	0.016
	707.5	23095		1	0	23.2	0.045	0.020
				1	14	23.3	0.046	0.021
				8	4	22.3	0.037	0.016
				15	0	22.3	0.037	0.016
	714.5	23165		1	0	23.2	0.045	0.020
				1	14	23.3	0.046	0.021
				8	4	22.3	0.037	0.016
				15	0	22.3	0.037	0.016
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
16QAM	700.5	23025	3	1	0	22.7	0.040	0.018
				1	14	22.8	0.041	0.018
				8	4	21.4	0.030	0.013
				15	0	21.3	0.029	0.013
	707.5	23095		1	0	22.7	0.040	0.018
				1	14	22.8	0.041	0.018
				8	4	21.4	0.030	0.013
				15	0	21.3	0.029	0.013
	714.5	23165		1	0	22.7	0.040	0.018
				1	14	22.8	0.041	0.018
				8	4	21.4	0.030	0.013
				15	0	21.3	0.029	0.013
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
64QAM	700.5	23025	3	1	0	22.8	0.041	0.018
				1	14	22.9	0.042	0.019
				8	4	21.4	0.030	0.013
				15	0	21.3	0.029	0.013
	707.5	23095		1	0	22.8	0.041	0.018
				1	14	22.9	0.042	0.019
				8	4	21.4	0.030	0.013
				15	0	21.3	0.029	0.013
	714.5	23165		1	0	22.8	0.041	0.018
				1	14	22.9	0.042	0.019
				8	4	21.4	0.030	0.013
				15	0	21.3	0.029	0.013



Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
QPSK	701.5	23035	5	1	0	23.2	0.045	0.020
				1	24	23.3	0.046	0.021
				12	6	22.3	0.037	0.016
				25	0	22.3	0.037	0.016
	707.5	23095		1	0	23.2	0.045	0.020
				1	24	23.3	0.046	0.021
				12	6	22.3	0.037	0.016
				25	0	22.3	0.037	0.016
	713.5	23155		1	0	23.2	0.045	0.020
				1	24	23.3	0.046	0.021
				12	6	22.3	0.037	0.016
				25	0	22.3	0.037	0.016
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
16QAM	701.5	23035	5	1	0	22.7	0.040	0.018
				1	24	22.8	0.041	0.018
				12	6	21.4	0.030	0.013
				25	0	21.3	0.029	0.013
	707.5	23095		1	0	22.7	0.040	0.018
				1	24	22.8	0.041	0.018
				12	6	21.4	0.030	0.013
				25	0	21.3	0.029	0.013
	713.5	23155		1	0	22.7	0.040	0.018
				1	24	22.8	0.041	0.018
				12	6	21.4	0.030	0.013
				25	0	21.3	0.029	0.013
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
64QAM	701.5	23035	5	1	0	22.8	0.041	0.018
				1	24	22.9	0.042	0.019
				12	6	21.3	0.029	0.013
				25	0	21.2	0.029	0.013
	707.5	23095		1	0	22.8	0.041	0.018
				1	24	22.9	0.042	0.019
				12	6	21.3	0.029	0.013
				25	0	21.2	0.029	0.013
	713.5	23155		1	0	22.8	0.041	0.018
				1	24	22.9	0.042	0.019
				12	6	21.3	0.029	0.013
				25	0	21.2	0.029	0.013

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
QPSK	704	23060	10	1	0	23.5	0.048	0.022
				1	49	23.4	0.047	0.021
				24	12	22.3	0.037	0.016
				50	0	22.3	0.037	0.016
	707.5	23095		1	0	23.5	0.048	0.022
				1	49	23.4	0.047	0.021
				24	12	22.3	0.037	0.016
				50	0	22.3	0.037	0.016
	711	23130		1	0	23.5	0.048	0.022
				1	49	23.4	0.047	0.021
				24	12	22.3	0.037	0.016
				50	0	22.3	0.037	0.016
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
16QAM	704	23060	10	1	0	22.8	0.041	0.018
				1	49	22.9	0.042	0.019
				24	12	21.2	0.029	0.013
				50	0	21.3	0.029	0.013
	707.5	23095		1	0	22.8	0.041	0.018
				1	49	22.9	0.042	0.019
				24	12	21.2	0.029	0.013
				50	0	21.3	0.029	0.013
	711	23130		1	0	22.8	0.041	0.018
				1	49	22.9	0.042	0.019
				24	12	21.2	0.029	0.013
				50	0	21.3	0.029	0.013
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)	Main-Ant ERP (W)	DIV-Ant ERP (W)
64QAM	704	23060	10	1	0	22.8	0.041	0.018
				1	49	23.0	0.043	0.019
				24	12	21.2	0.029	0.013
				50	0	21.2	0.029	0.013
	707.5	23095		1	0	22.8	0.041	0.018
				1	49	23.0	0.043	0.019
				24	12	21.2	0.029	0.013
				50	0	21.2	0.029	0.013
	711	23130		1	0	22.8	0.041	0.018
				1	49	23.0	0.043	0.019
				24	12	21.2	0.029	0.013
				50	0	21.2	0.029	0.013

## 2 Occupied Bandwidth

### Test result

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
12	699.7	23017	1.4	6	0	1.0992	Fig.1	1.1037	Fig.2	1.0999	Fig.3
12	707.5	23095	1.4	6	0	1.1018	Fig.4	1.1027	Fig.5	1.1011	Fig.6
12	715.3	23173	1.4	6	0	1.0969	Fig.7	1.1039	Fig.8	1.1009	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
12	699.7	23017	1.4	6	0	1.287	Fig.1	1.300	Fig.2	1.297	Fig.3
12	707.5	23095	1.4	6	0	1.311	Fig.4	1.298	Fig.5	1.313	Fig.6
12	715.3	23173	1.4	6	0	1.297	Fig.7	1.301	Fig.8	1.311	Fig.9

Fig.1

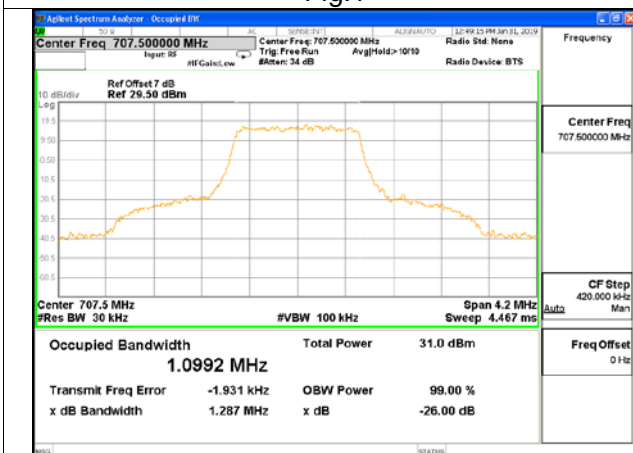


Fig.2

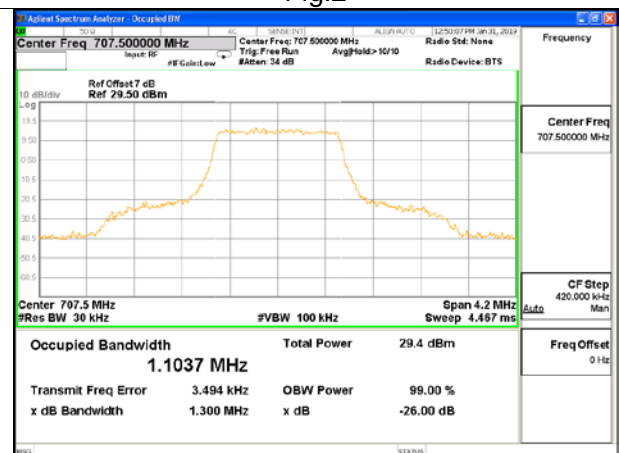


Fig.3

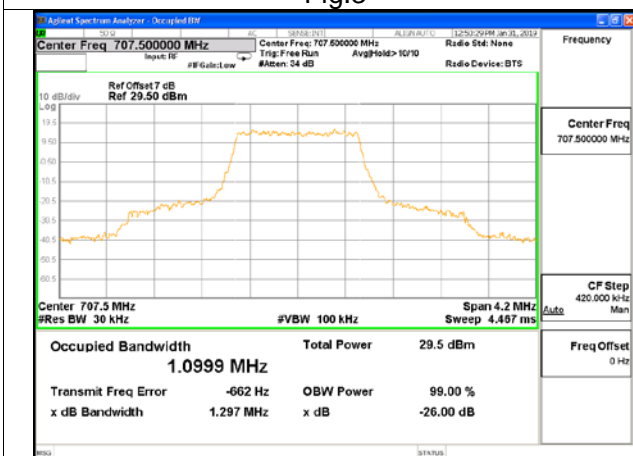


Fig.4

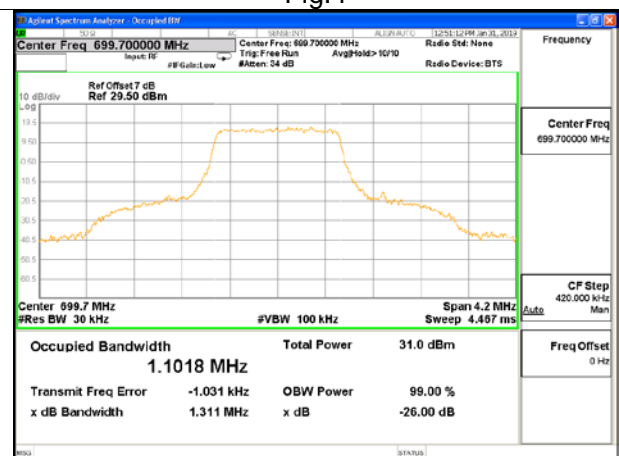


Fig.5

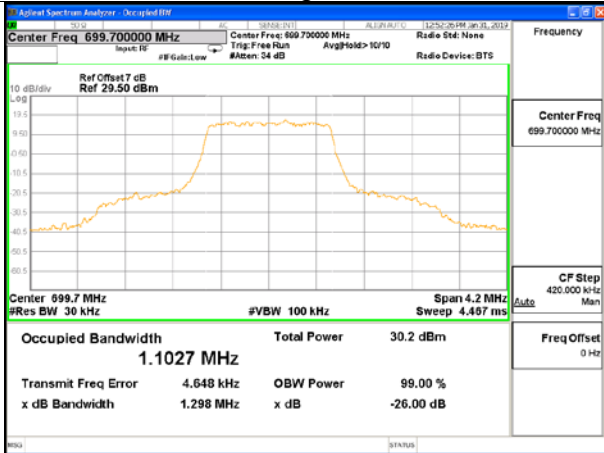


Fig.6

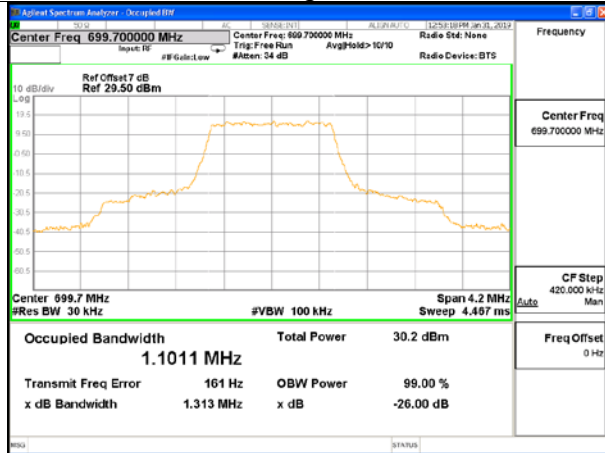


Fig.7

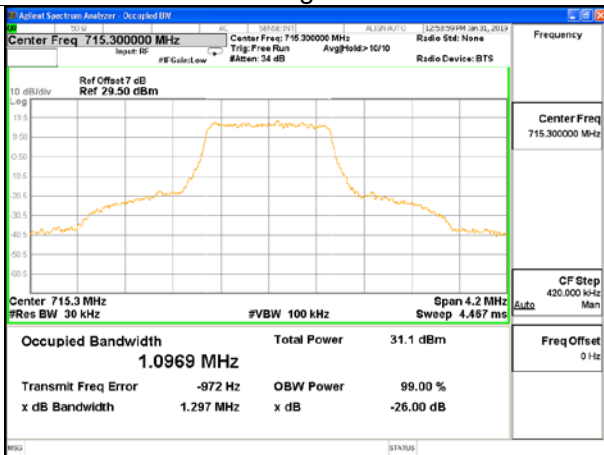


Fig.8

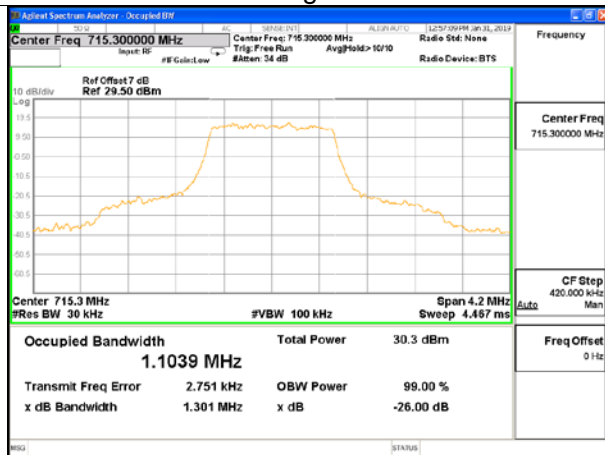
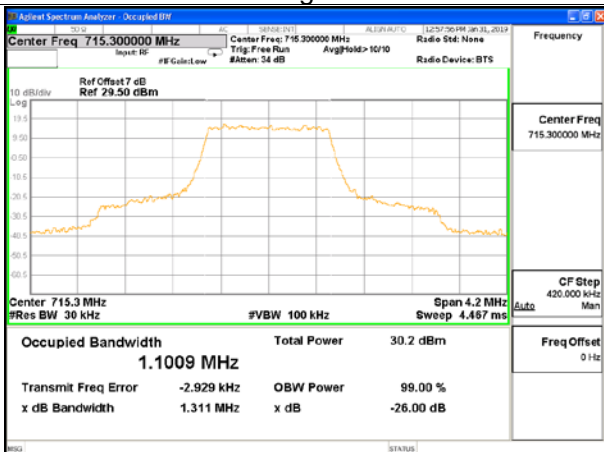


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
12	700.5	23025	3	15	0	2.7417	Fig.1	2.7414	Fig.2	2.7458	Fig.3
12	707.5	23095	3	15	0	2.7357	Fig.4	2.7325	Fig.5	2.7413	Fig.6
12	714.5	23165	3	15	0	2.7405	Fig.7	2.7378	Fig.8	2.7387	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
12	700.5	23025	3	15	0	3.065	Fig.1	3.075	Fig.2	3.053	Fig.3
12	707.5	23095	3	15	0	3.064	Fig.4	3.064	Fig.5	3.069	Fig.6
12	714.5	23165	3	15	0	3.051	Fig.7	3.083	Fig.8	3.063	Fig.9

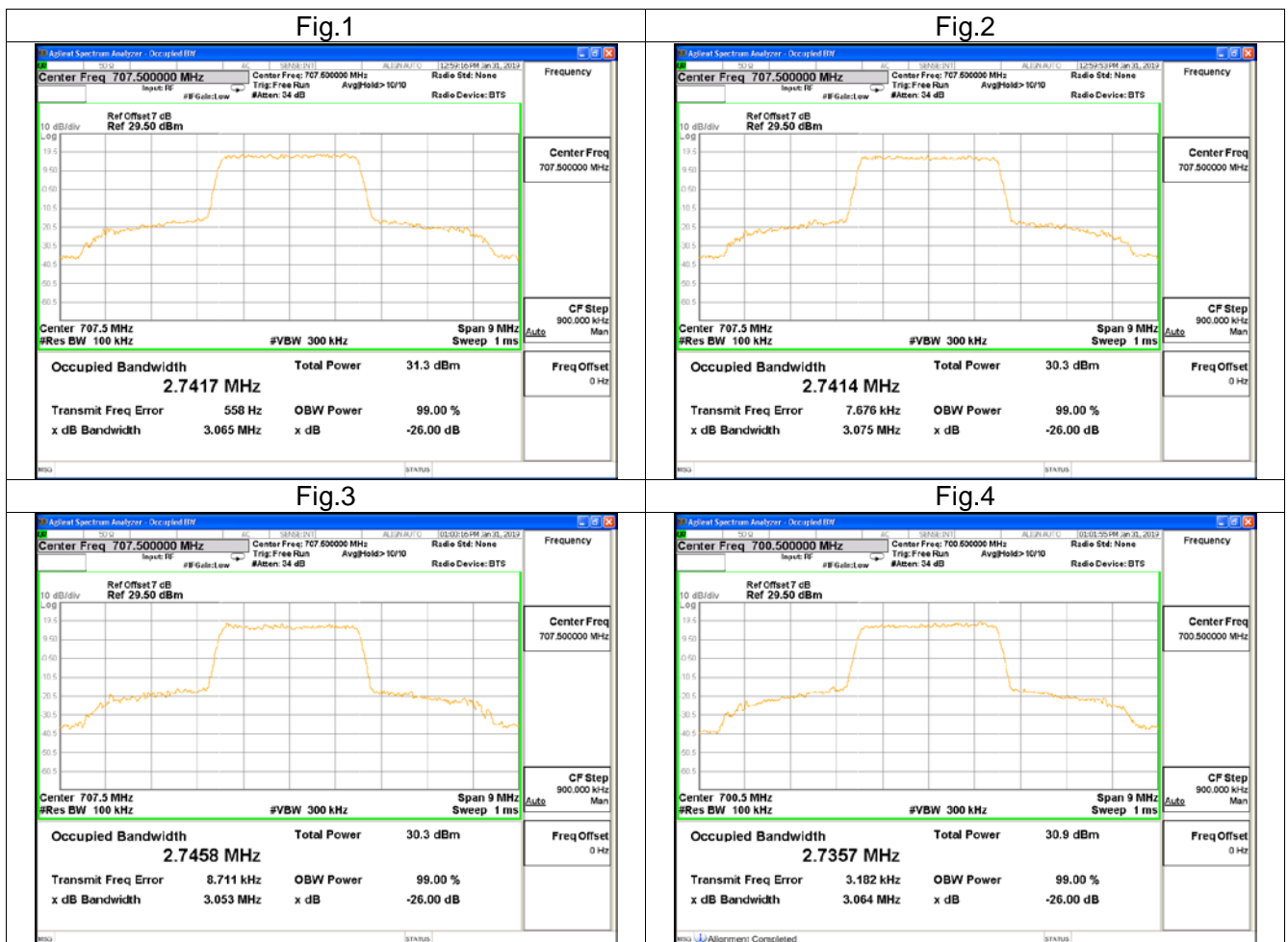


Fig.5

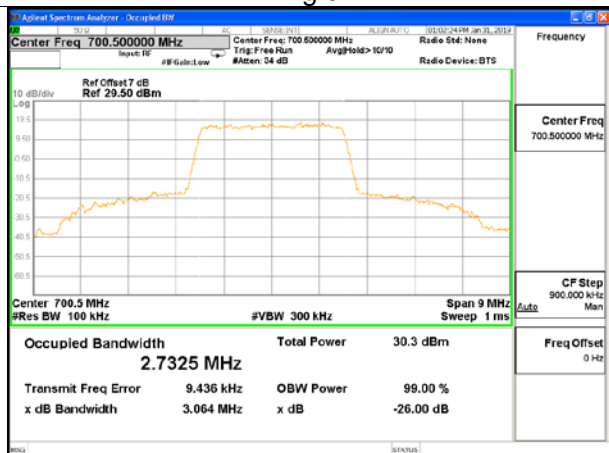


Fig.6

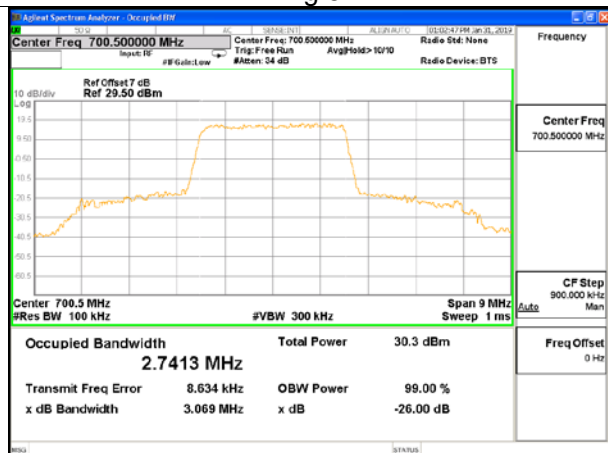


Fig.7

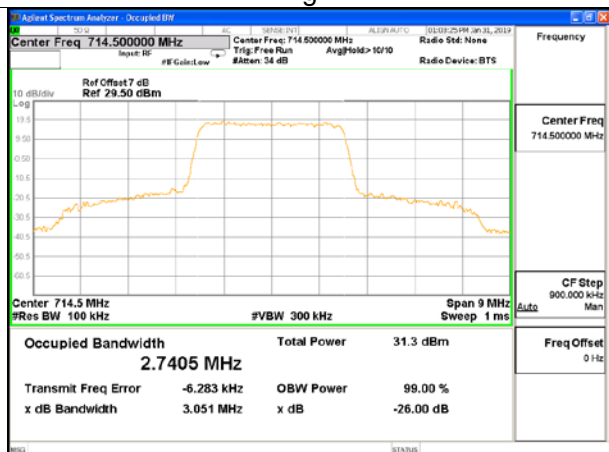


Fig.8

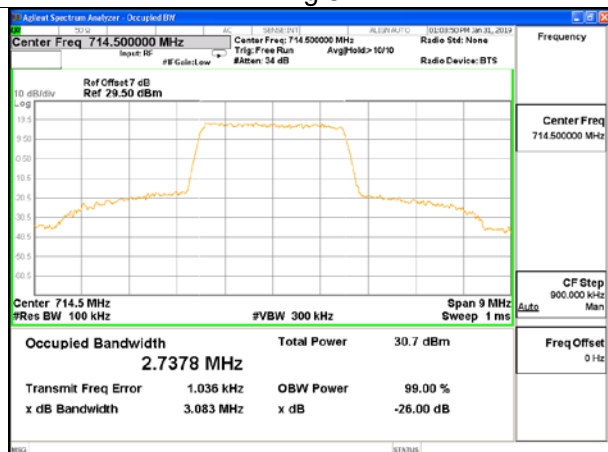
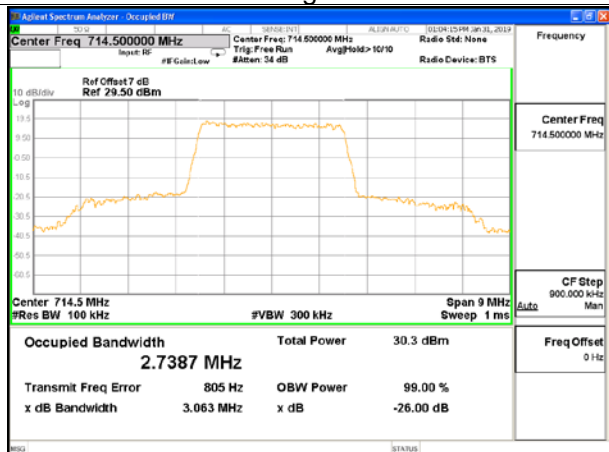


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
12	701.5	23035	5	25	0	4.4995	Fig.1	4.5041	Fig.2	4.4976	Fig.3
12	707.5	23095	5	25	0	4.5122	Fig.4	4.5187	Fig.5	4.5026	Fig.6
12	713.5	23155	5	25	0	4.4965	Fig.7	4.5011	Fig.8	4.5055	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
12	701.5	23035	5	25	0	5.020	Fig.1	4.983	Fig.2	4.954	Fig.3
12	707.5	23095	5	25	0	5.059	Fig.4	5.029	Fig.5	4.957	Fig.6
12	713.5	23155	5	25	0	5.033	Fig.7	4.967	Fig.8	4.973	Fig.9

