

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

LTE Band 7

1 RF Power Output

Antenna Gain=-2.4dBi

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	2502.5	20775	5	1	0	22.39
				1	24	22.39
				12	6	22.31
				25	0	22.21
	2535	21100		1	0	22.50
				1	24	22.50
				12	6	22.36
				25	0	22.28
	2567.5	21425		1	0	22.49
				1	24	22.49
				12	6	22.35
				25	0	22.25
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
16QAM	2502.5	20775	5	1	0	22.35
				1	24	22.35
				12	6	21.52
				25	0	21.49
	2535	21100		1	0	22.40
				1	24	22.40
				12	6	21.45
				25	0	21.39
	2567.5	21425		1	0	22.44
				1	24	22.44
				12	6	21.48
				25	0	21.43
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	2502.5	20775	5	1	0	22.38
				1	24	22.38
				12	6	21.46
				25	0	21.39
	2535	21100		1	0	22.45
				1	24	22.45
				12	6	21.36
				25	0	21.32
	2567.5	21425		1	0	22.44
				1	24	22.44
				12	6	21.38
				25	0	21.34

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	2505	20800	10	1	0	22.45
				1	49	22.45
				24	12	22.37
				50	0	22.27
	2535	21100		1	0	22.57
				1	49	22.57
				24	12	22.43
				50	0	22.35
	2565	21400		1	0	22.51
				1	49	22.51
				24	12	22.37
				50	0	22.27
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
16QAM	2505	20800	10	1	0	22.41
				1	49	22.41
				24	12	21.58
				50	0	21.55
	2535	21100		1	0	22.47
				1	49	22.47
				24	12	21.52
				50	0	21.46
	2565	21400		1	0	22.46
				1	49	22.46
				24	12	21.50
				50	0	21.45
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	2505	20800	10	1	0	22.44
				1	49	22.44
				24	12	21.52
				50	0	21.45
	2535	21100		1	0	22.52
				1	49	22.52
				24	12	21.43
				50	0	21.39
	2565	21400		1	0	22.46
				1	49	22.46
				24	12	21.40
				50	0	21.36

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	2507.5	20825	15	1	0	22.49
				1	74	22.49
				40	18	22.41
				75	0	22.31
	2535	21100		1	0	22.60
				1	74	22.60
				40	18	22.46
				75	0	22.38
	2562.5	21375		1	0	22.55
				1	74	22.55
				40	18	22.41
				75	0	22.31
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
16QAM	2507.5	20825	15	1	0	22.45
				1	74	22.45
				40	18	21.62
				75	0	21.59
	2535	21100		1	0	22.50
				1	74	22.50
				40	18	21.55
				75	0	21.49
	2562.5	21375		1	0	22.50
				1	74	22.50
				40	18	21.54
				75	0	21.49
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	2507.5	20825	15	1	0	22.48
				1	74	22.48
				40	18	21.56
				75	0	21.49
	2535	21100		1	0	22.55
				1	74	22.55
				40	18	21.46
				75	0	21.42
	2562.5	21375		1	0	22.50
				1	74	22.50
				40	18	21.44
				75	0	21.40

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	2510	20850	20	1	0	22.63
				1	99	22.63
				50	25	22.55
				100	0	22.45
	2535	21100		1	0	22.71
				1	99	22.71
				50	25	22.57
				100	0	22.49
	2560	21350		1	0	22.68
				1	99	22.68
				50	25	22.54
				100	0	22.44
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
16QAM	2510	20850	20	1	0	22.59
				1	99	22.59
				50	25	21.76
				100	0	21.73
	2535	21100		1	0	22.61
				1	99	22.61
				50	25	21.66
				100	0	21.60
	2560	21350		1	0	22.63
				1	99	22.63
				50	25	21.67
				100	0	21.62
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	2510	20850	20	1	0	22.62
				1	99	22.62
				50	25	21.70
				100	0	21.63
	2535	21100		1	0	22.66
				1	99	22.66
				50	25	21.57
				100	0	21.53
	2560	21350		1	0	22.63
				1	99	22.63
				50	25	21.57
				100	0	21.53

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	
7	2502.5	20775	5	25	0	4.5235	Fig.1	4.5193	Fig.2	4.5088	Fig.3
7	2535	21100	5	25	0	4.5264	Fig.4	4.5246	Fig.5	4.5119	Fig.6
7	2567.5	21425	5	25	0	4.5249	Fig.7	4.5229	Fig.8	4.5156	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	2502.5	20775	5	25	0	5.189	Fig.1	5.284	Fig.2	5.217	Fig.3
7	2535	21100	5	25	0	5.298	Fig.4	5.209	Fig.5	5.311	Fig.6
7	2567.5	21425	5	25	0	5.285	Fig.7	5.267	Fig.8	5.241	Fig.9

Fig.1



Fig.2

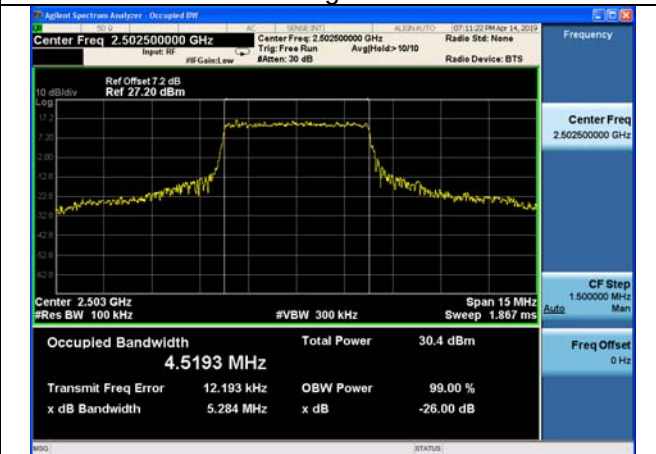


Fig.3

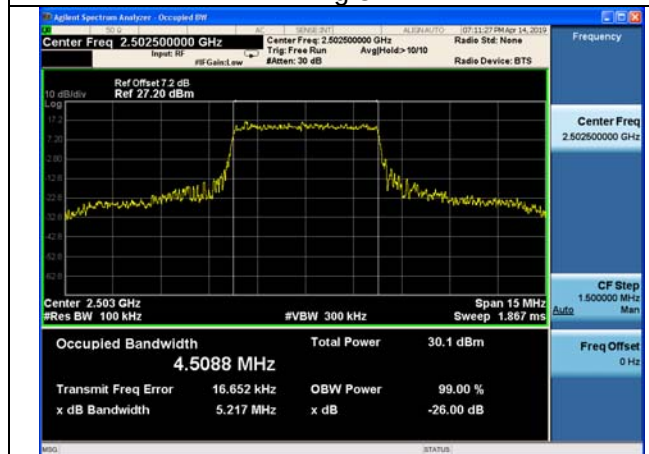


Fig.4

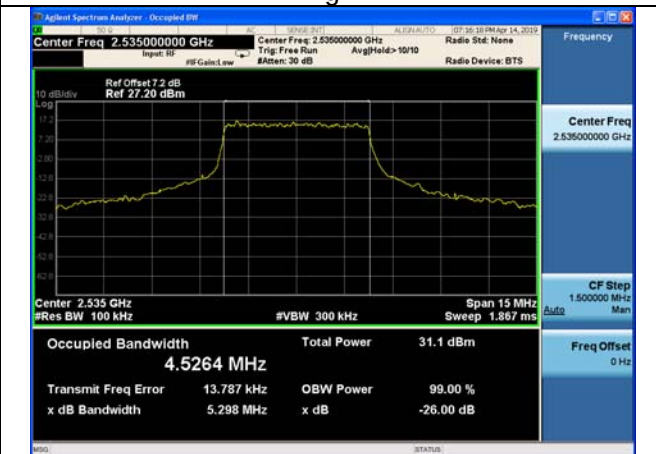


Fig.5

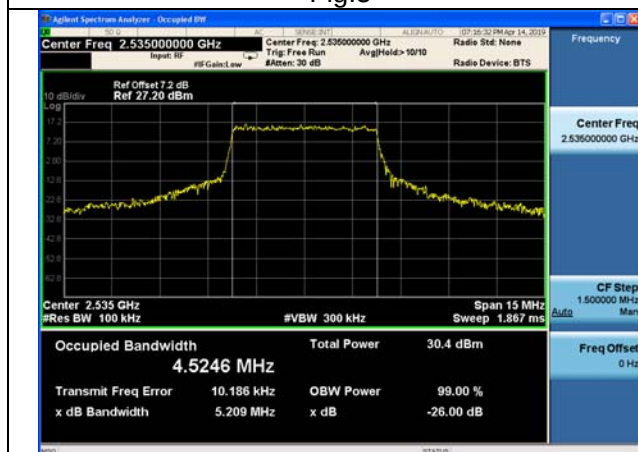


Fig.6

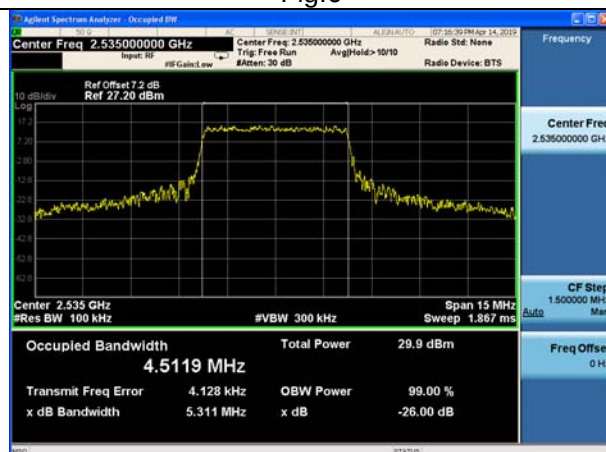


Fig.7

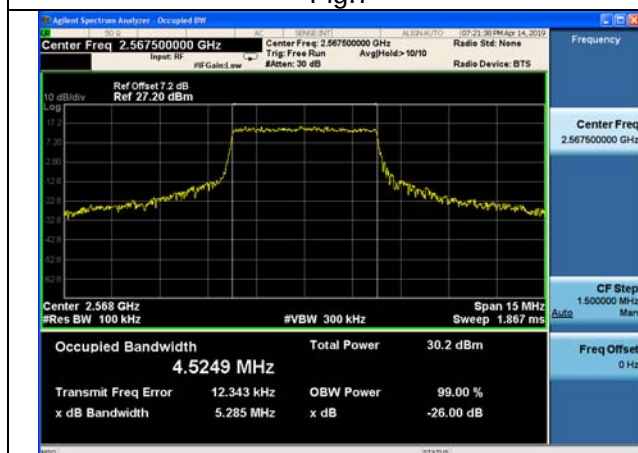


Fig.8

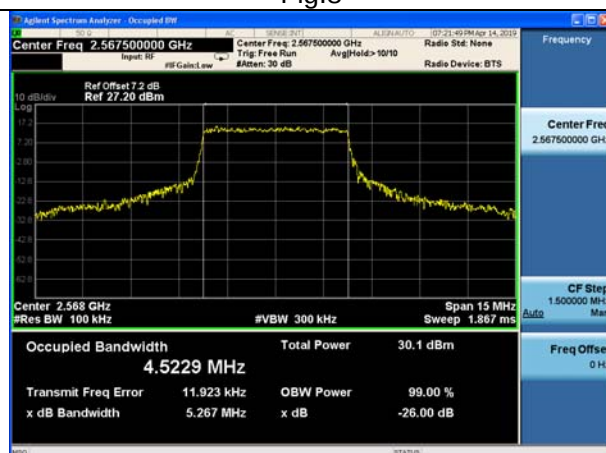
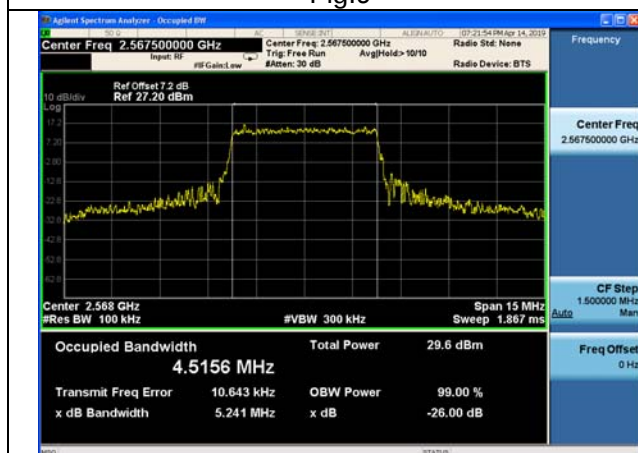


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
7	2505	20800	10	50	0	9.0920	Fig.1	9.1037	Fig.2	9.0799	Fig.3
7	2535	21100	10	50	0	9.1207	Fig.4	9.0765	Fig.5	9.0724	Fig.6
7	2565	21400	10	50	0	9.0920	Fig.7	9.0678	Fig.8	9.0644	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	2505	20800	10	50	0	10.72	Fig.1	10.57	Fig.2	10.23	Fig.3
7	2535	21100	10	50	0	10.77	Fig.4	10.59	Fig.5	10.30	Fig.6
7	2565	21400	10	50	0	10.64	Fig.7	10.58	Fig.8	10.88	Fig.9

Fig.1

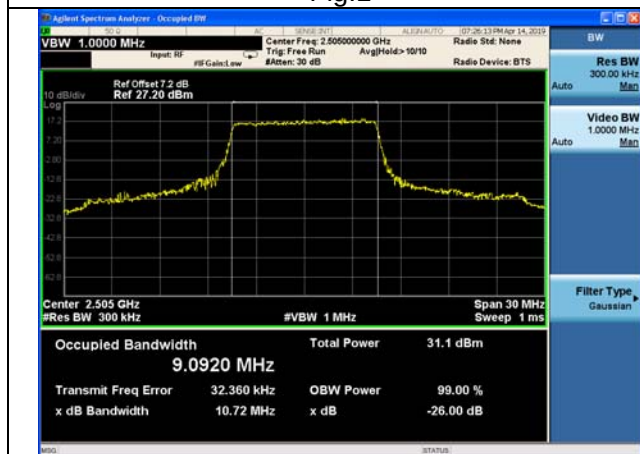


Fig.2

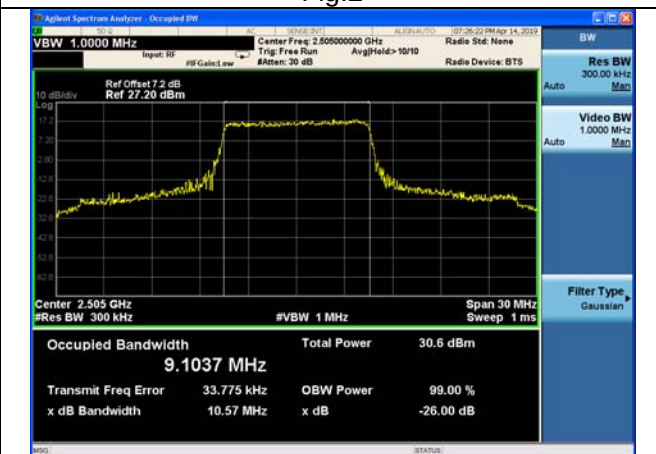


Fig.3

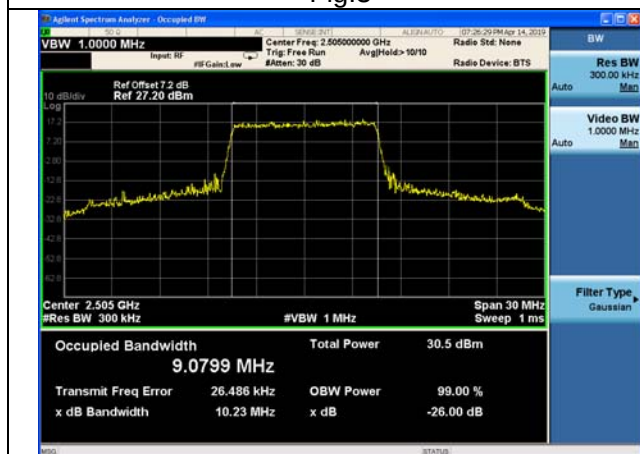


Fig.4

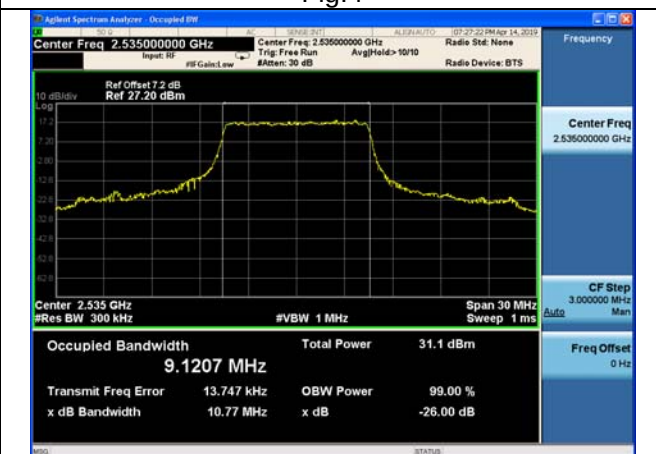


Fig.5

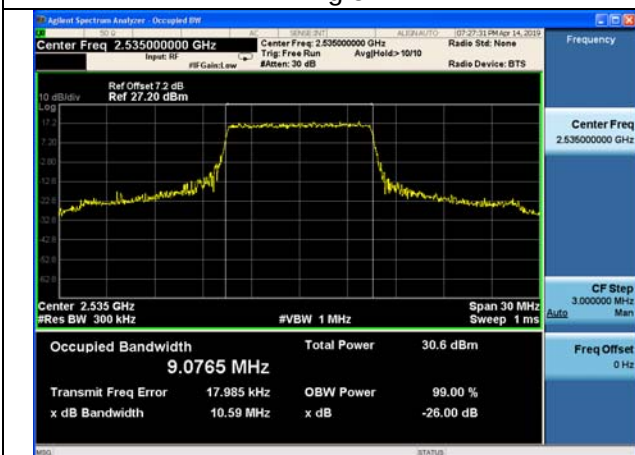


Fig.6

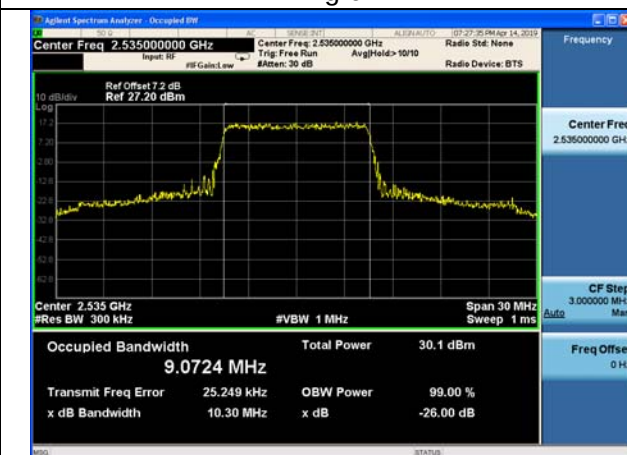


Fig.7

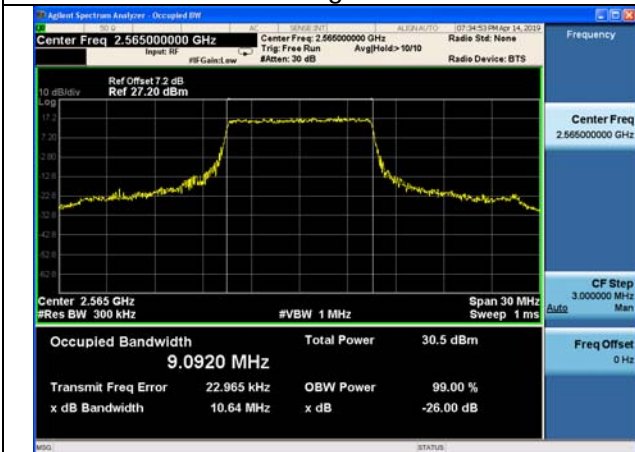


Fig.8

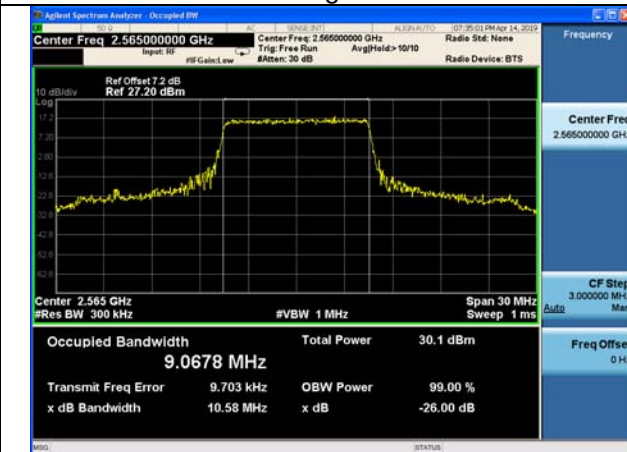
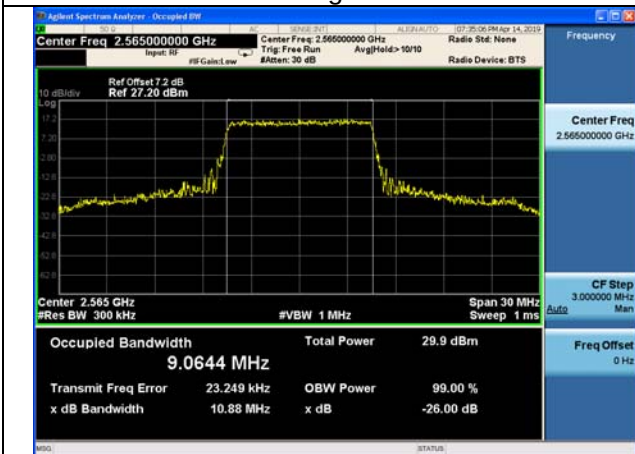


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
7	2507.5	20825	15	75	0	13.489	Fig.1	13.488	Fig.2	13.435	Fig.3
7	2535	21100	15	75	0	13.482	Fig.4	13.478	Fig.5	13.473	Fig.6
7	2562.5	21375	15	75	0	13.503	Fig.7	13.501	Fig.8	13.494	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	15.11	Fig.1	15.11	Fig.2	15.01	Fig.3
7	2535	21100	15	75	0	15.12	Fig.4	15.06	Fig.5	15.05	Fig.6
7	2562.5	21375	15	75	0	15.26	Fig.7	15.12	Fig.8	14.94	Fig.9

Fig.1

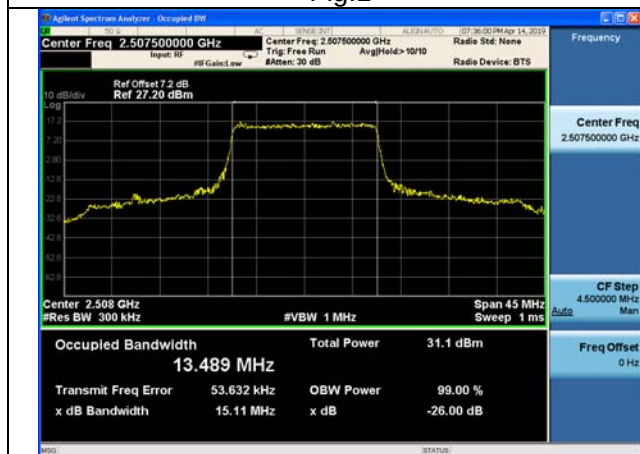


Fig.2

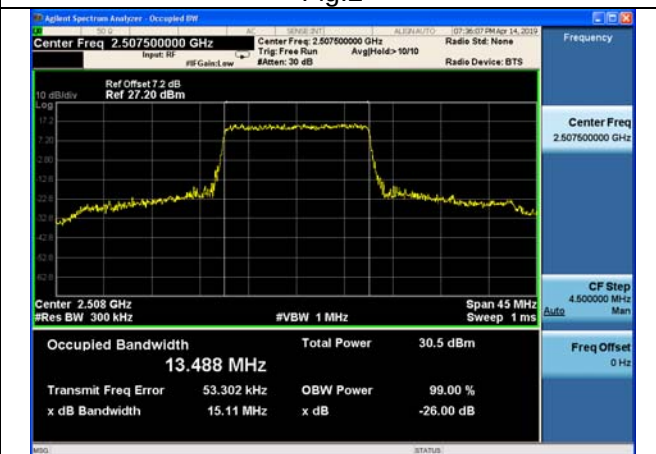


Fig.3

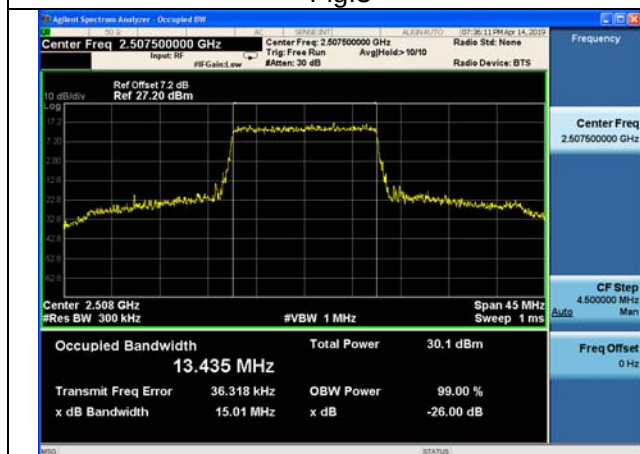


Fig.4

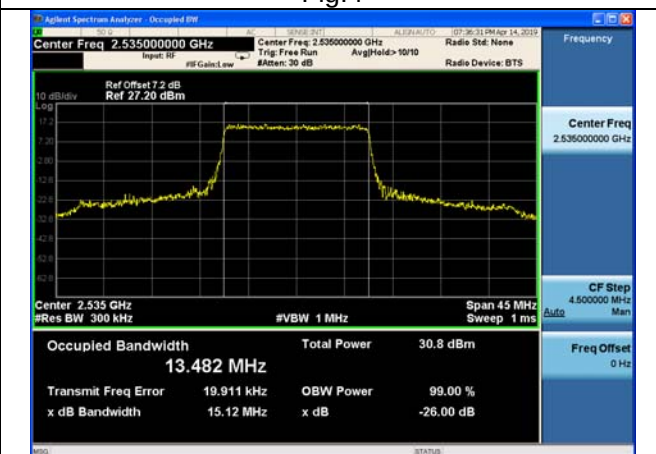


Fig.5

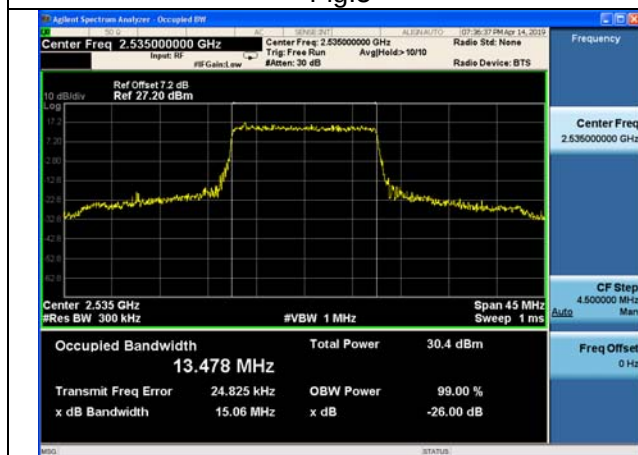


Fig.6

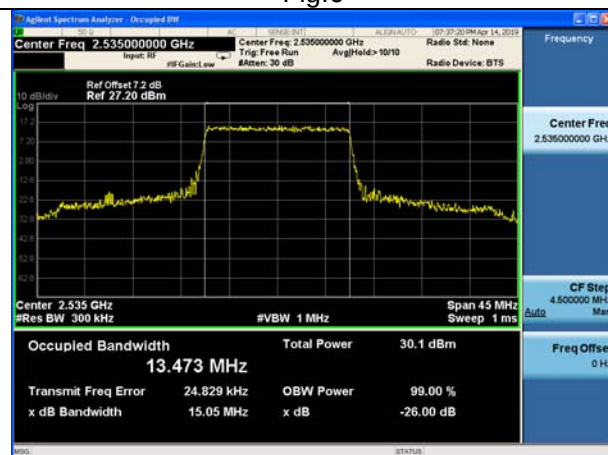


Fig.7

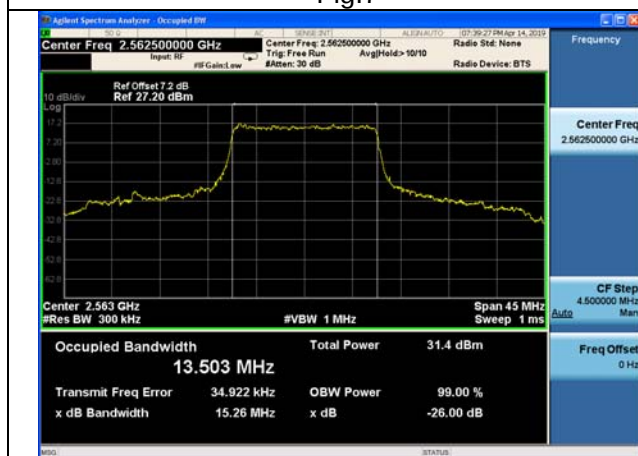


Fig.8

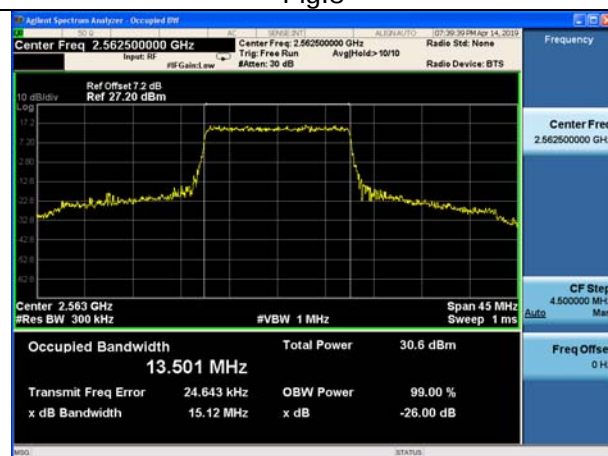
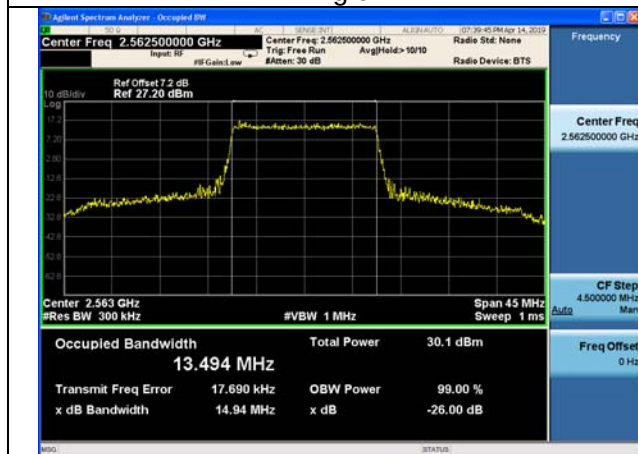


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
7	2510	20850	20	100	0	18.069	Fig.1	18.077	Fig.2	18.043	Fig.3
7	2535	21100	20	100	0	18.090	Fig.4	18.096	Fig.5	18.074	Fig.6
7	2560	21350	20	100	0	18.104	Fig.7	18.072	Fig.8	18.101	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	20.31	Fig.1	20.55	Fig.2	20.17	Fig.3
7	2535	21100	20	100	0	20.11	Fig.4	19.91	Fig.5	20.06	Fig.6
7	2560	21350	20	100	0	20.84	Fig.7	20.67	Fig.8	19.89	Fig.9

Fig.1

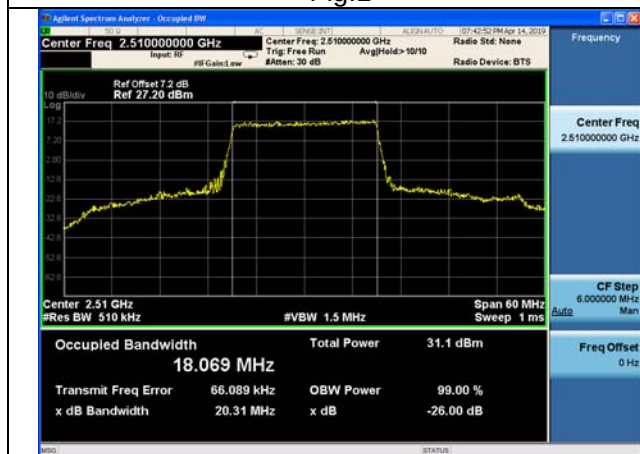


Fig.2

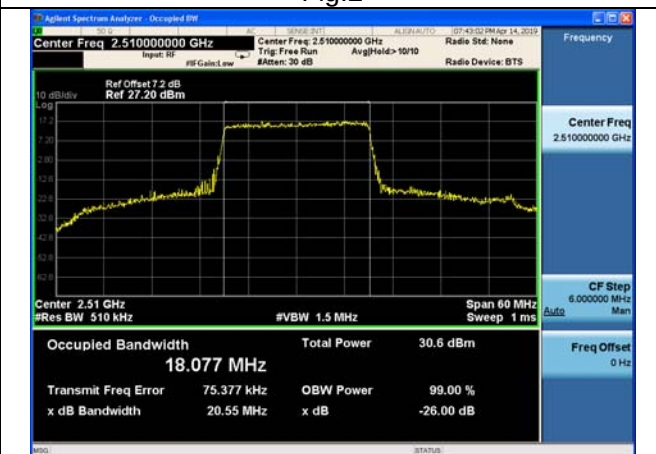


Fig.3

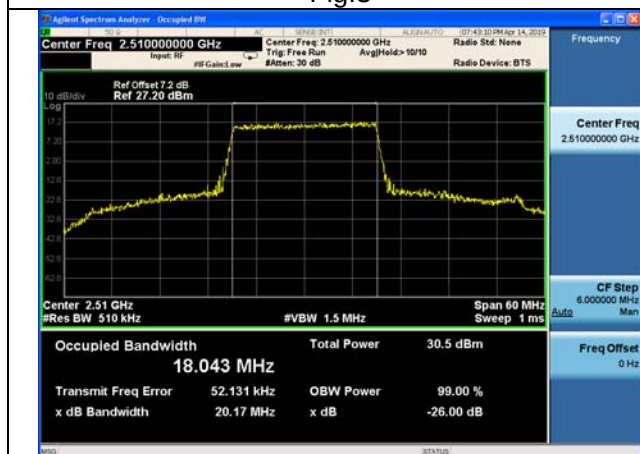


Fig.4

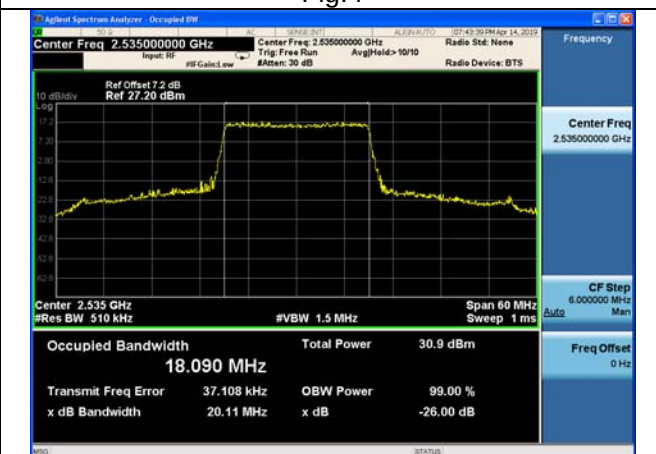


Fig.5

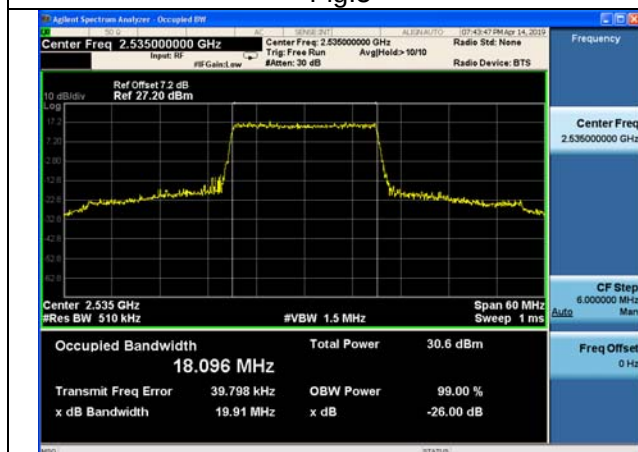


Fig.6

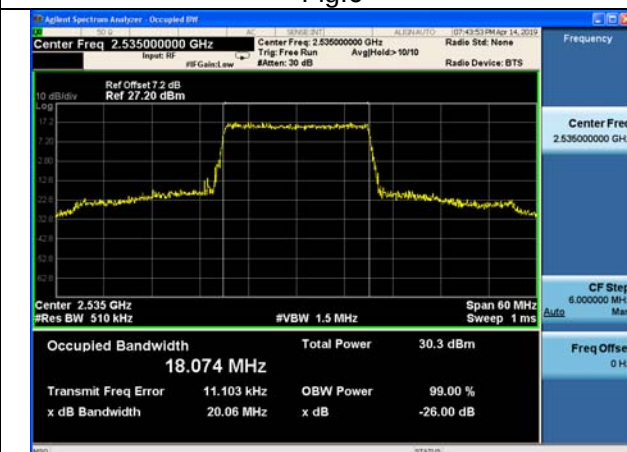


Fig.7

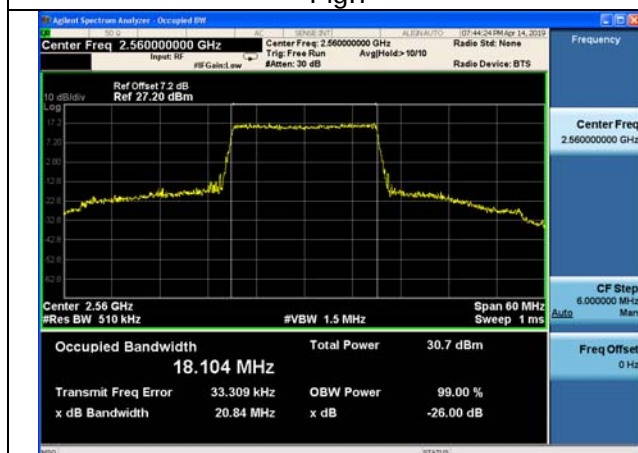


Fig.8

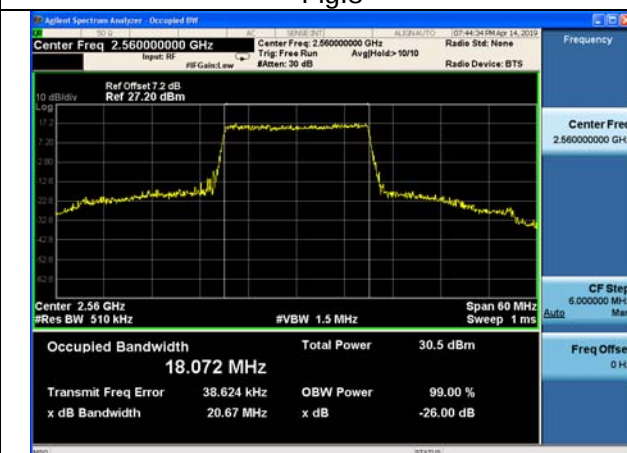
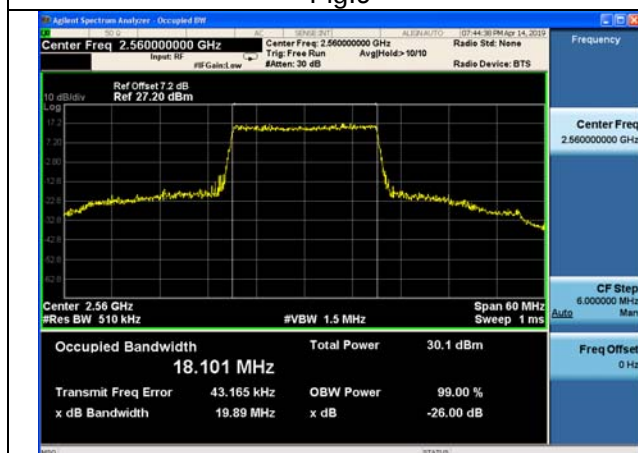
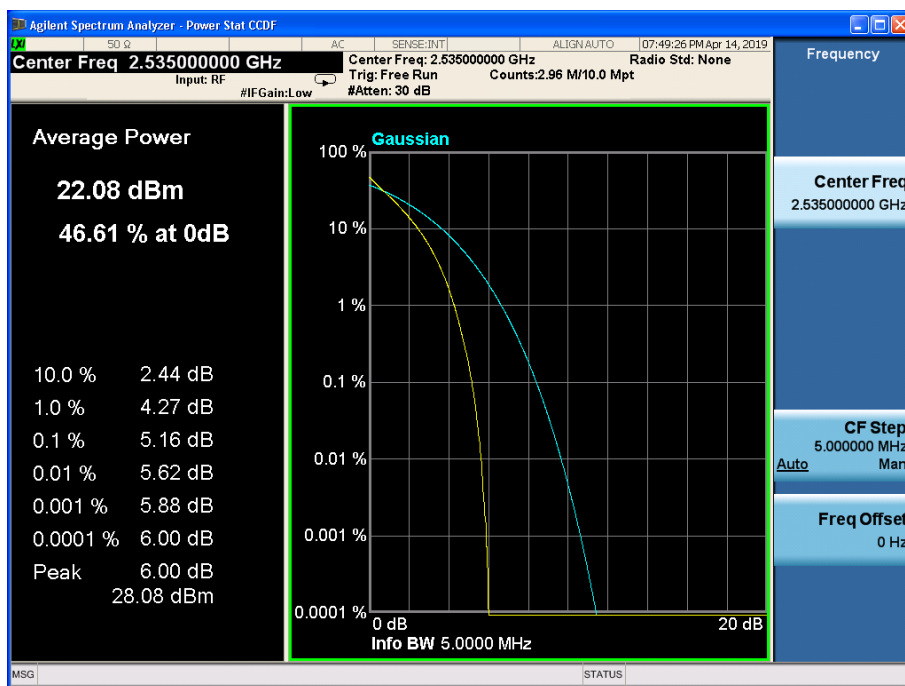


Fig.9

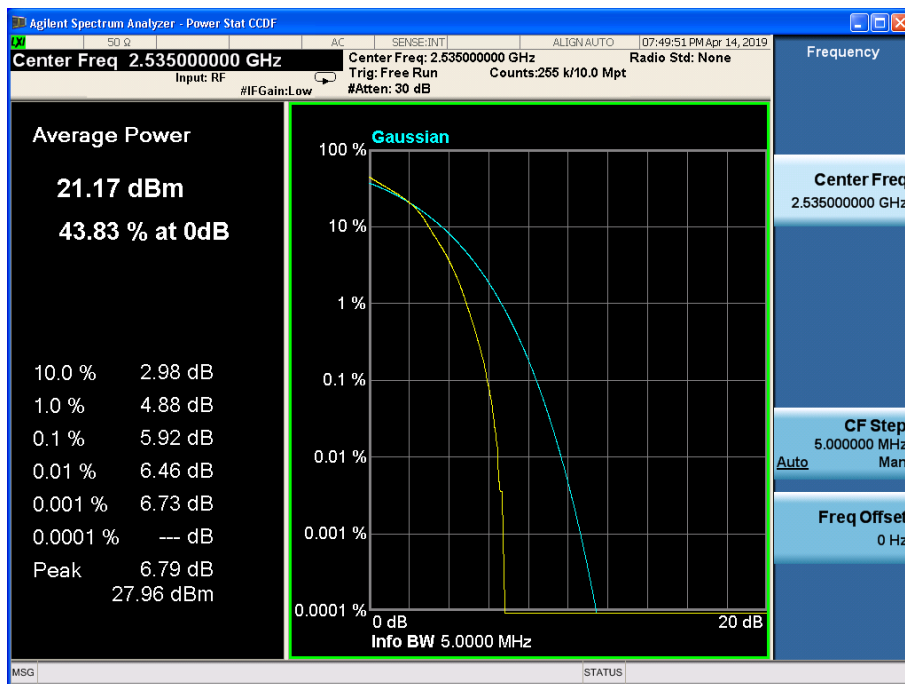


3 Peak-Average Ratio

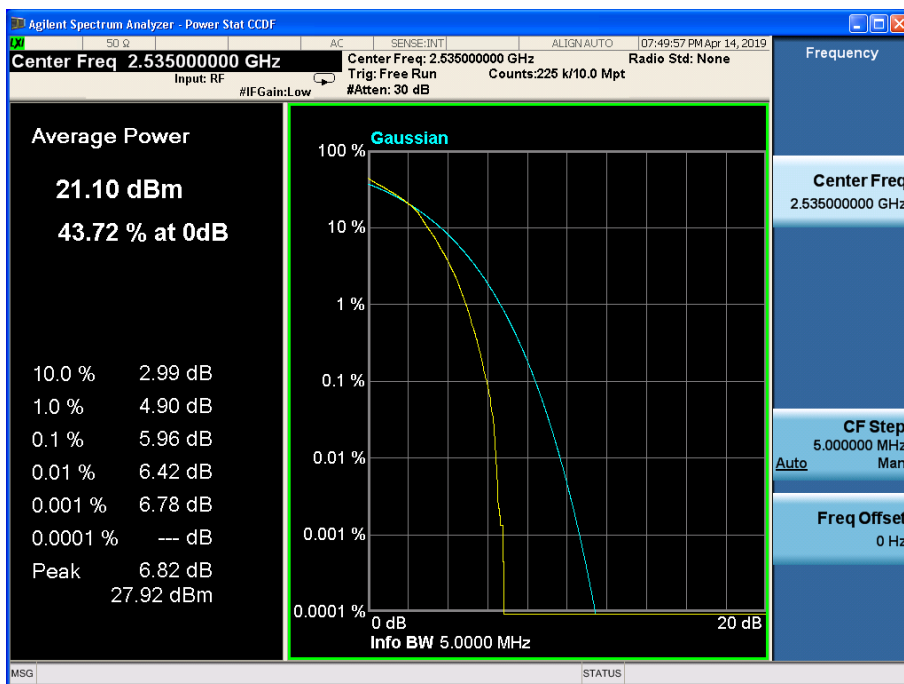
Test result:



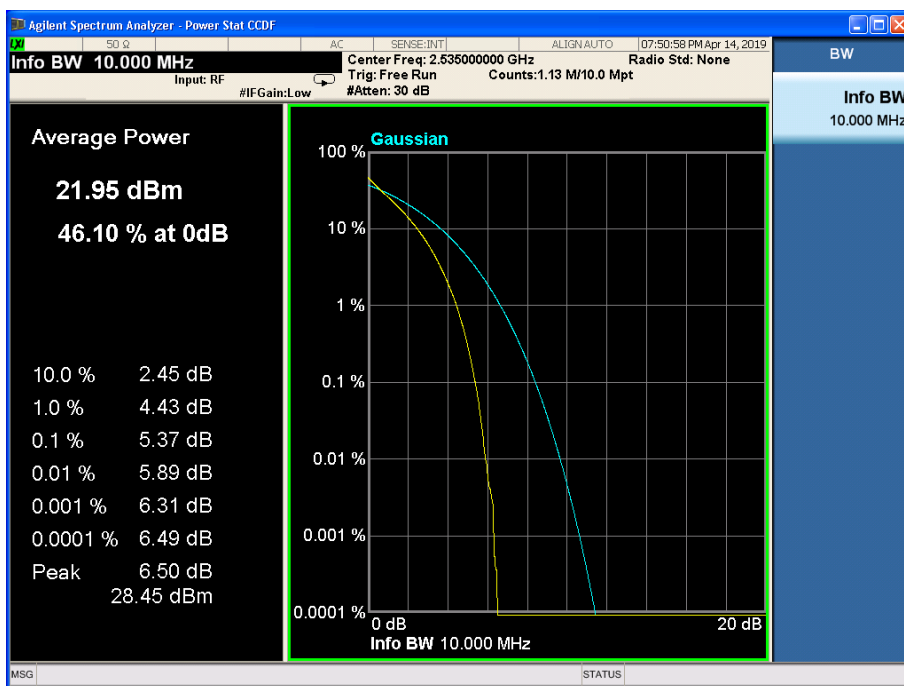
Peak-Average Ratio Plot(5MHz BW,QPSK,Band 7-mid Channel)



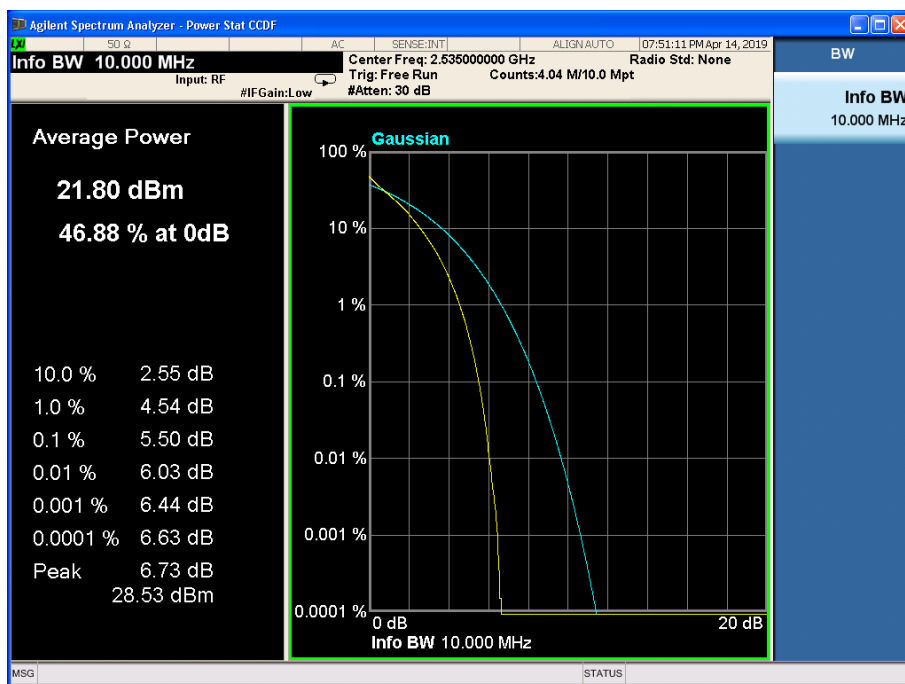
Peak-Average Ratio Plot(5MHz BW,16QAM,Band 7-mid Channel)



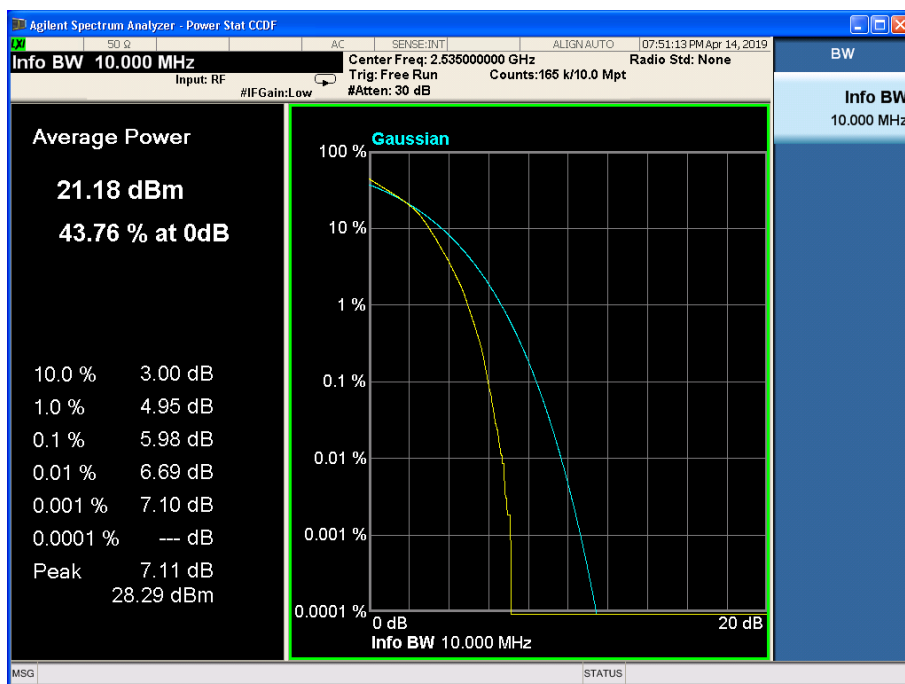
Peak-Average Ratio Plot(5MHz BW,64QAM,Band 7-mid Channel)



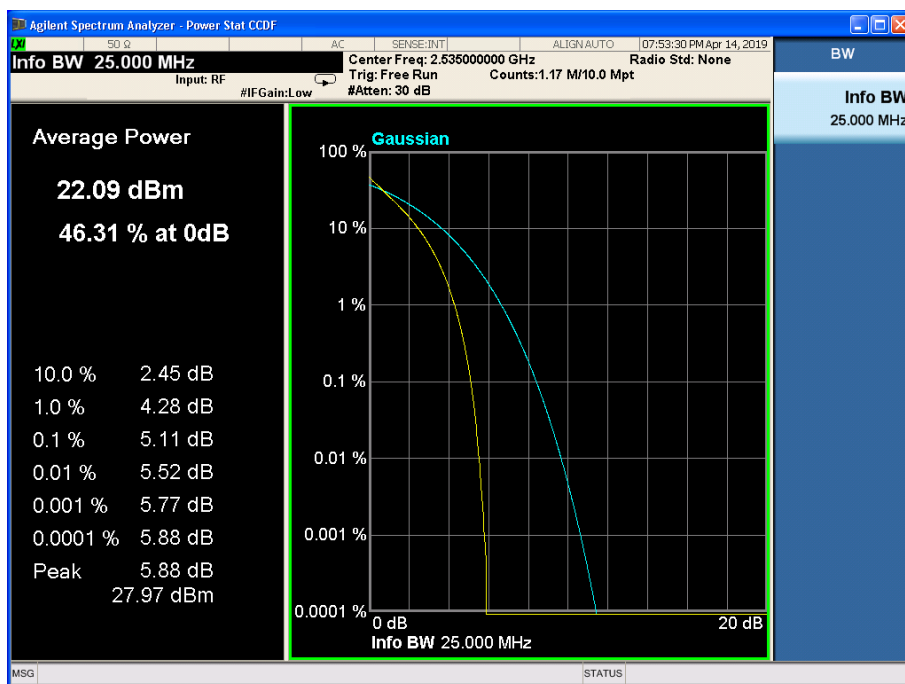
Peak-Average Ratio Plot(10MHz BW,QPSK,Band 7-mid Channel)



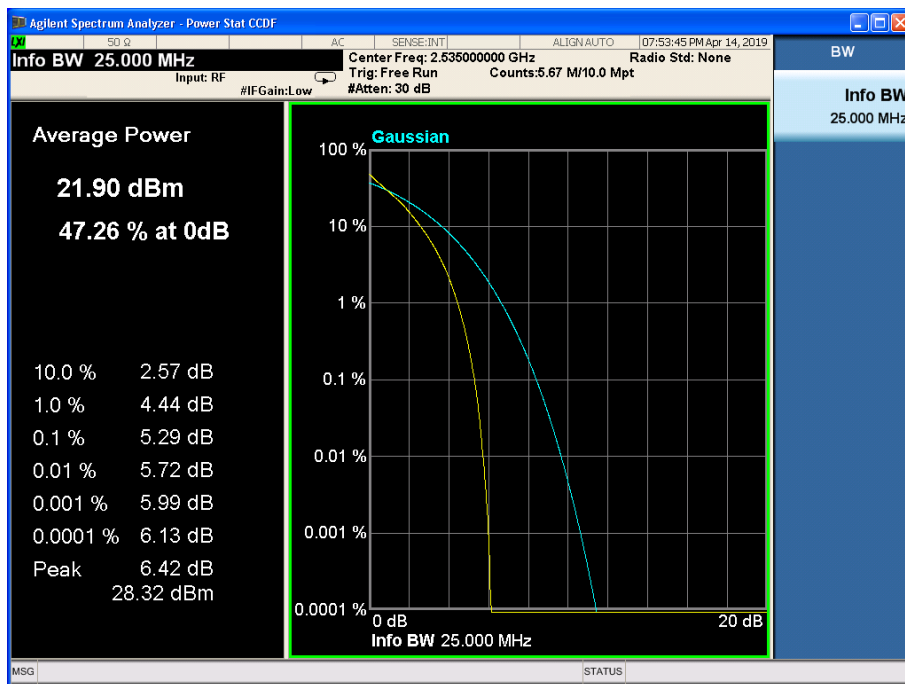
Peak-Average Ratio Plot(10MHz BW,16QAM,Band 7-mid Channel)



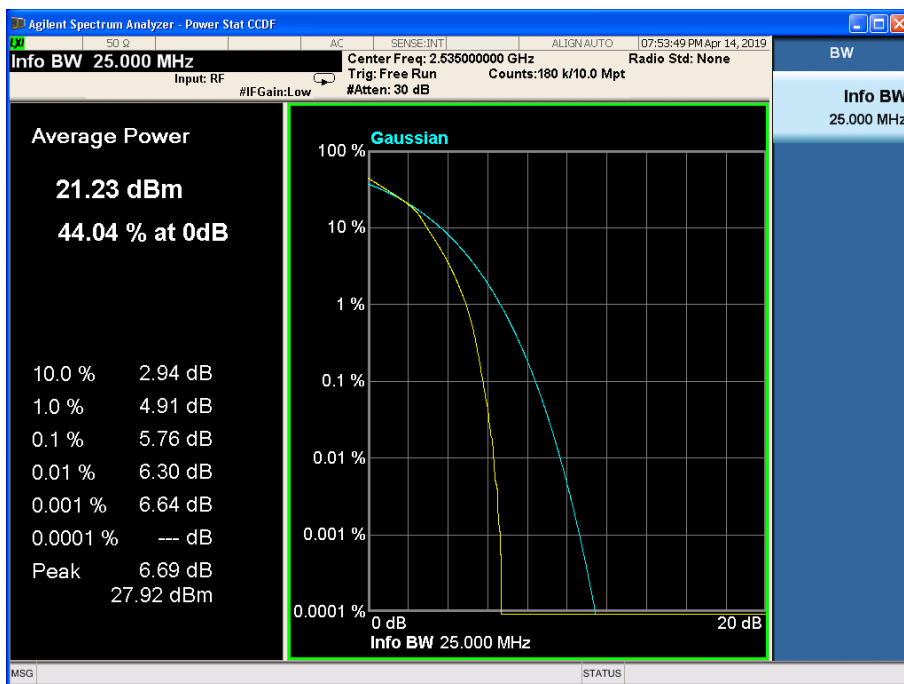
Peak-Average Ratio Plot(10MHz BW,64QAM,Band 7-mid Channel)



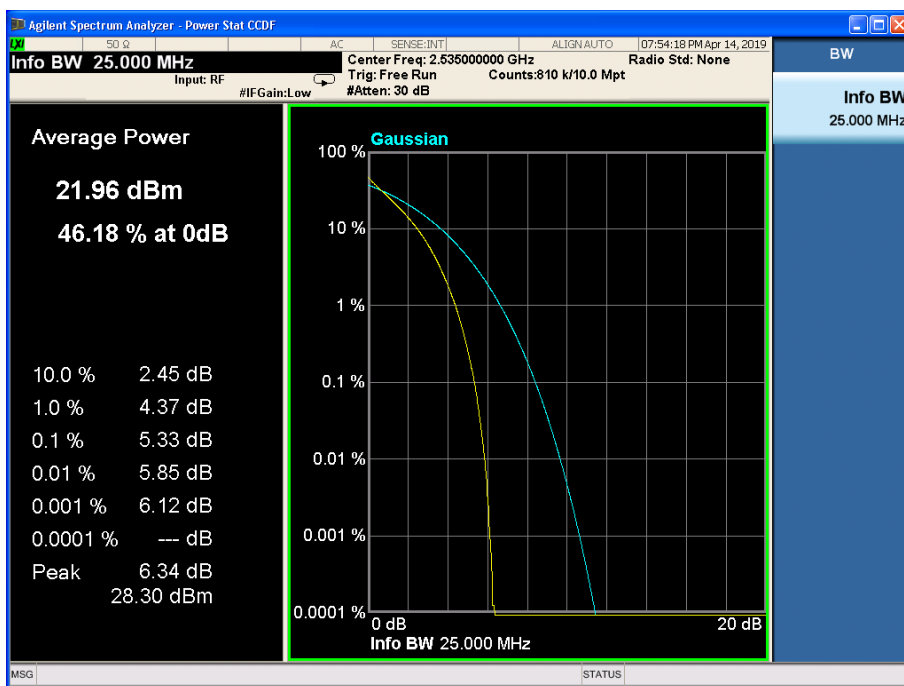
Peak-Average Ratio Plot(15MHz BW,QPSK,Band 7-mid Channel)



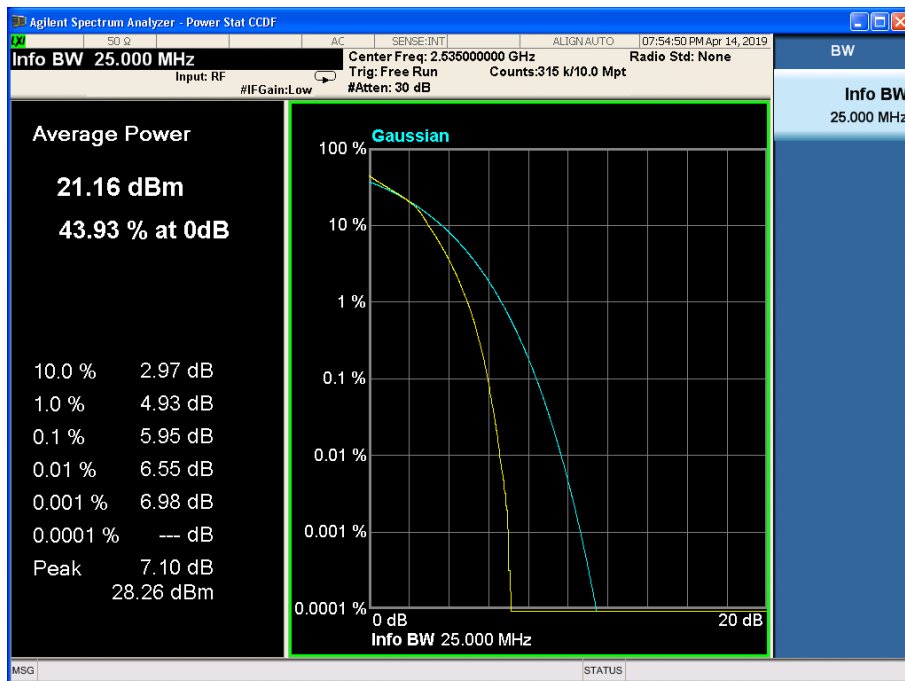
Peak-Average Ratio Plot(15MHz BW,16QAM,Band 7-mid Channel)



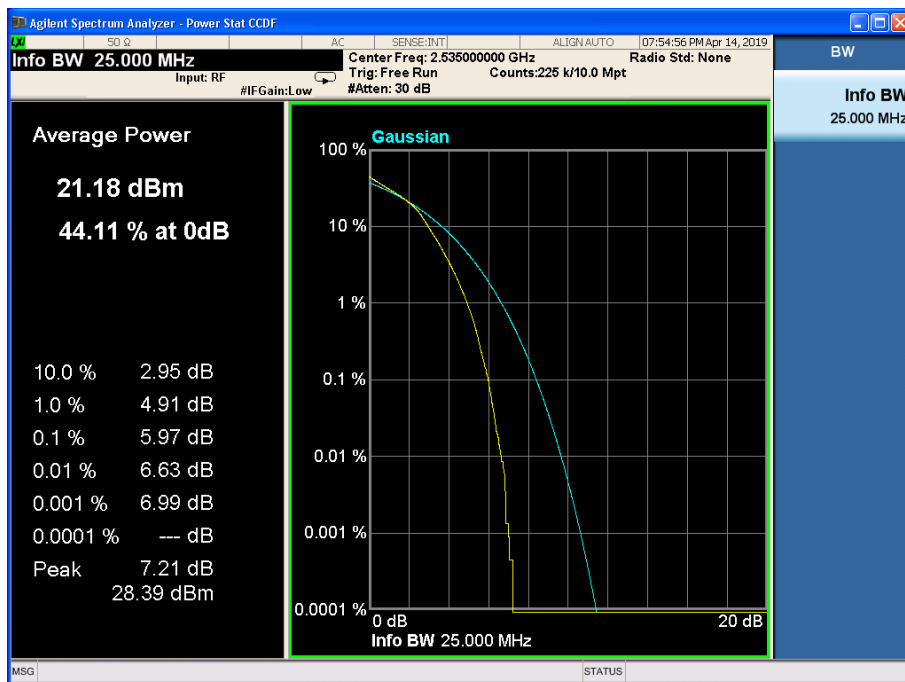
Peak-Average Ratio Plot(15MHz BW,64QAM,Band 7-mid Channel)



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

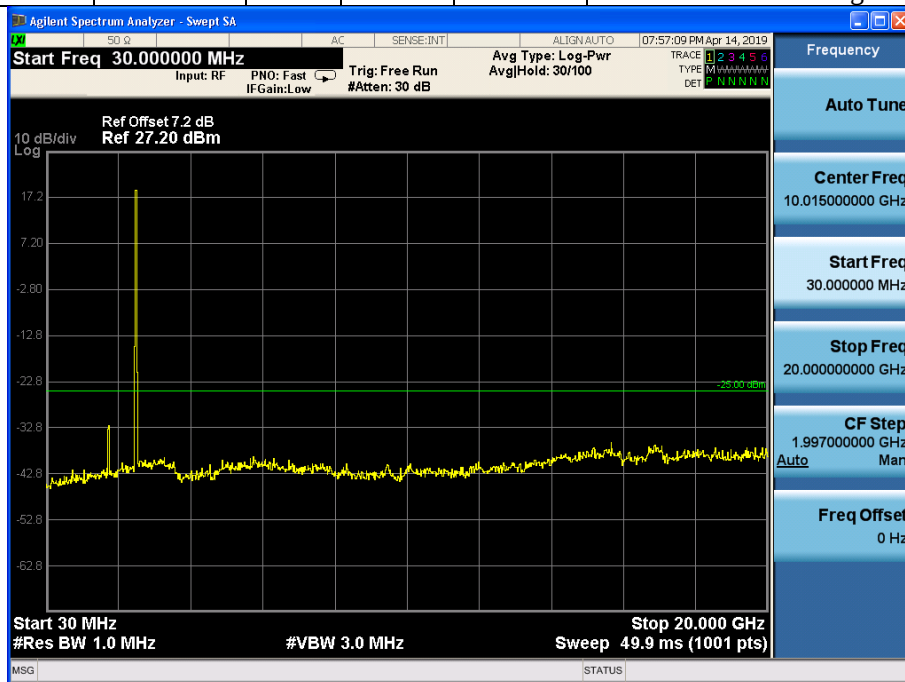


Fig.4

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

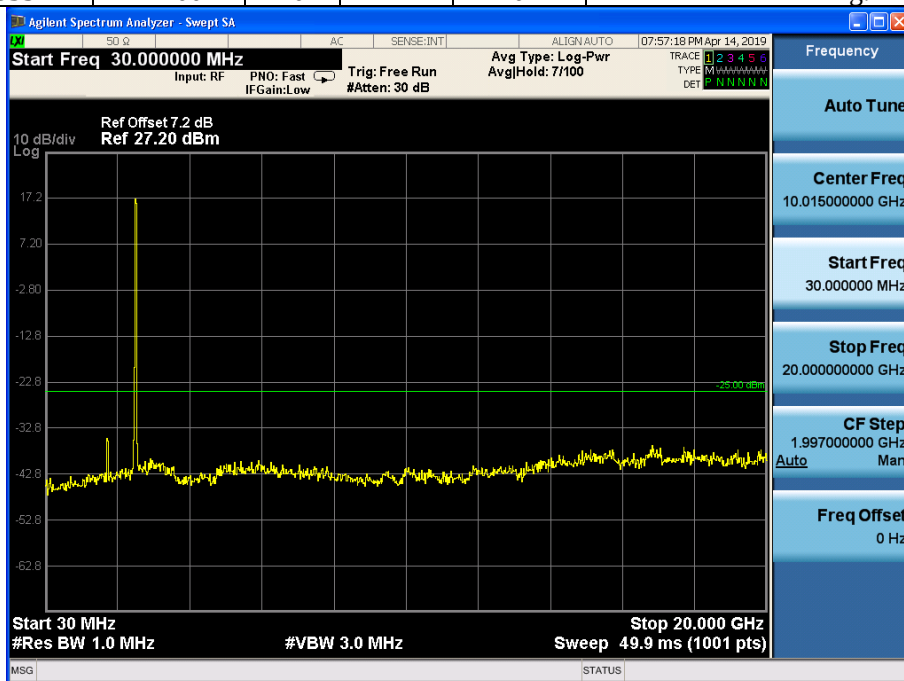


Fig.1

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

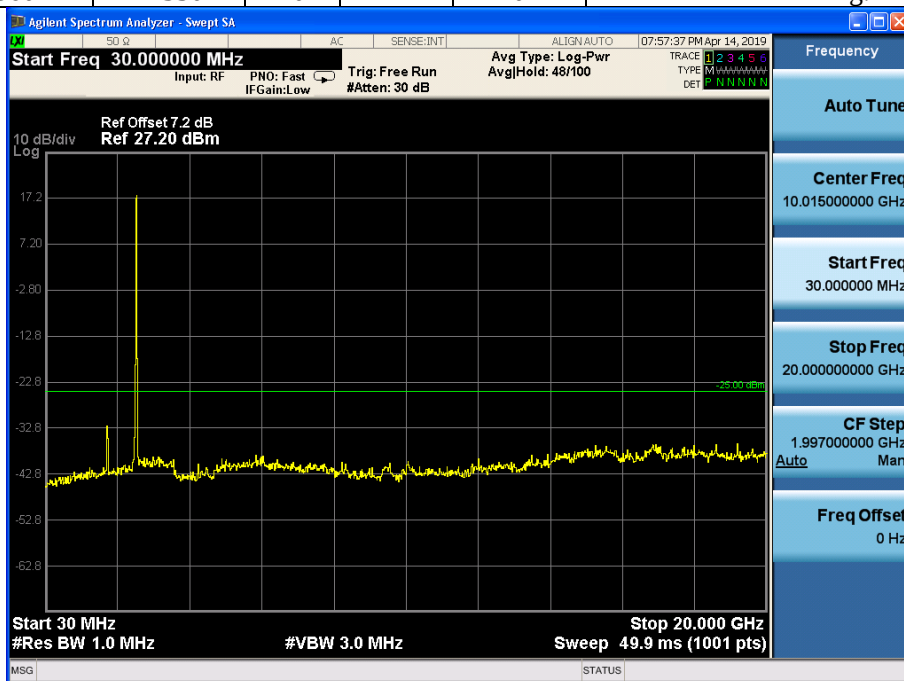


Fig.1

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

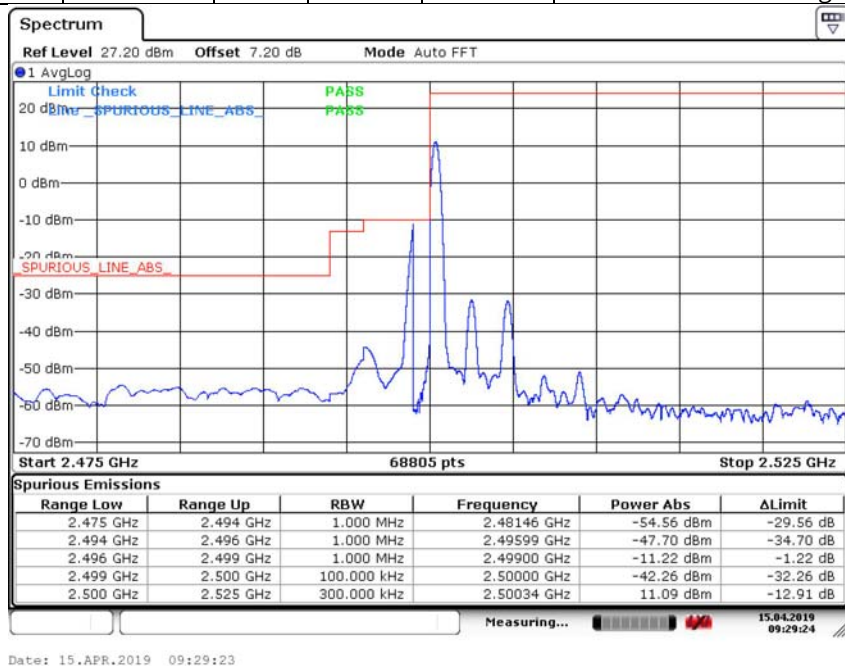


Fig.1

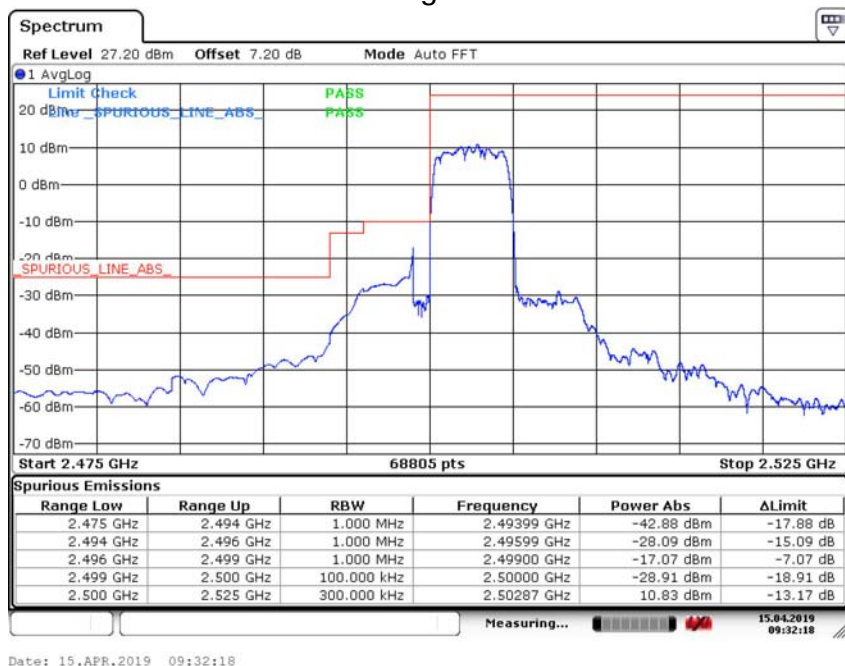


Fig.2

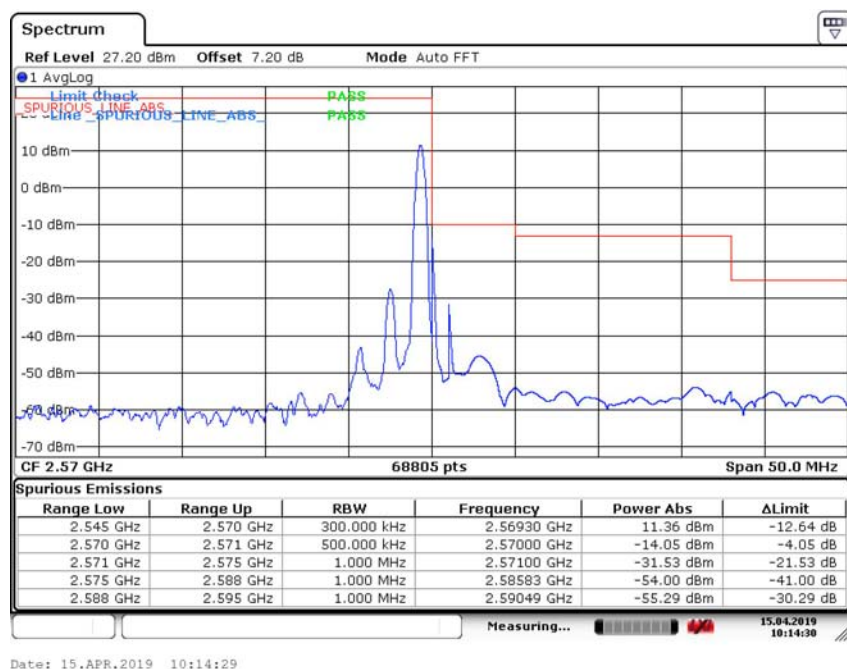


Fig.3

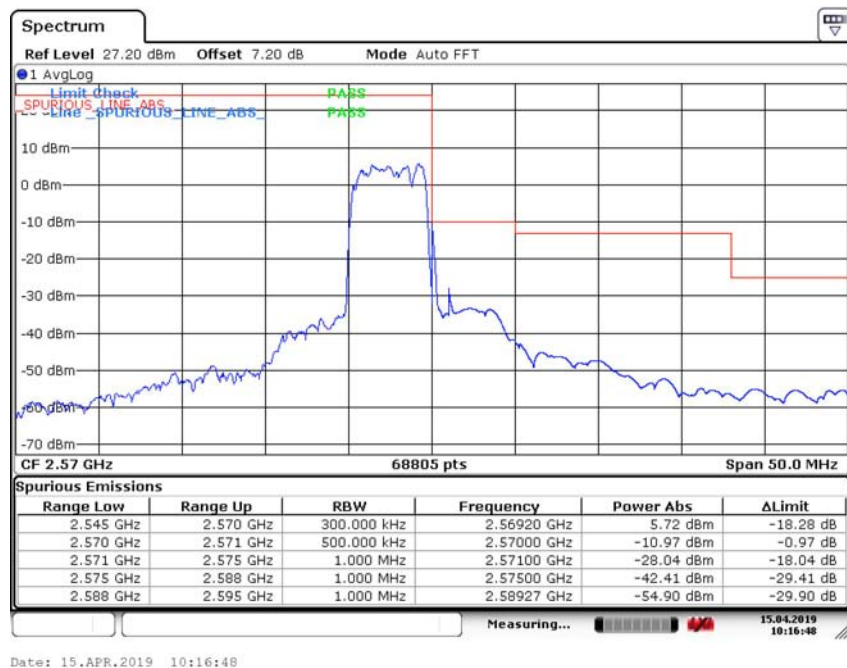


Fig.4

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

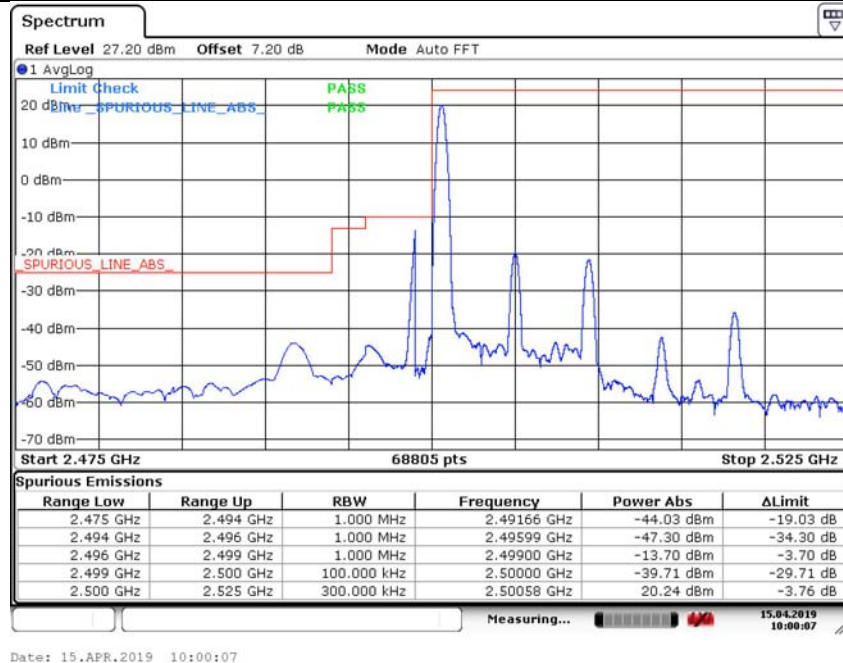


Fig.1

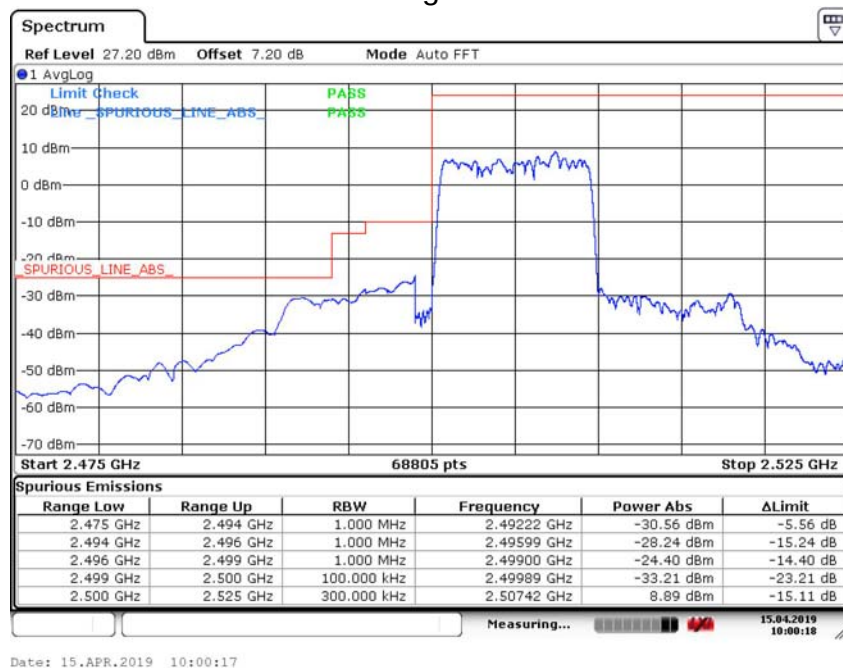


Fig.2

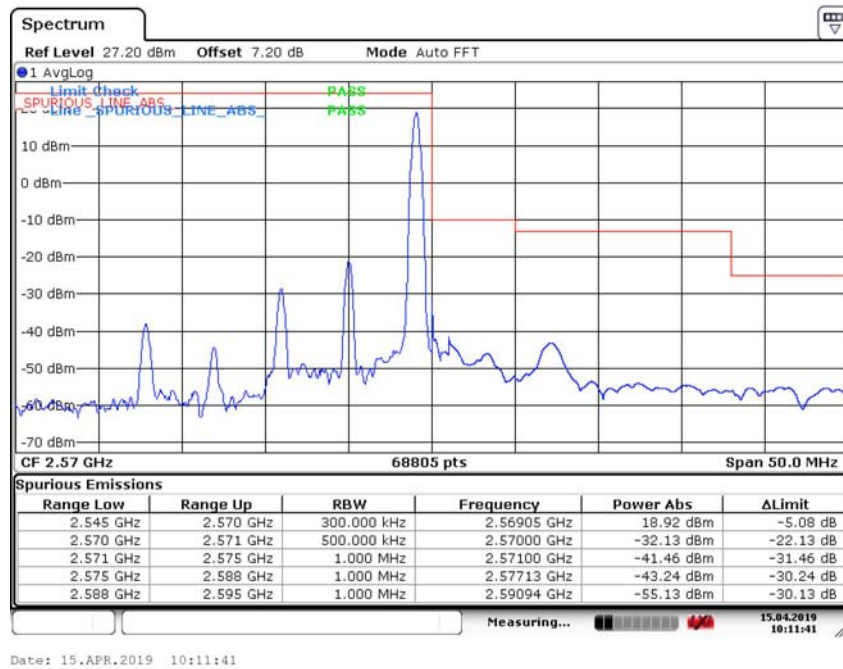


Fig.3

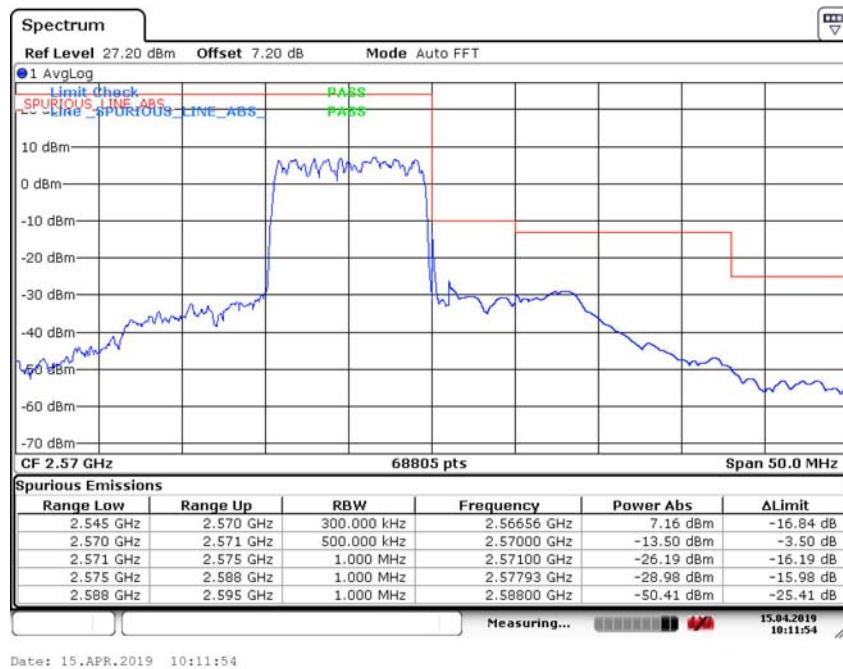


Fig.4

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

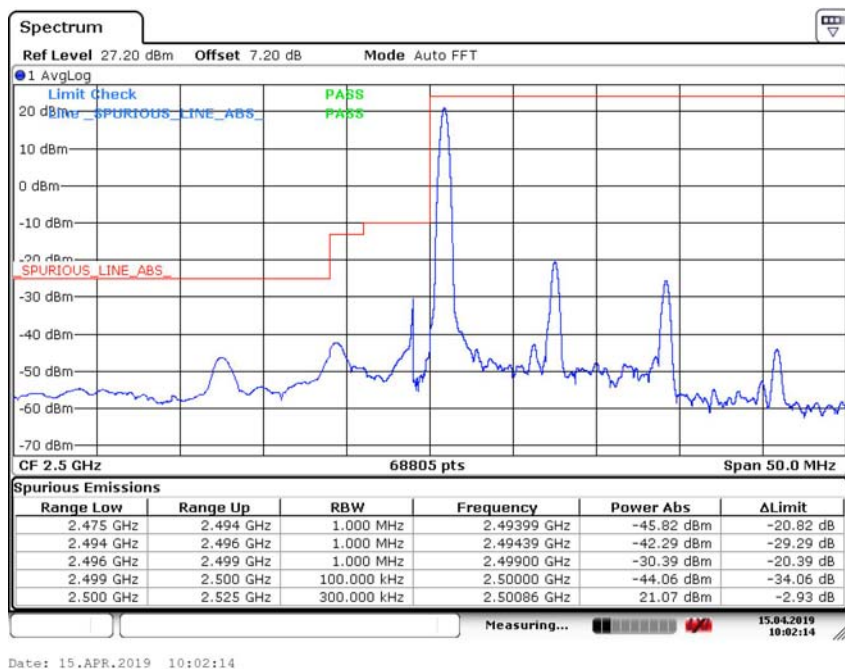


Fig.1

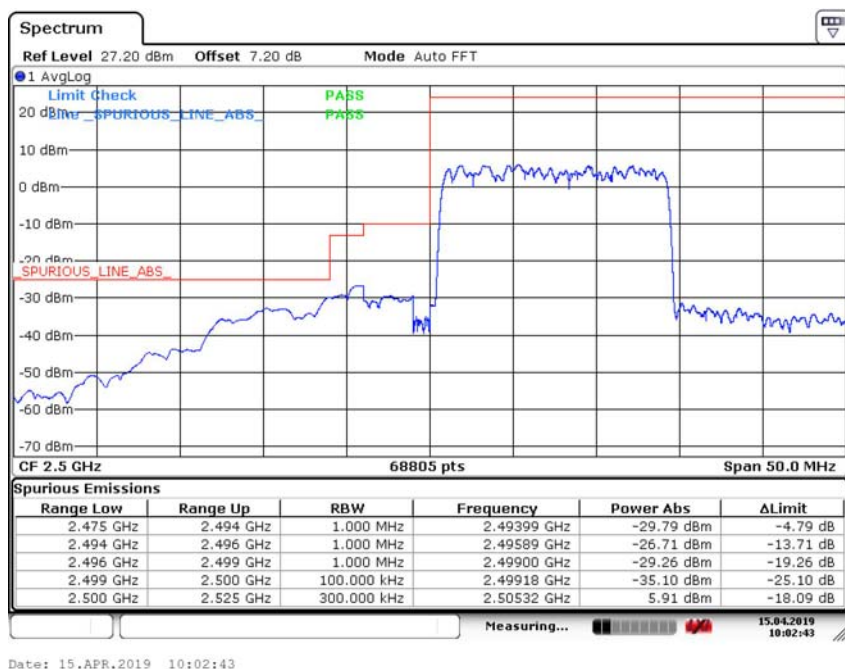


Fig.2

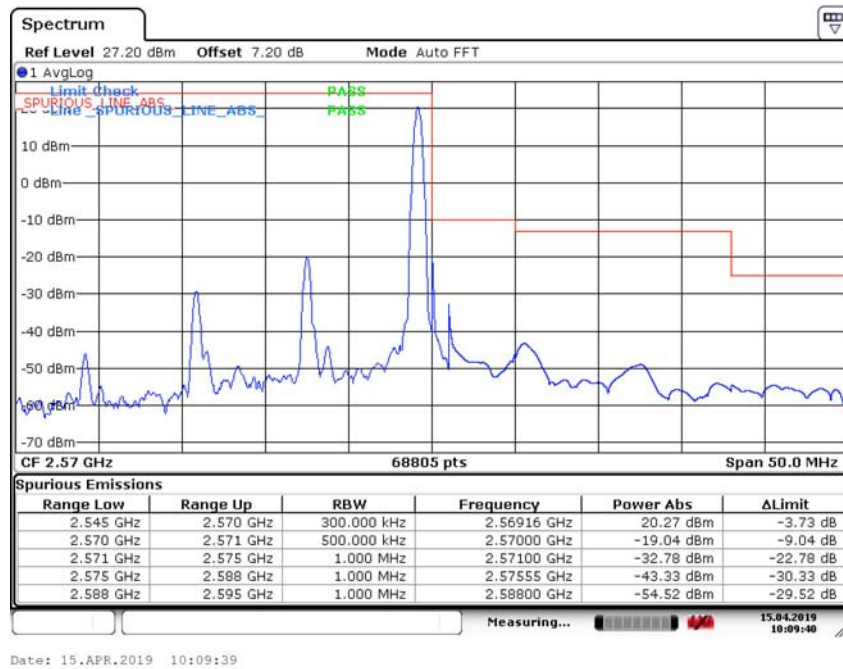


Fig.3

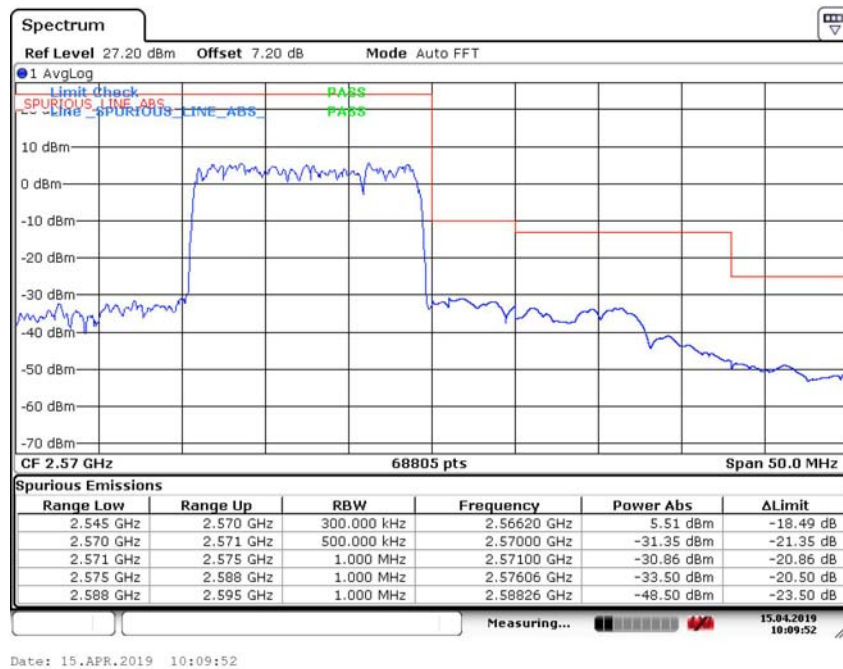


Fig.4

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

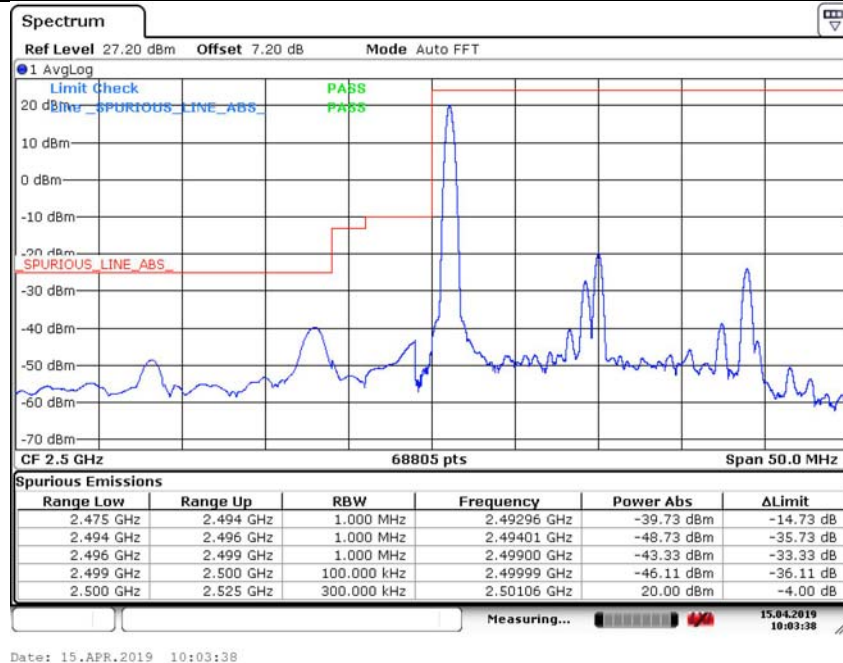


Fig.1

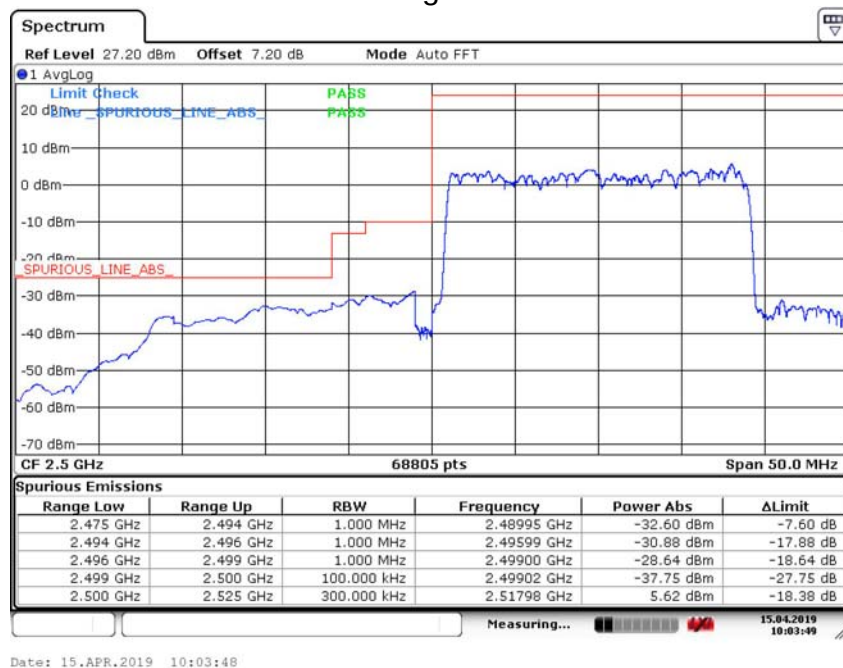


Fig.2

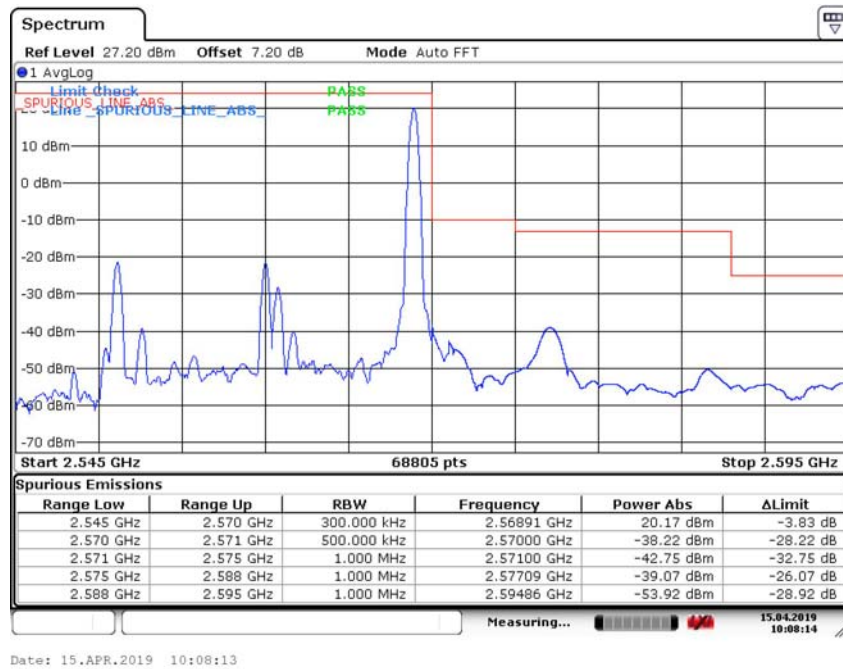


Fig.3

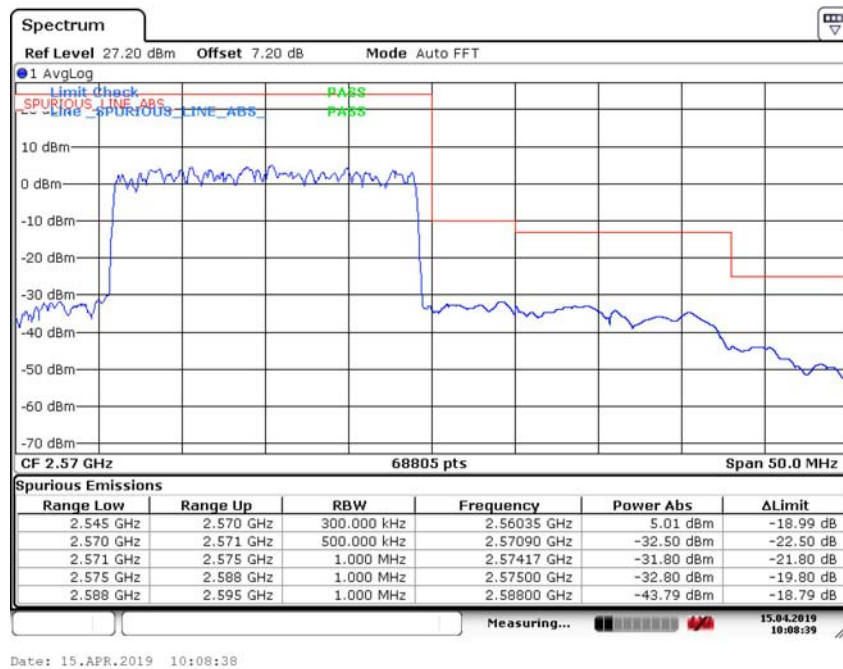


Fig.4

6 Frequency Stability

Test result:

Temperature(°C)	Voltage	Test Result (ppm) Band7 Low Channel			
		5M	10M	15M	20M
0	NV	0.021	-0.008	0.011	-0.002
+10	NV	0.018	-0.023	0.007	0.009
+20	NV	0.022	-0.021	-0.009	-0.008
+30	NV	-0.007	-0.002	0.014	-0.006
+40	NV	-0.005	-0.003	-0.014	-0.015
+50	NV	-0.010	-0.002	0.000	-0.005
+55	NV	-0.007	-0.011	-0.002	-0.003
+20	LV	0.008	0.013	-0.001	0.010
+20	HV	-0.025	-0.002	-0.002	-0.014

Temperature(°C)	Voltage	Test Result (ppm) Band7 High Channel			
		5M	10M	15M	20M
0	NV	-0.006	-0.006	-0.002	0.002
+10	NV	-0.016	-0.007	-0.013	-0.012
+20	NV	0.020	-0.012	-0.008	-0.010
+30	NV	0.020	-0.003	0.002	-0.010
+40	NV	-0.015	-0.015	-0.002	0.009
+50	NV	-0.020	-0.013	-0.015	-0.014
+55	NV	0.022	0.006	-0.009	0.002
+20	LV	-0.002	0.011	0.011	0.003
+20	HV	0.017	0.011	0.008	0.005