

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

LTE Band 41

1 RF Power Output

Test result: Antenna Gain: 2.82dBi

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	2498.5	39675	5	1	0	25.5	28.32
				1	24	25.4	28.22
				12	6	24.5	27.32
				25	0	24.4	27.22
	2593	40620		1	0	25.5	28.32
				1	24	25.4	28.22
				12	6	24.5	27.32
				25	0	24.4	27.22
	2687.5	41565		1	0	25.7	28.52
				1	24	25.6	28.42
				12	6	24.5	27.32
				25	0	24.4	27.22

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	2498.5	39675	5	1	0	25.2	28.02
				1	24	25.2	28.02
				12	6	23.7	26.52
				25	0	23.5	26.32
	2593	40620		1	0	24.9	27.72
				1	24	24.8	27.62
				12	6	23.7	26.52
				25	0	23.5	26.32
	2687.5	41565		1	0	24.9	27.72
				1	24	24.9	27.72
				12	6	23.7	26.52
				25	0	23.5	26.32

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	2498.5	39675	5	1	0	25.4	28.22
				1	24	25.4	28.22
				12	6	23.5	26.32
				25	0	23.4	26.22
	2593	40620		1	0	25.4	28.22
				1	24	25.4	28.22
				12	6	23.5	26.32
				25	0	23.4	26.22
	2687.5	41565		1	0	25.4	28.22
				1	24	25.4	28.22
				12	6	23.5	26.32
				25	0	23.4	26.22

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	2501	39700	10	1	0	25.4	28.22
				1	49	25.3	28.12
				24	12	24.4	27.22
				50	0	24.4	27.22
	2593	40620		1	0	25.4	28.22
				1	49	25.3	28.12
				24	12	24.4	27.22
				50	0	24.4	27.22
	2685	41540		1	0	25.4	28.22
				1	49	25.3	28.12
				24	12	24.4	27.22
				50	0	24.4	27.22

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	2501	39700	10	1	0	24.8	27.62
				1	49	24.8	27.62
				24	12	23.4	26.22
				50	0	23.5	26.32
	2593	40620		1	0	24.8	27.62
				1	49	24.8	27.62
				24	12	23.4	26.22
				50	0	23.5	26.32
	2685	41540		1	0	24.8	27.62
				1	49	24.8	27.62
				24	12	23.4	26.22
				50	0	23.5	26.32

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	2501	39700	10	1	0	25.4	28.22
				1	49	25.3	28.12
				24	12	23.4	26.22
				50	0	23.3	26.12
	2593	40620		1	0	25.4	28.22
				1	49	25.3	28.12
				24	12	23.4	26.22
				50	0	23.3	26.12
	2685	41540		1	0	25.4	28.22
				1	49	25.3	28.12
				24	12	23.4	26.22
				50	0	23.3	26.12

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	2503.5	39725	15	1	0	25.7	28.52
				1	74	25.5	28.32
				40	18	24.6	27.42
				75	0	24.6	27.42
	2593	40620		1	0	25.7	28.52
				1	74	25.5	28.32
				40	18	24.6	27.42
				75	0	24.6	27.42
	2682.5	41515		1	0	25.7	28.52
				1	74	25.5	28.32
				40	18	24.6	27.42
				75	0	24.6	27.42

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	2503.5	39725	15	1	0	25.1	27.92
				1	74	24.9	27.72
				40	18	23.6	26.42
				75	0	23.7	26.52
	2593	40620		1	0	25.1	27.92
				1	74	24.9	27.72
				40	18	23.6	26.42
				75	0	23.7	26.52
	2682.5	41515		1	0	25.1	27.92
				1	74	24.9	27.72
				40	18	23.6	26.42
				75	0	23.7	26.52

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	2503.5	39725	15	1	0	25.6	28.42
				1	74	25.5	28.32
				40	18	23.6	26.42
				75	0	23.7	26.52
	2593	40620		1	0	25.6	28.42
				1	74	25.5	28.32
				40	18	23.6	26.42
				75	0	23.7	26.52
	2682.5	41515		1	0	25.6	28.42
				1	74	25.5	28.32
				40	18	23.6	26.42
				75	0	23.7	26.52

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
QPSK	2506	39750	20	1	0	25.8	28.62
				1	99	25.6	28.42
				50	25	24.6	27.42
				100	0	24.6	27.42
	2593	40620		1	0	25.8	28.62
				1	99	25.6	28.42
				50	25	24.6	27.42
				100	0	24.6	27.42
	2680	41490		1	0	25.9	28.72
				1	99	25.8	28.62
				50	25	24.6	27.42
				100	0	24.6	27.42

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
16QAM	2506	39750	20	1	0	25.1	27.92
				1	99	25.0	27.82
				50	25	23.7	26.52
				100	0	23.7	26.52
	2593	40620		1	0	25.1	27.92
				1	99	25.0	27.82
				50	25	23.7	26.52
				100	0	23.7	26.52
	2680	41490		1	0	25.3	28.12
				1	99	25.2	28.02
				50	25	23.7	26.52
				100	0	23.7	26.52

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average(dBm)
64QAM	2506	39750	20	1	0	25.4	28.22
				1	99	25.6	28.42
				50	25	23.6	26.42
				100	0	23.6	26.42
	2593	40620		1	0	25.4	28.22
				1	99	25.6	28.42
				50	25	23.6	26.42
				100	0	23.6	26.42
	2680	41490		1	0	25.4	28.22
				1	99	25.6	28.42
				50	25	23.6	26.42
				100	0	23.6	26.42

Occupied Bandwidth

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
41	2498.5	39675	5	25	0	4.465	Fig.1	4.474	Fig.2	4.452	Fig.3
41	2593	40620	5	25	0	4.463	Fig.4	4.478	Fig.5	4.502	Fig.6
41	2687.5	41565	5	25	0	4.488	Fig.7	4.479	Fig.8	4.489	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
41	2498.5	39675	5	25	0	4.774	Fig.1	4.823	Fig.2	4.768	Fig.3
41	2593	40620	5	25	0	4.737	Fig.4	4.773	Fig.5	4.729	Fig.6
41	2687.5	41565	5	25	0	4.733	Fig.7	4.760	Fig.8	4.752	Fig.9

Fig.1

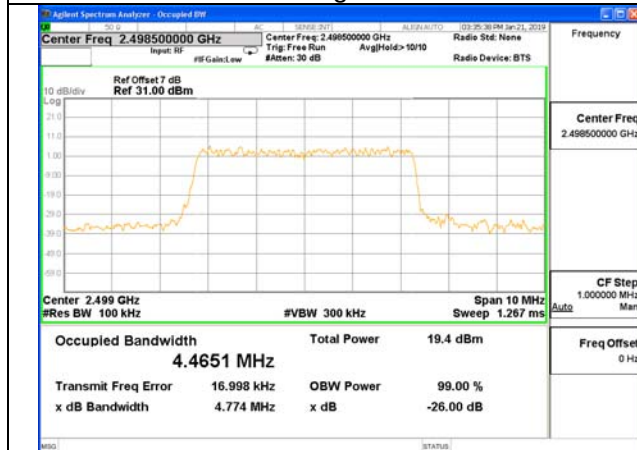


Fig.2

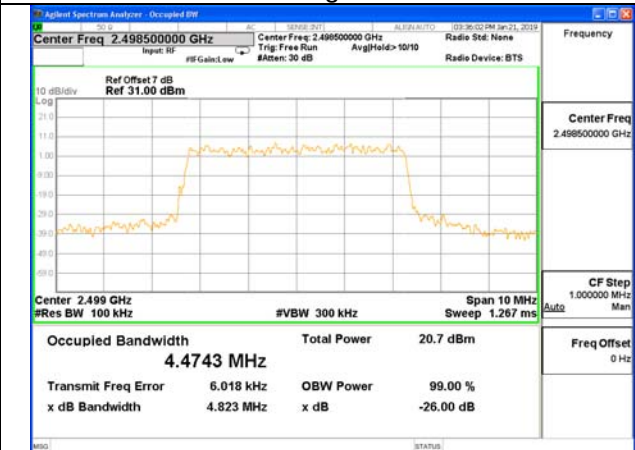


Fig.3

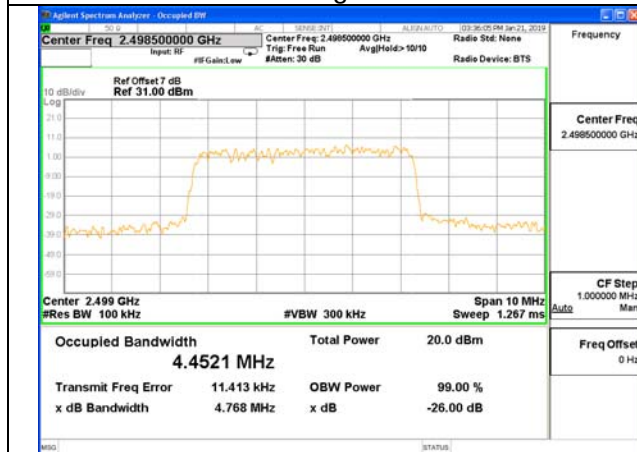


Fig.4

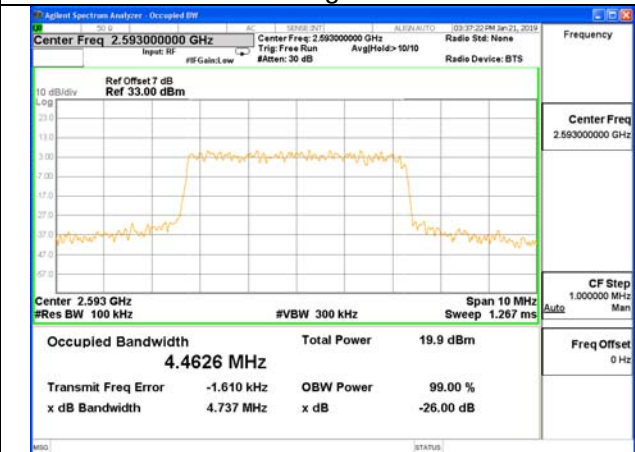


Fig.5

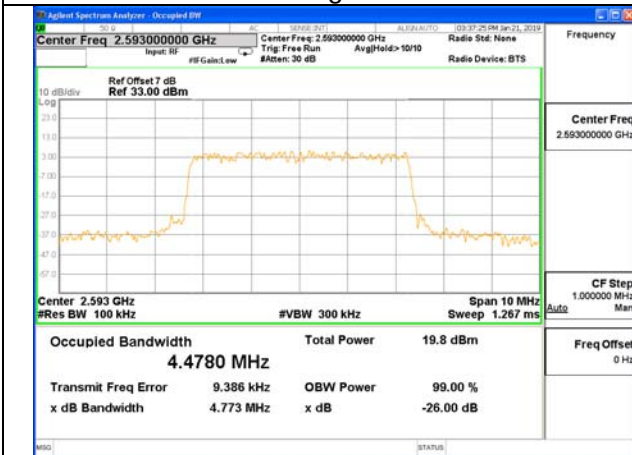


Fig.6

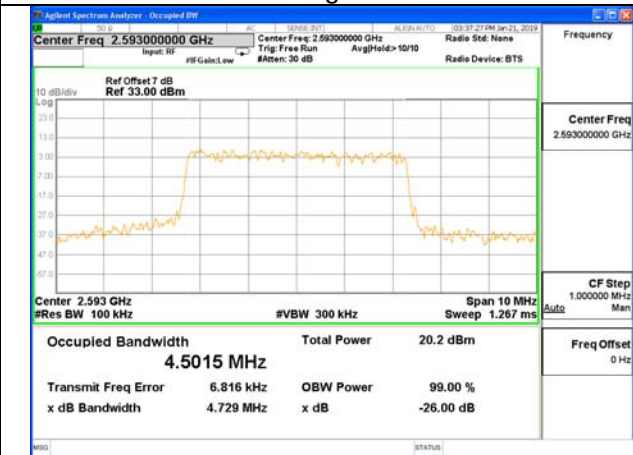


Fig.7

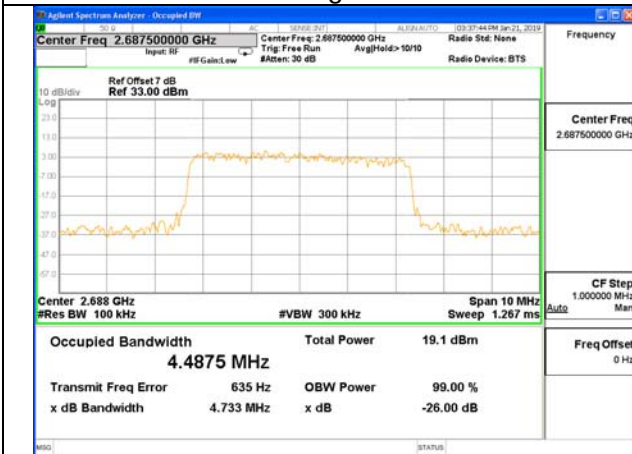


Fig.8

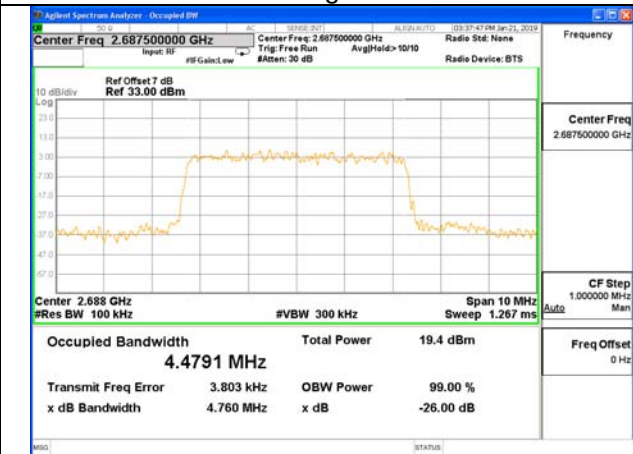
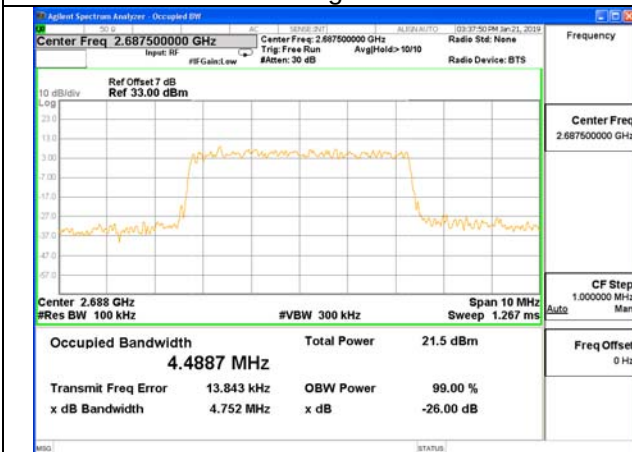


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
41	2501	39700	10	50	0	8.956	Fig.1	9.026	Fig.2	8.974	Fig.3
41	2593	40620	10	50	0	8.968	Fig.4	9.074	Fig.5	9.014	Fig.6
41	2685	41540	10	50	0	9.004	Fig.7	8.956	Fig.8	8.935	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
41	2501	20000	10	50	0	9.607	Fig.1	9.641	Fig.2	9.576	Fig.3
41	2593	20175	10	50	0	9.704	Fig.4	9.695	Fig.5	9.606	Fig.6
41	2685	20350	10	50	0	9.607	Fig.7	9.639	Fig.8	9.610	Fig.9

Fig.1

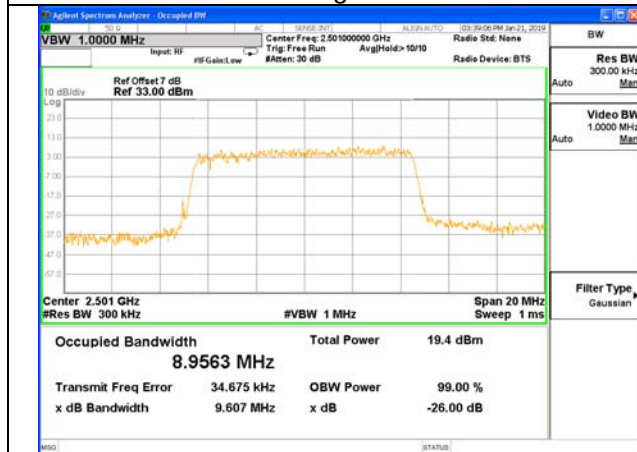


Fig.2

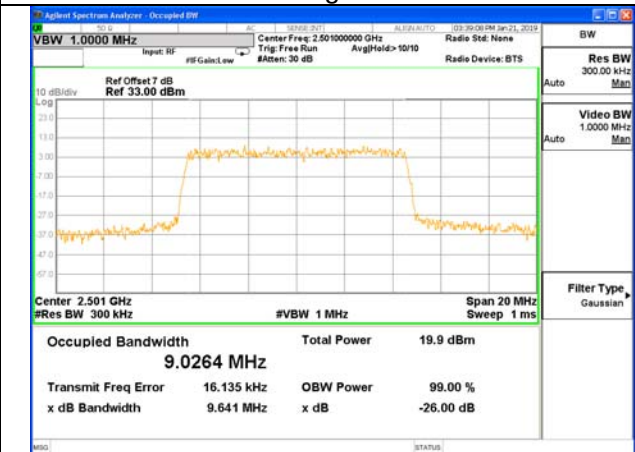


Fig.3

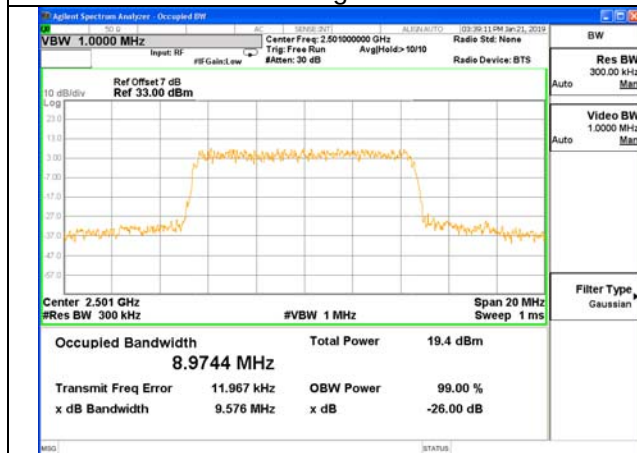


Fig.4

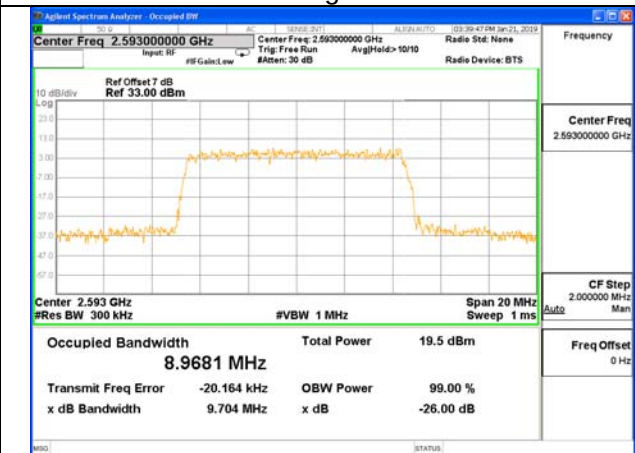


Fig.5

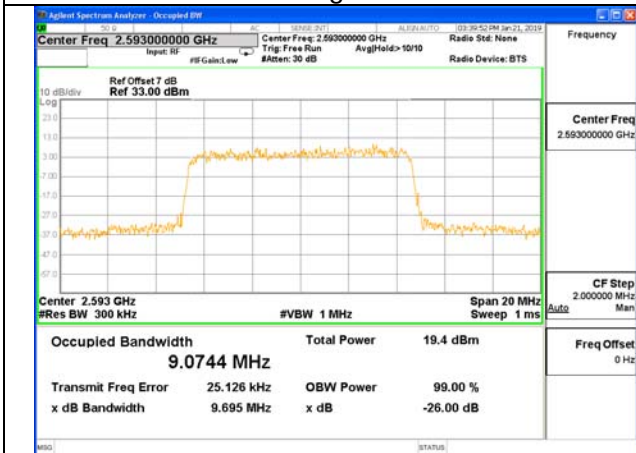


Fig.6

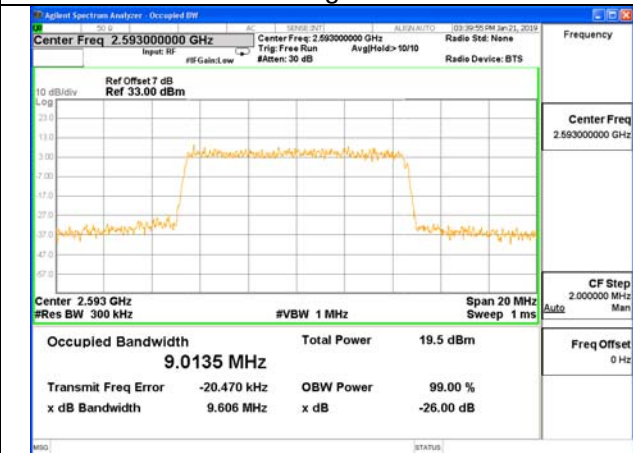


Fig.7

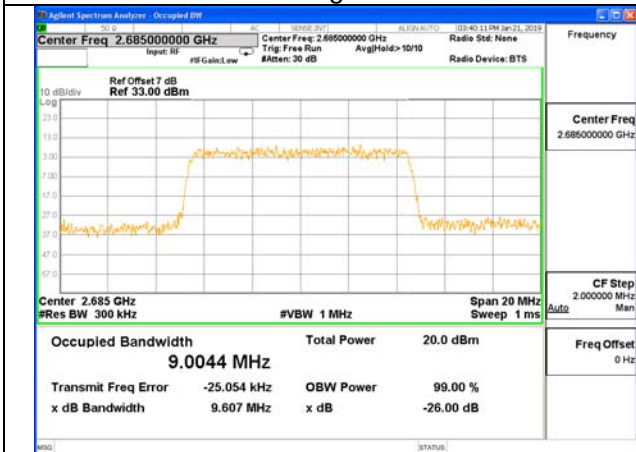


Fig.8

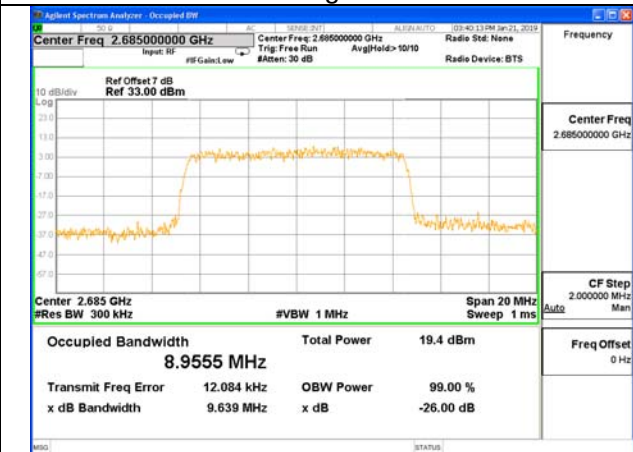
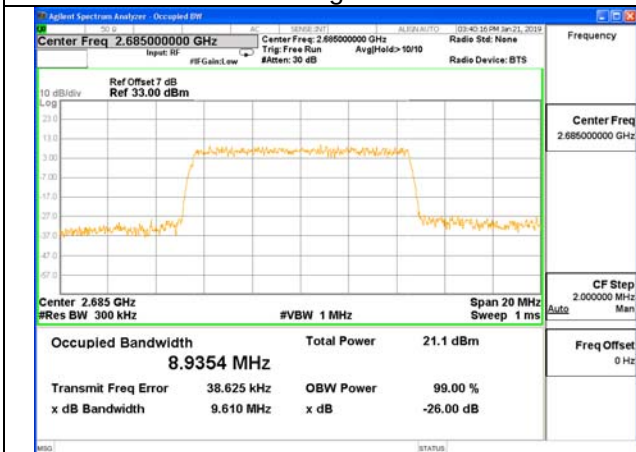


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
41	2503.5	39725	15	75	0	13.495	Fig.1	13.380	Fig.2	13.468	Fig.3
41	2593	40620	15	75	0	13.436	Fig.4	13.467	Fig.5	13.449	Fig.6
41	2682.5	41515	15	75	0	13.525	Fig.7	13.441	Fig.8	13.484	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
41	2503.5	39725	15	75	0	14.230	Fig.1	14.150	Fig.2	14.190	Fig.3
41	2593	40620	15	75	0	14.320	Fig.4	14.200	Fig.5	14.140	Fig.6
41	2682.5	41515	15	75	0	14.150	Fig.7	14.180	Fig.8	14.300	Fig.9

Fig.1

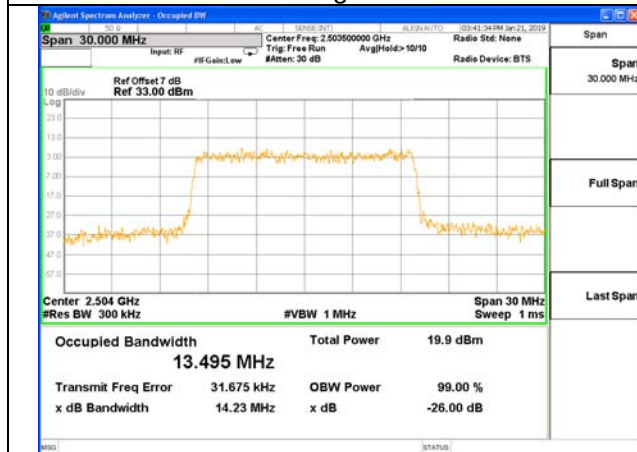


Fig.2

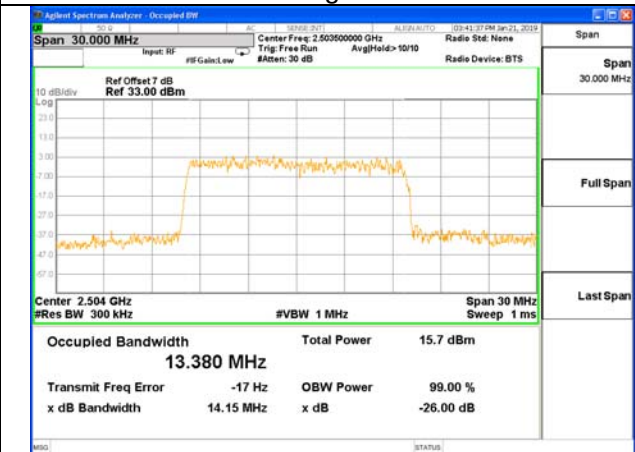


Fig.3

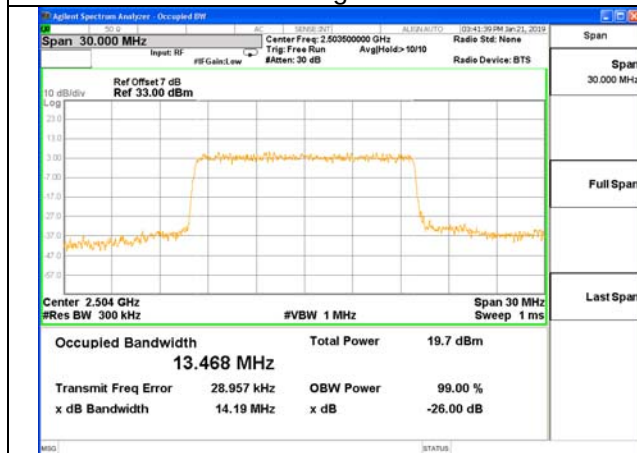


Fig.4

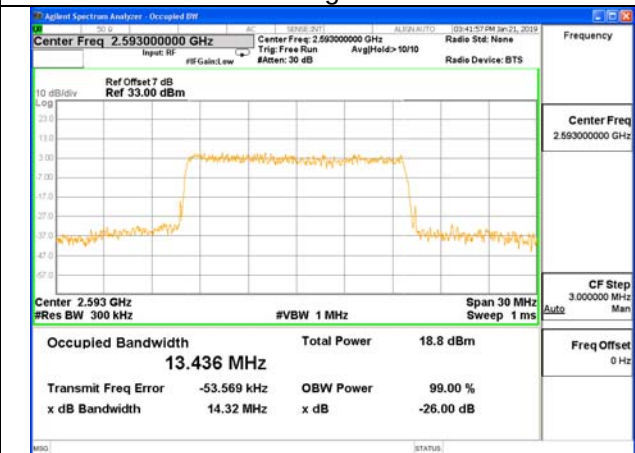


Fig.5

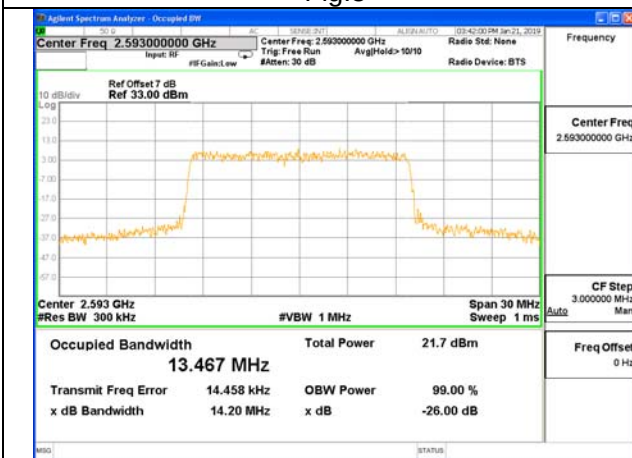


Fig.6

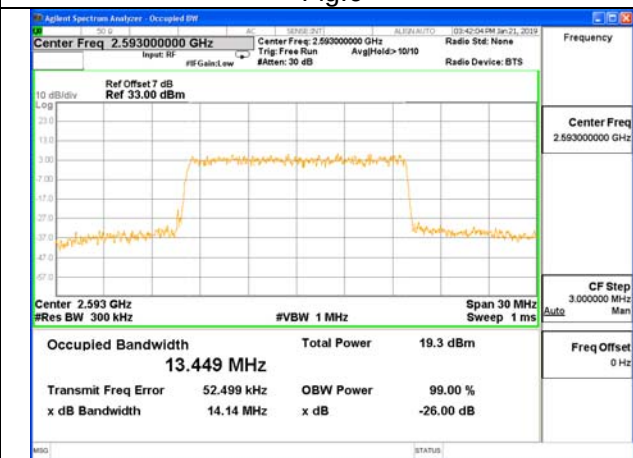


Fig.7

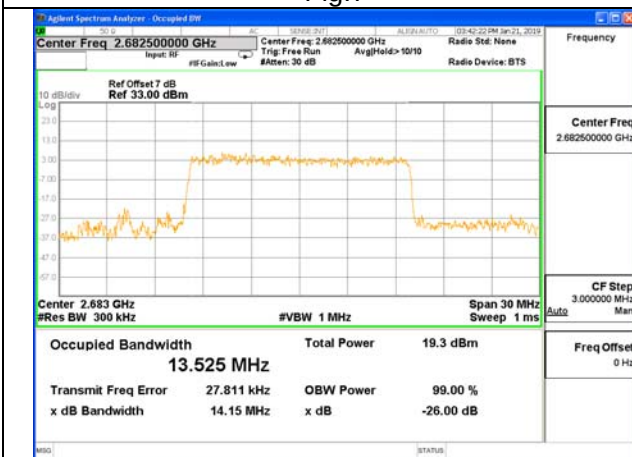


Fig.8

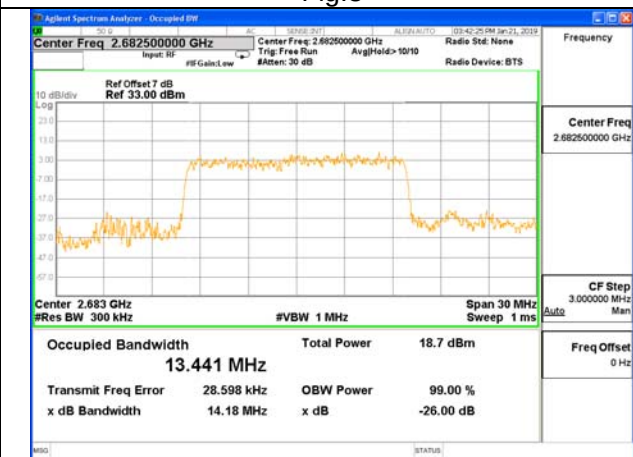
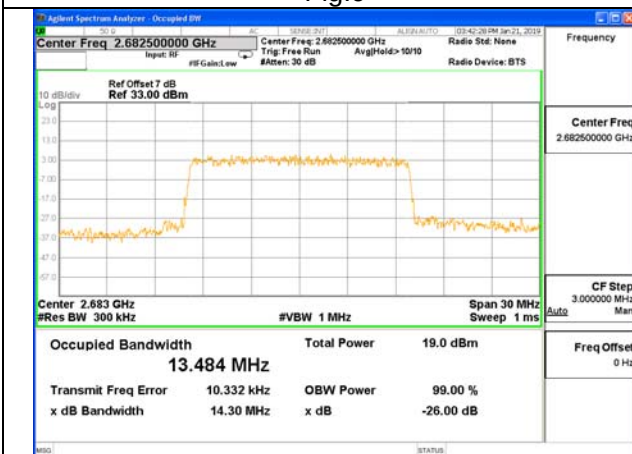


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
41	2506	39750	20	100	0	17.901	Fig.1	17.866	Fig.2	17.932	Fig.3
41	2593	40620	20	100	0	17.840	Fig.4	17.839	Fig.5	17.862	Fig.6
41	2680	41490	20	100	0	17.904	Fig.7	17.898	Fig.8	17.868	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
41	2506	39750	20	100	0	18.650	Fig.1	18.590	Fig.2	18.610	Fig.3
41	2593	40620	20	100	0	18.650	Fig.4	18.630	Fig.5	18.950	Fig.6
41	2680	41490	20	100	0	18.760	Fig.7	18.640	Fig.8	18.640	Fig.9

Fig.1

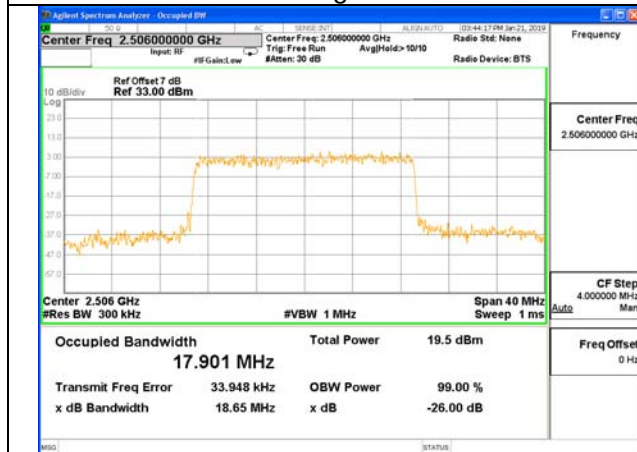


Fig.2

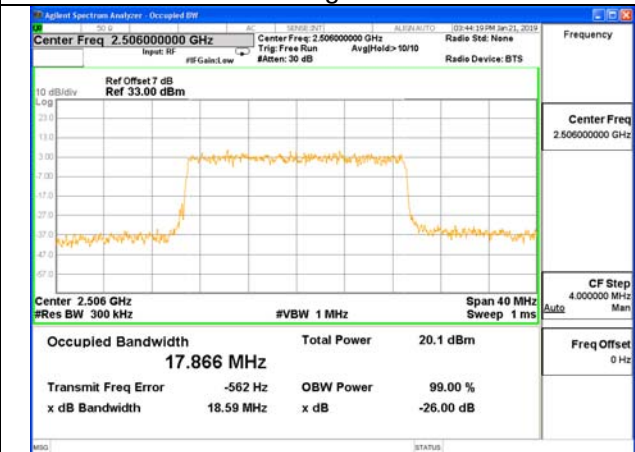


Fig.3

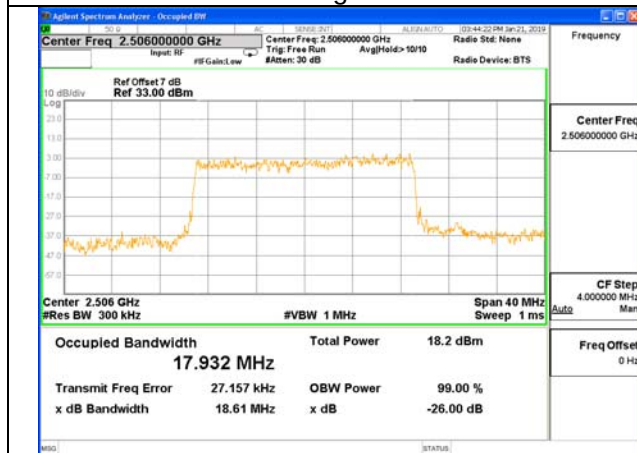


Fig.4

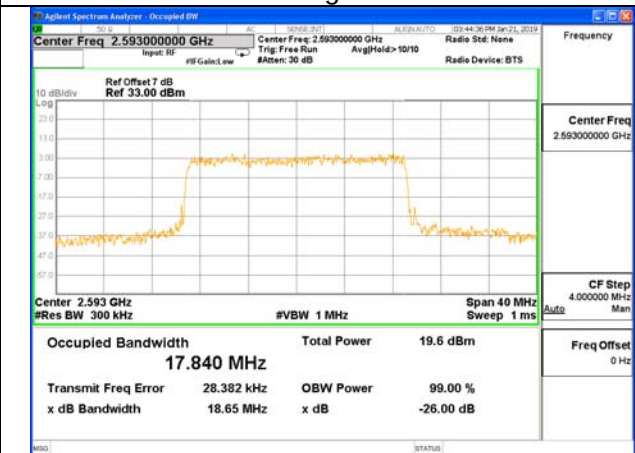


Fig.5



Fig.6

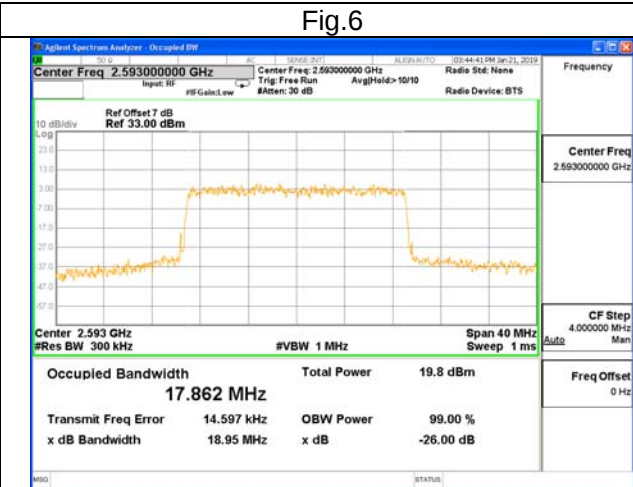


Fig.7

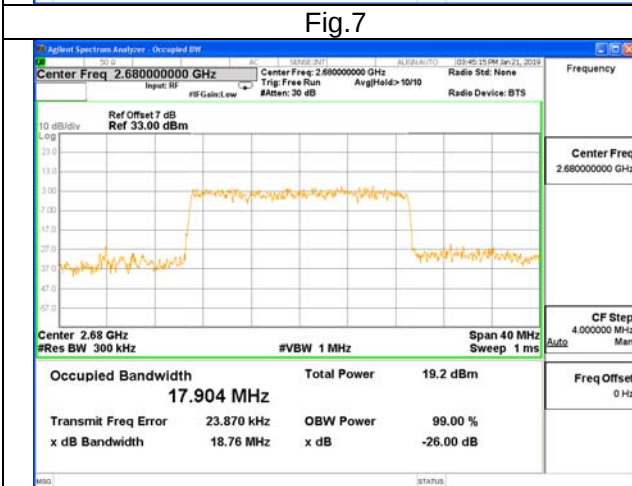
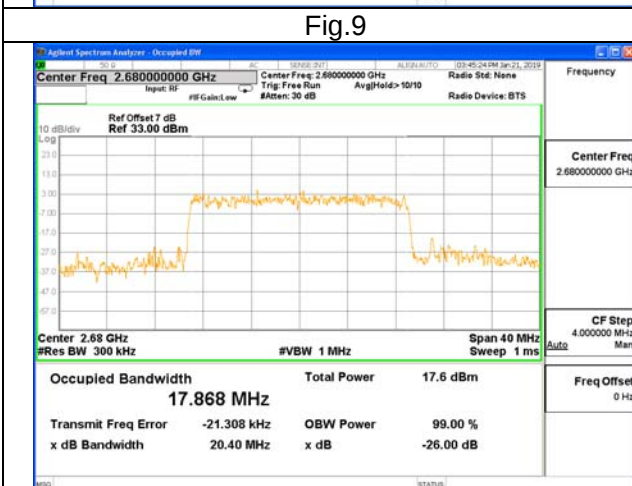


Fig.8

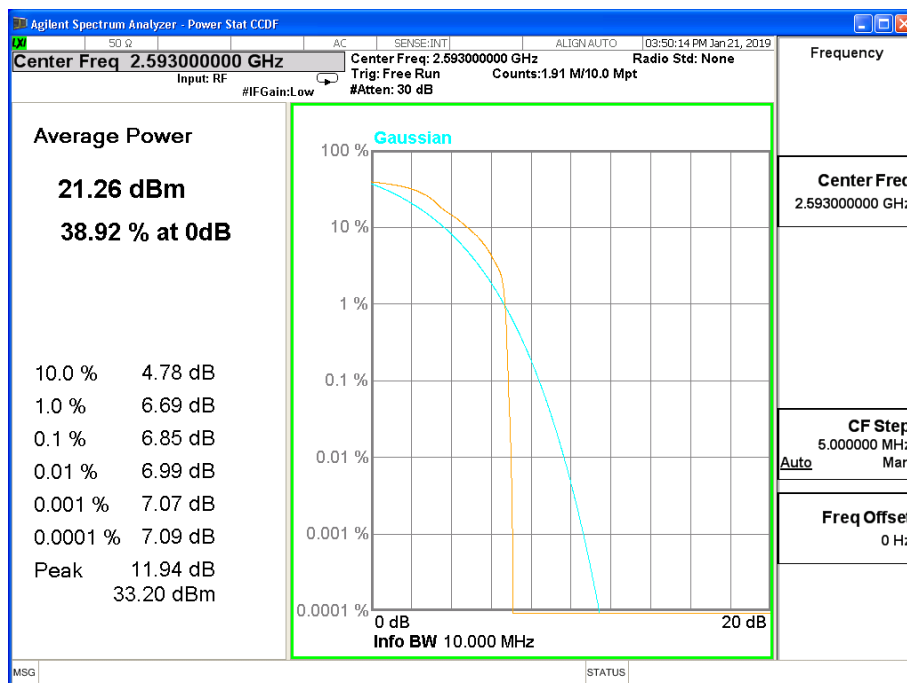


Fig.9

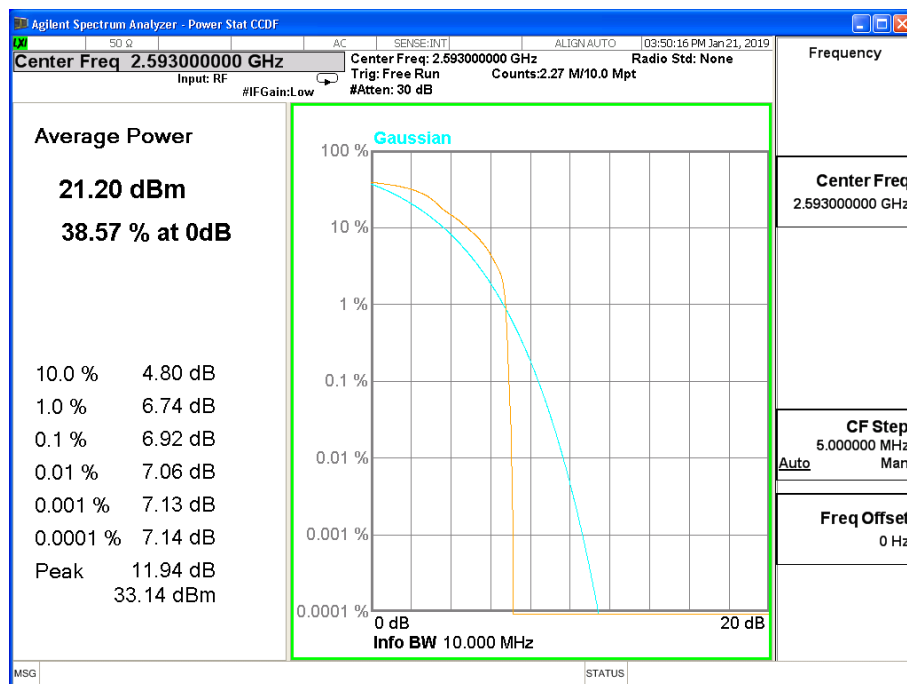


4 Peak-Average Ratio

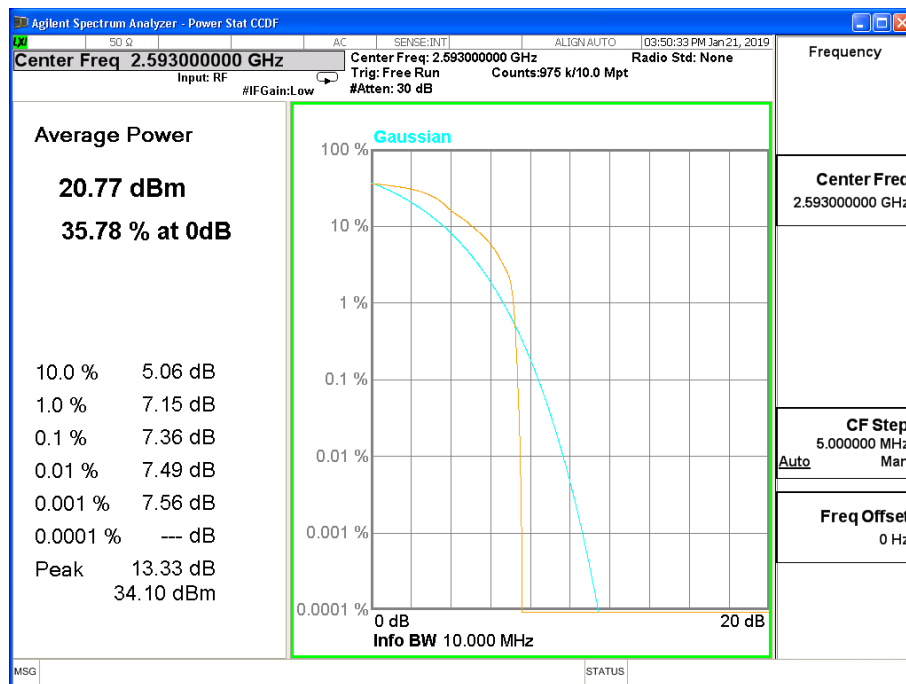
Test result:



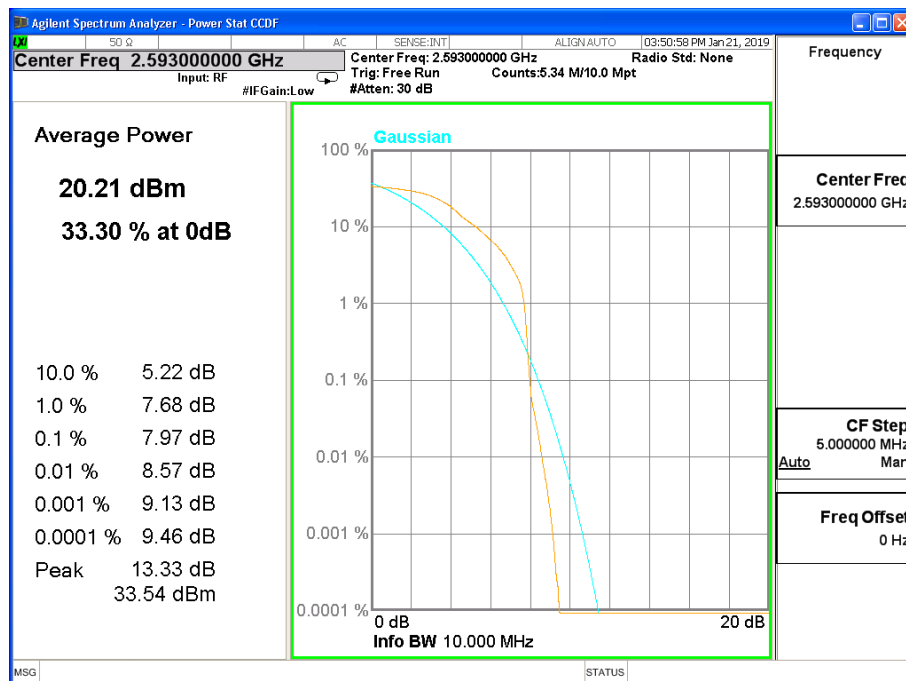
Peak-Average Ratio Plot(5MHz BW,QPSK,Band 41-mid Channel)



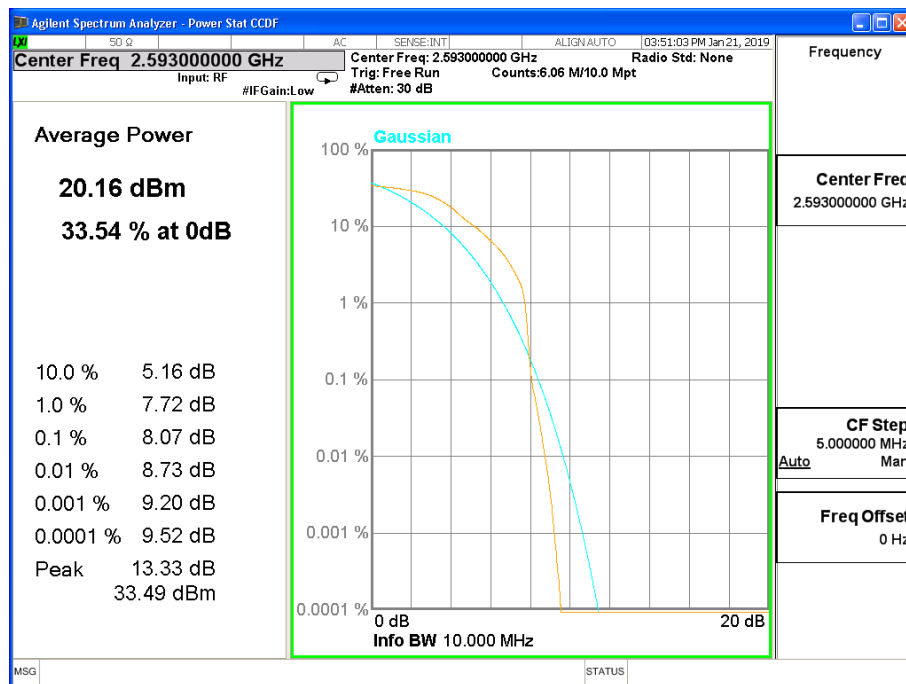
Peak-Average Ratio Plot(5MHz BW,16QAM,Band 41-mid Channel)



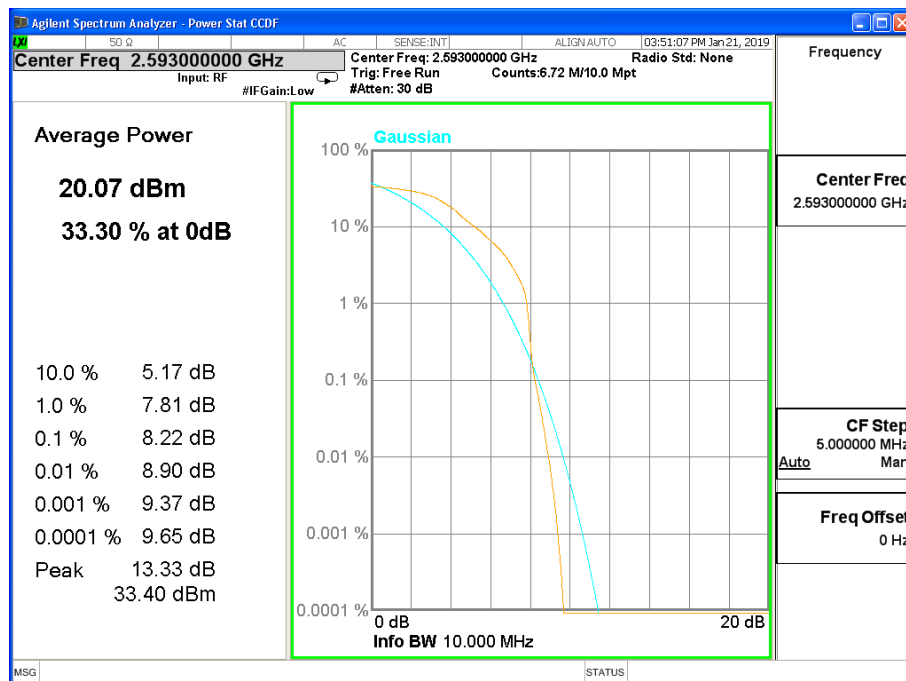
Peak-Average Ratio Plot(5MHz BW,64QAM,Band 41-mid Channel)



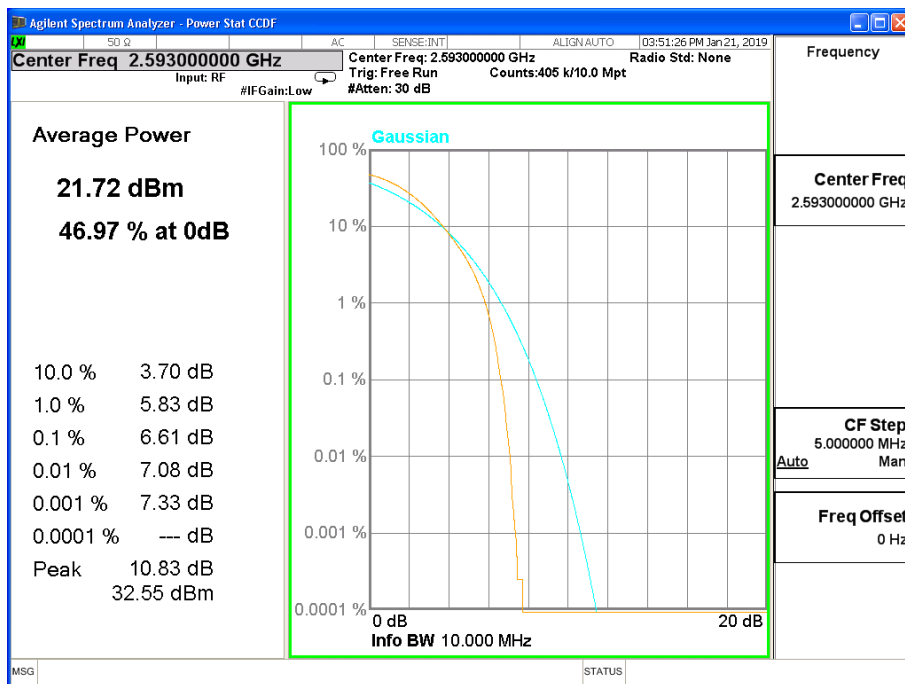
Peak-Average Ratio Plot(10MHz BW,QPSK,Band 41-mid Channel)



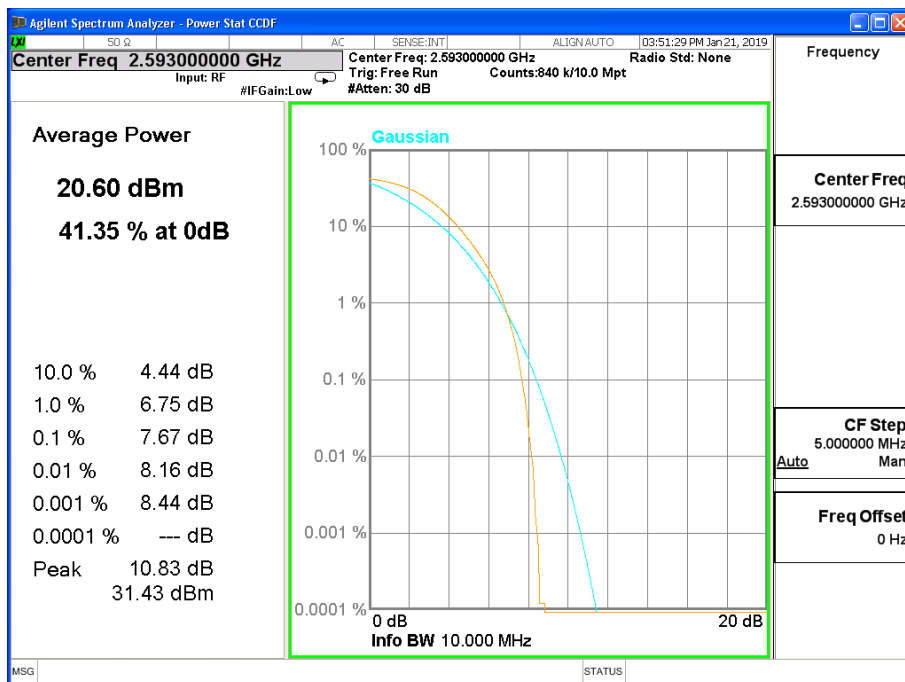
Peak-Average Ratio Plot(10MHz BW,16QAM,Band 41-mid Channel)



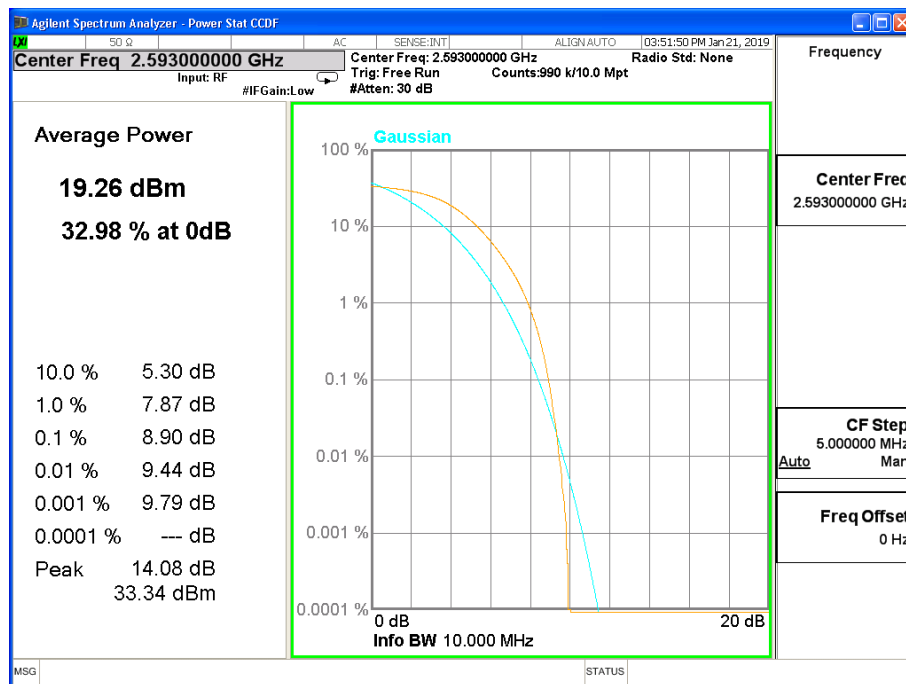
Peak-Average Ratio Plot(10MHz BW,64QAM,Band 41-mid Channel)



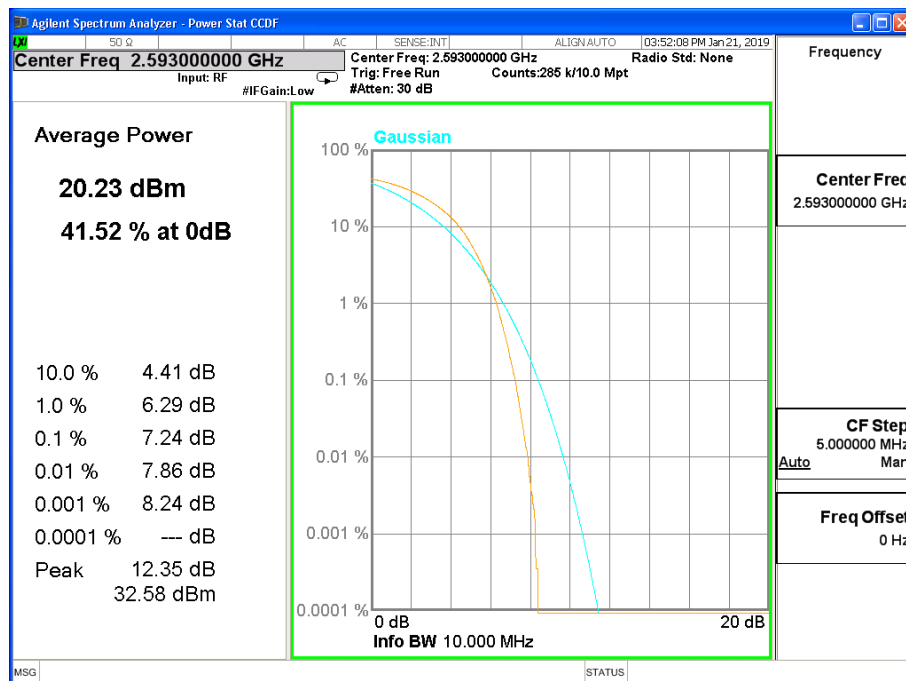
Peak-Average Ratio Plot(15MHz BW,QPSK,Band 41-mid Channel)



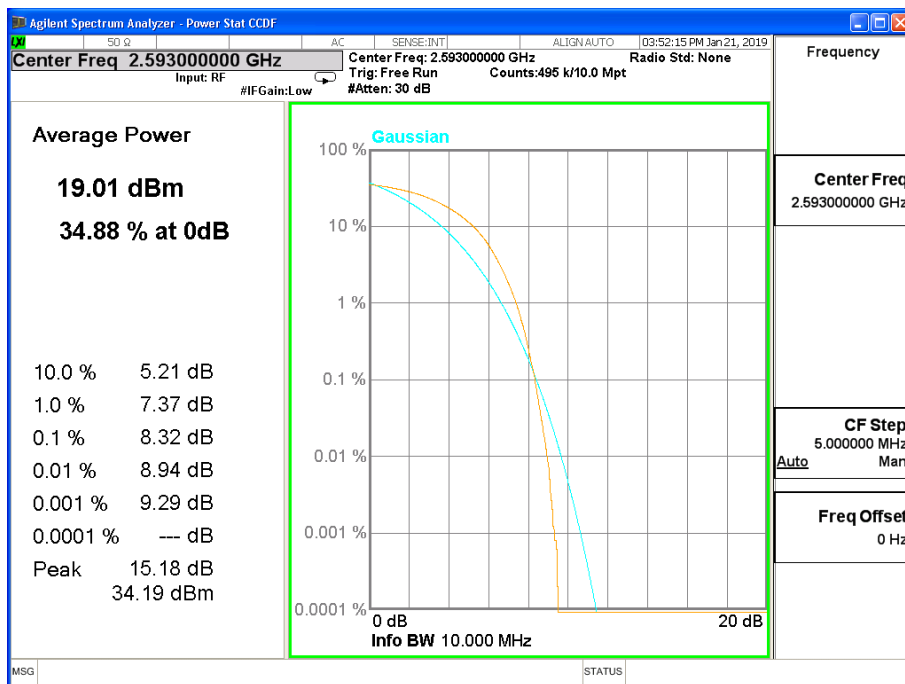
Peak-Average Ratio Plot(15MHz BW,16QAM,Band 41-mid Channel)



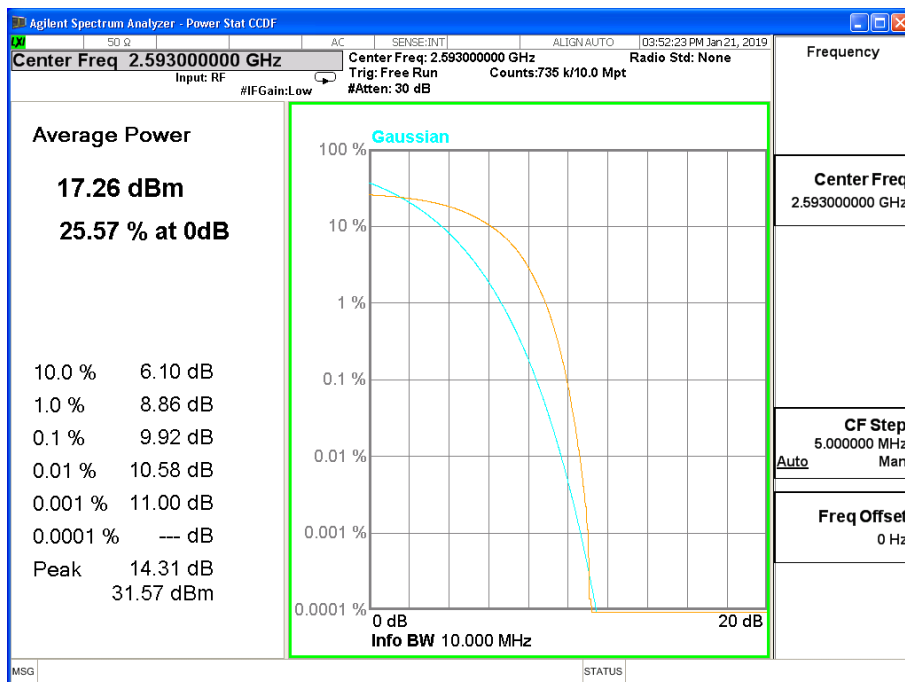
Peak-Average Ratio Plot(15MHz BW,64QAM,Band 41-mid Channel)



Peak-Average Ratio Plot(20MHz BW,QPSK,Band 41-mid Channel)



Peak-Average Ratio Plot(20MHz BW,16QAM,Band 41-mid Channel)



Peak-Average Ratio Plot(20MHz BW,64QAM,Band 41-mid Channel)

5 Spurious Emissions at antenna terminal

Test result

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
41	2506	39750	20	1	0	Fig.1

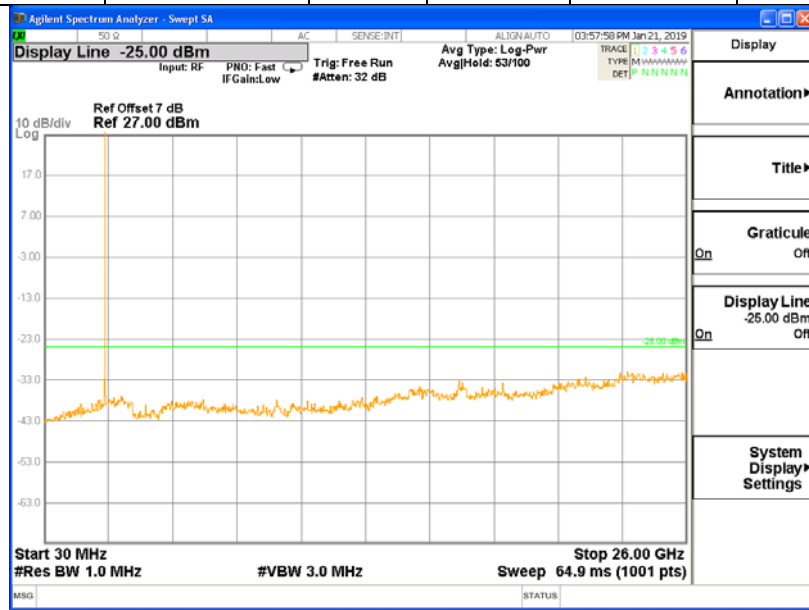


Fig.1

Band	Carrier frequency (MHz)	Channel(Mid)	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
41	2593	40620	20	1	0	Fig.1

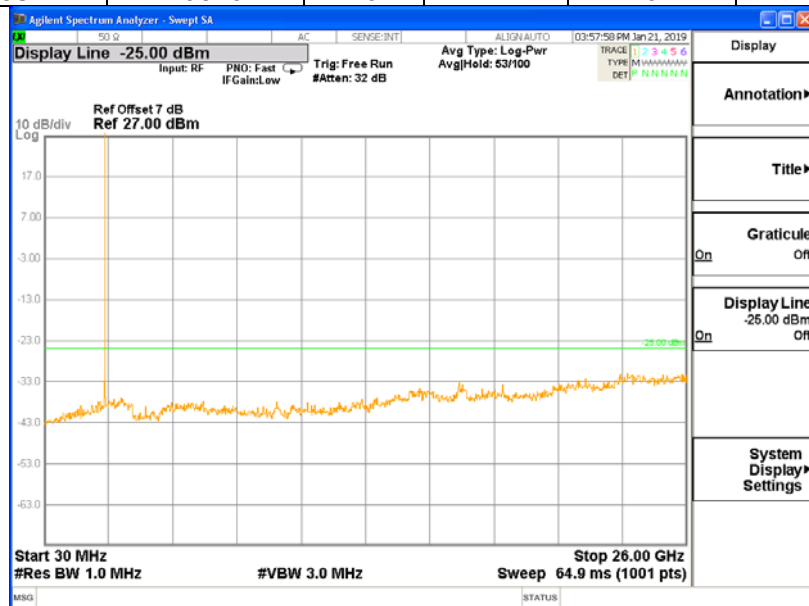


Fig.1

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
41	2680	41490	20	1	0	Fig.1

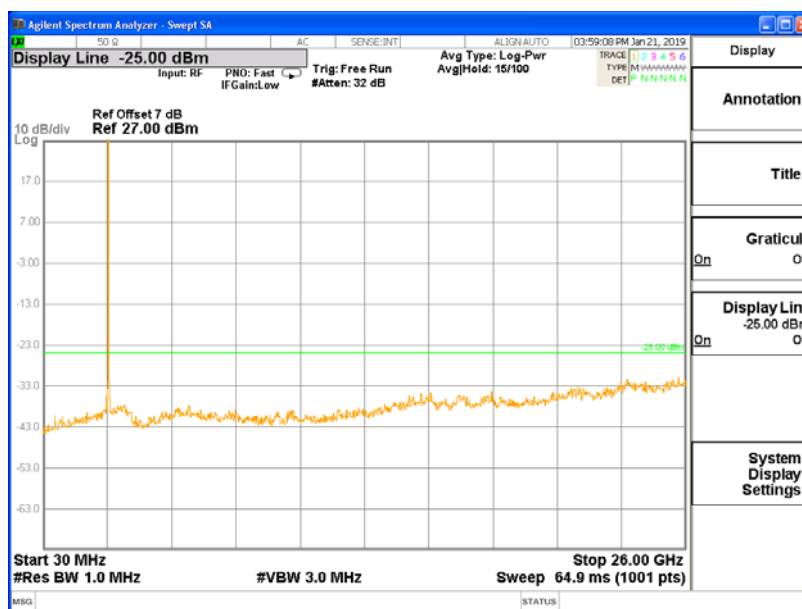


Fig.1

6 Band Edges Compliance

Test result

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Band Edges Plot
						QPSK
41	2498.5	39675	5	1	0	Fig.1
				25	0	Fig.4

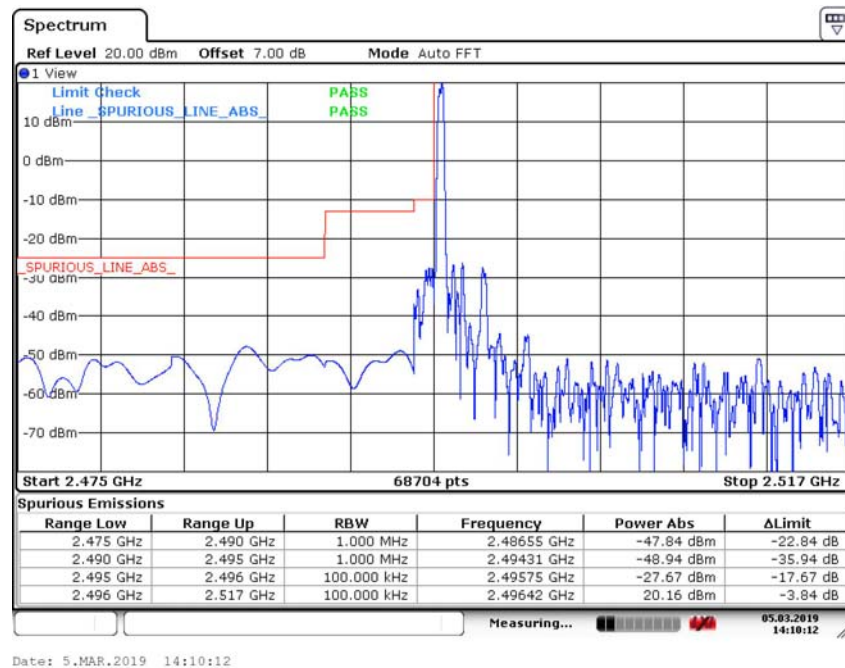


Fig.1

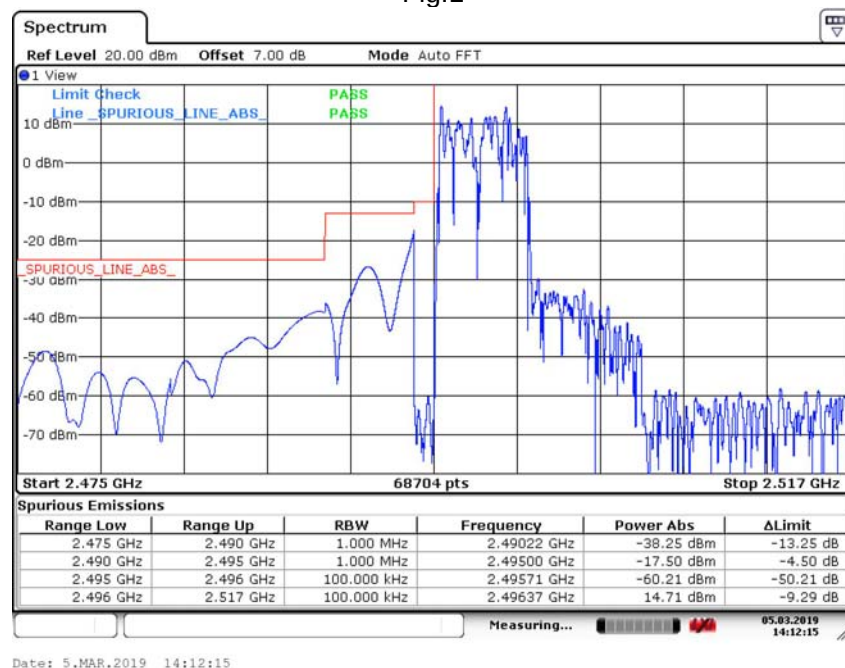


Fig.4

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
41	2687.5	41565	5	1	0	Fig.1
				25	0	Fig.4

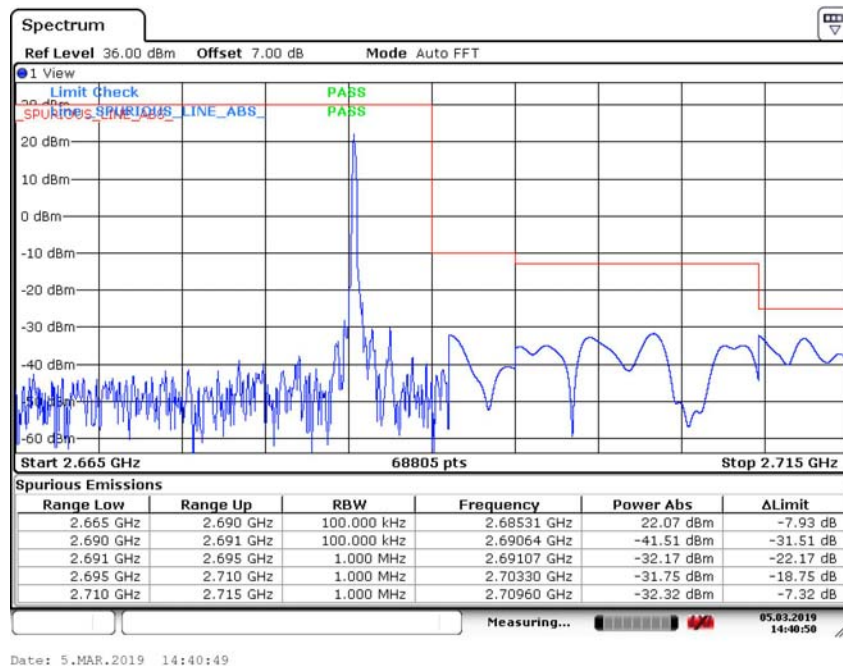


Fig.1

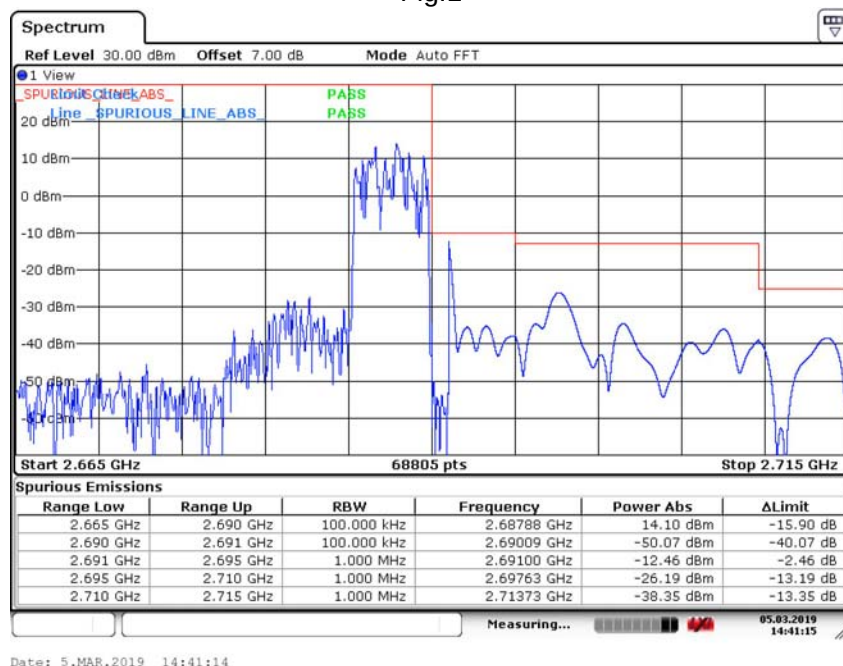


Fig.4

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
41	2501	39700	10	1	0	Fig.1
				50	0	Fig.4

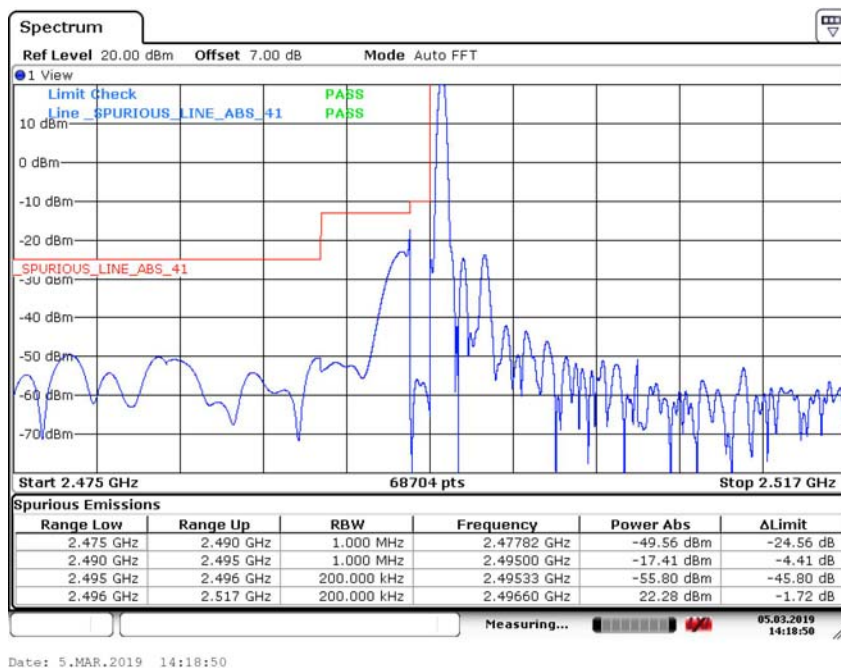


Fig.1

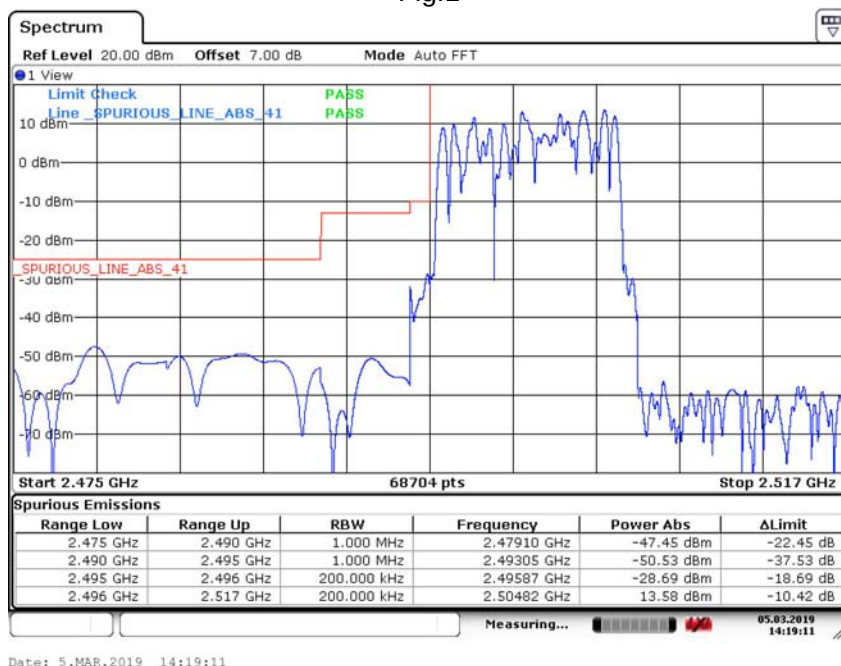


Fig.4

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
41	2685	41540	10	1	0	Fig.1
				50	0	Fig.4

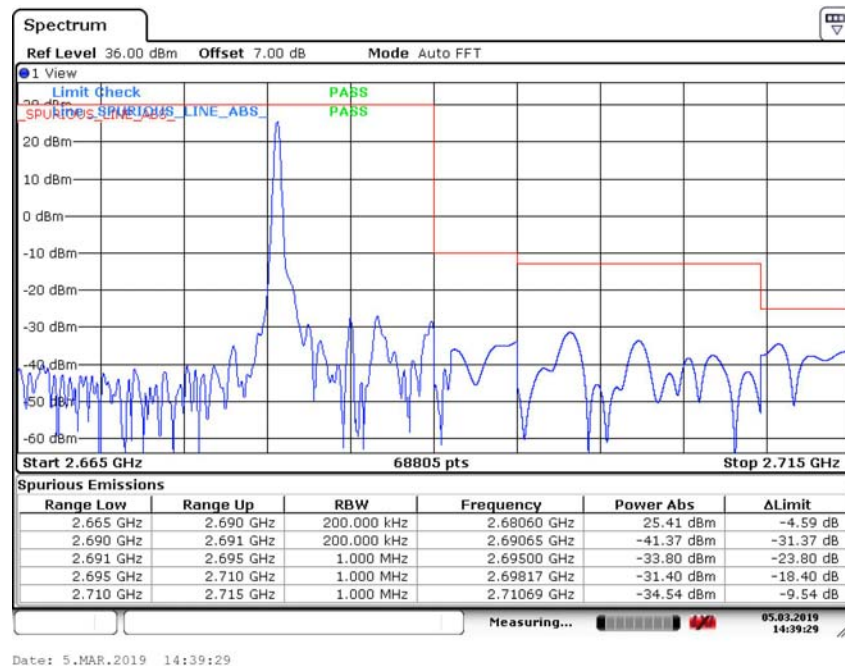


Fig.1

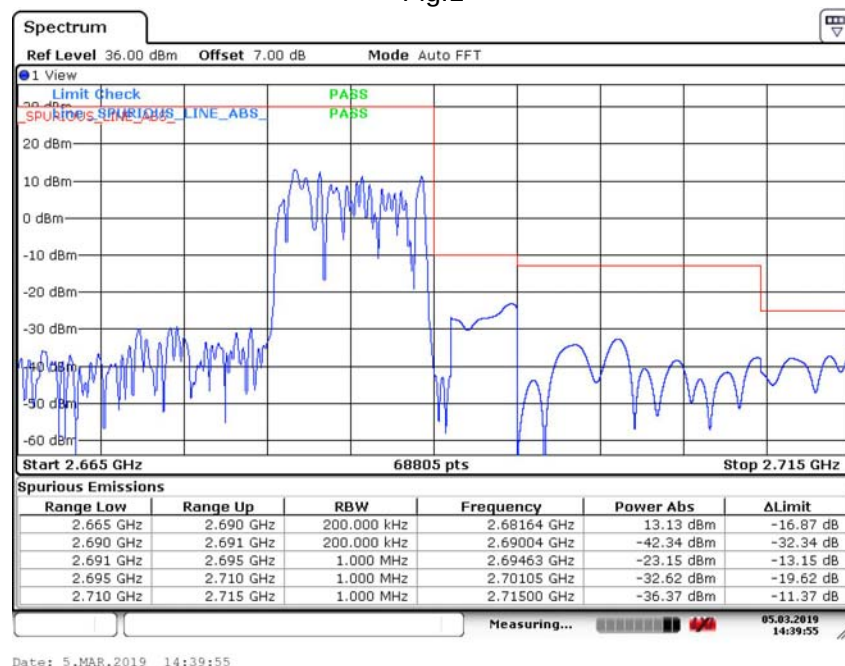


Fig.4

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
41	2503.5	39725	15	1	0	Fig.1
				75	0	Fig.4

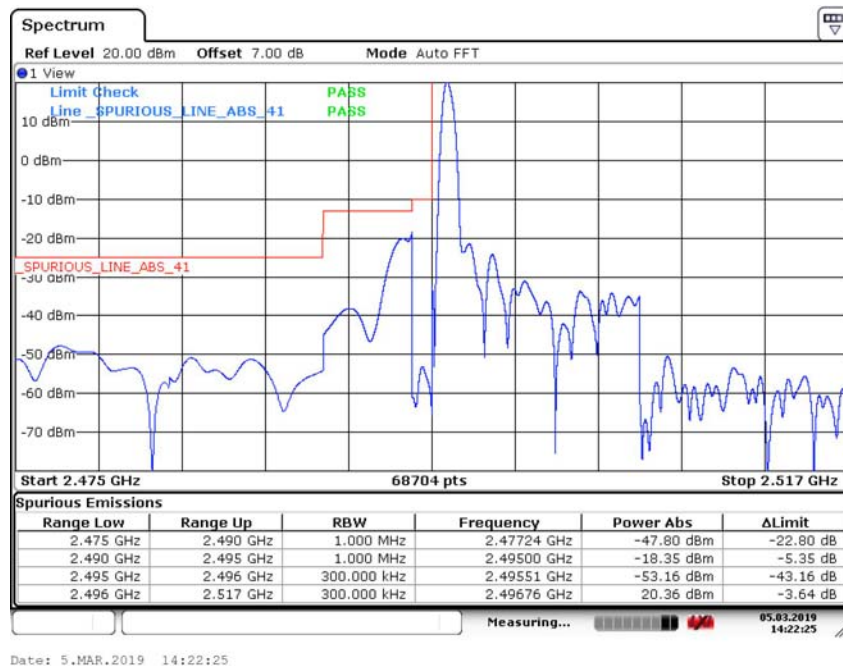


Fig.1

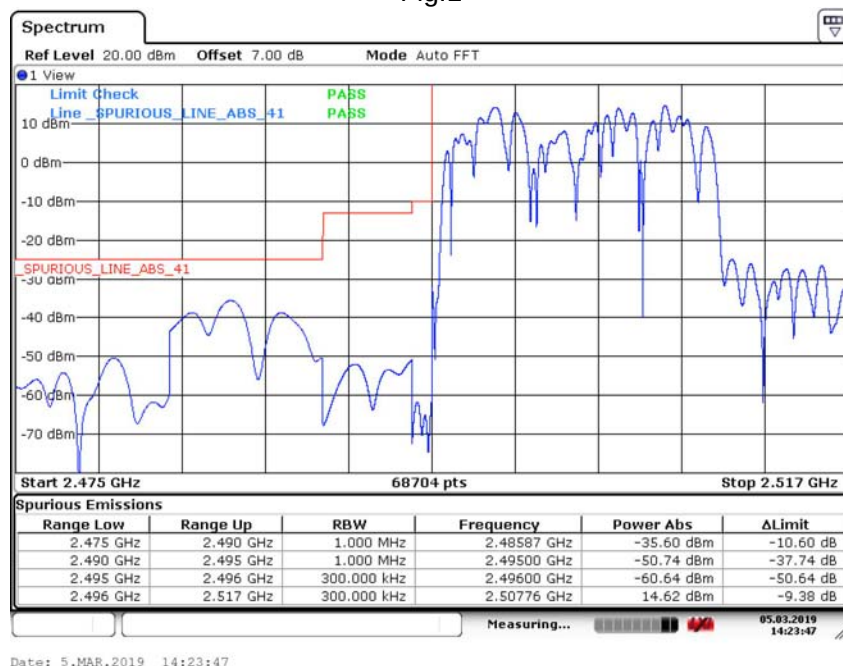


Fig.4

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
41	2682.5	41515	15	1	0	Fig.1
				75	0	Fig.4

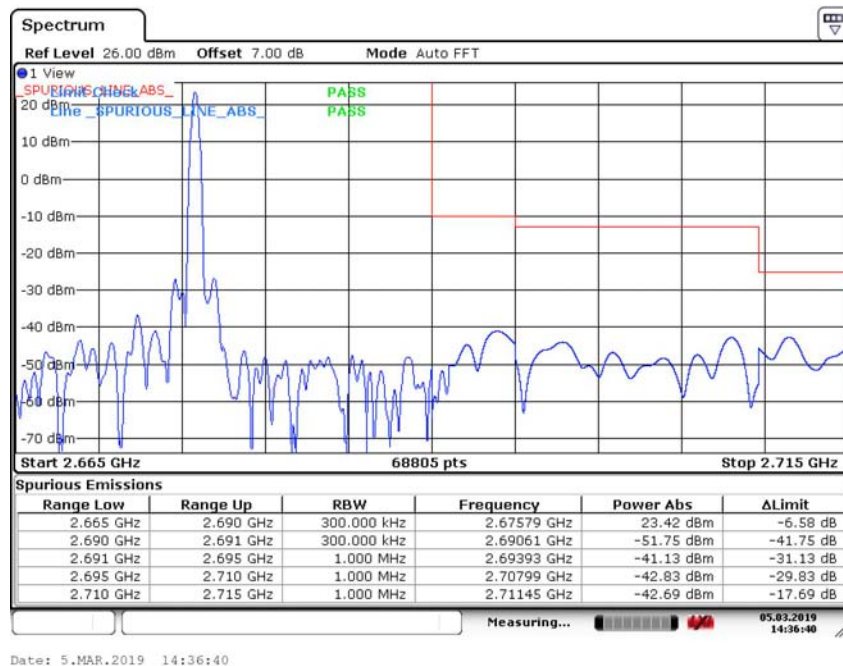


Fig.1

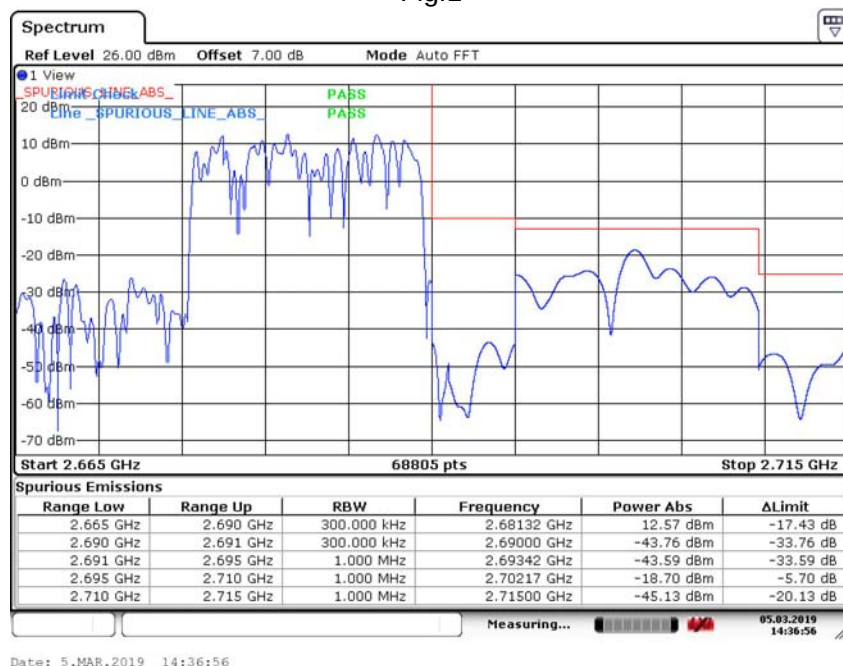


Fig.4

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
41	2506	39750	20	1	0	Fig.1
				100	0	Fig.4

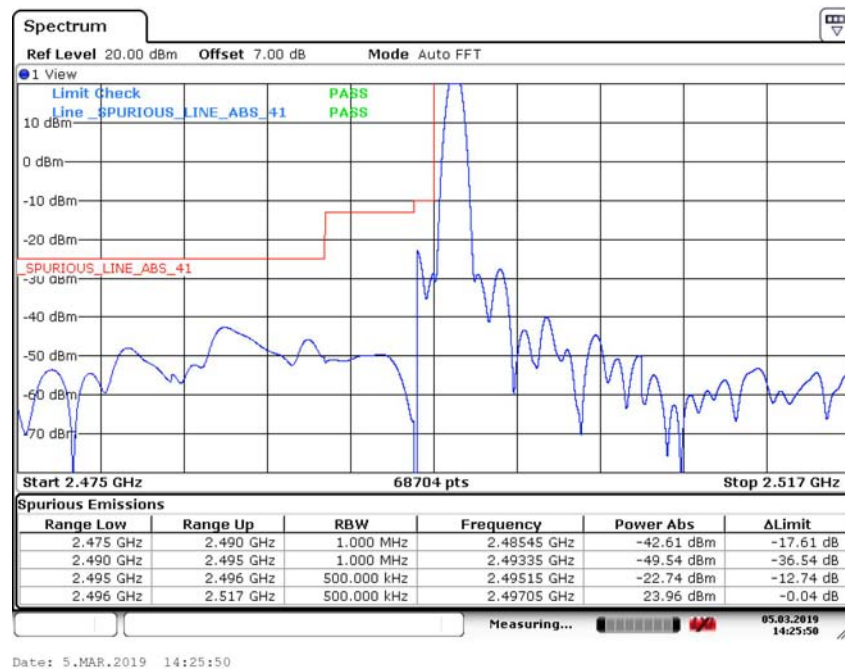


Fig.1

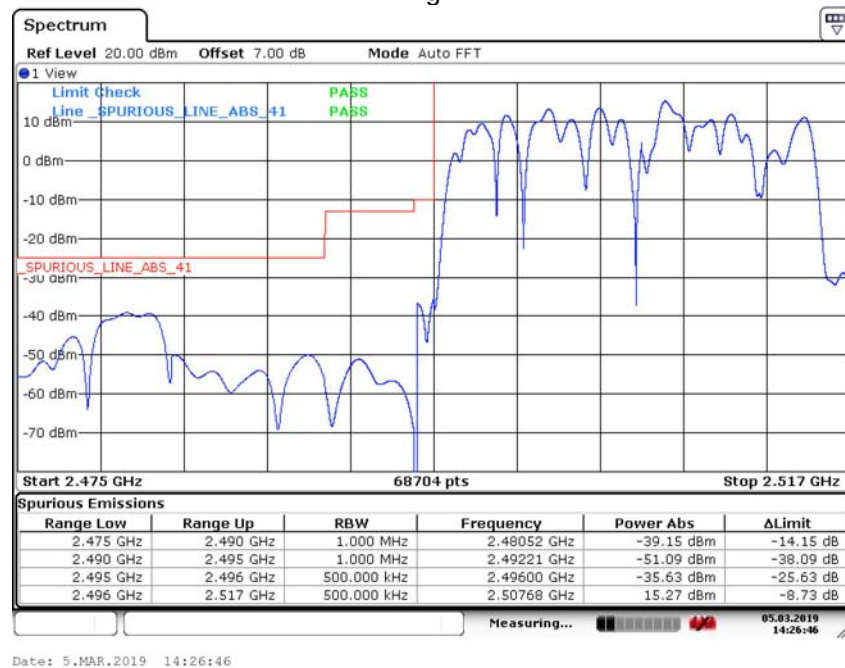


Fig.4

Band	Carrier frequency (MHz)	Channel(High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
41	2680	41490	20	1	0	Fig.1
				100	0	Fig.4

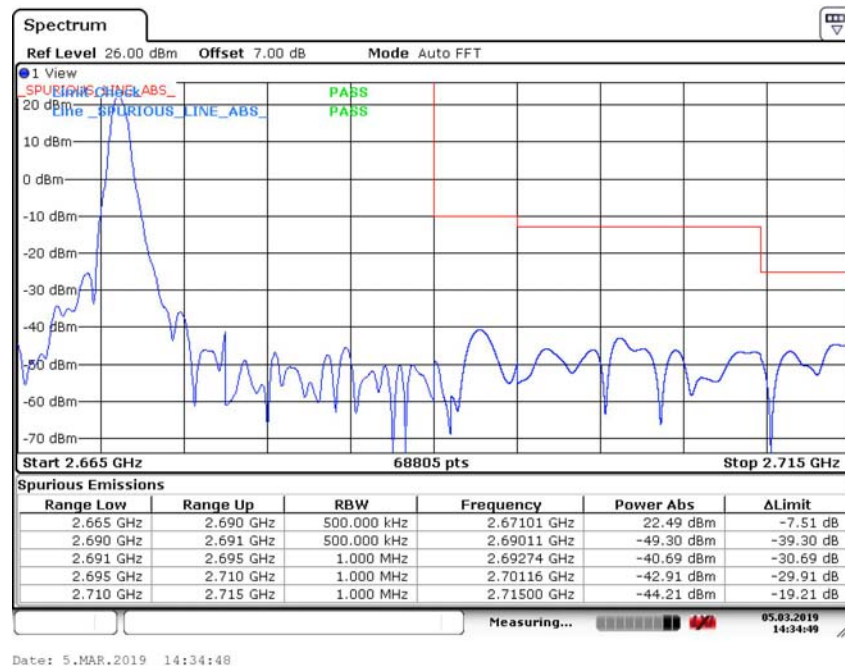


Fig.1

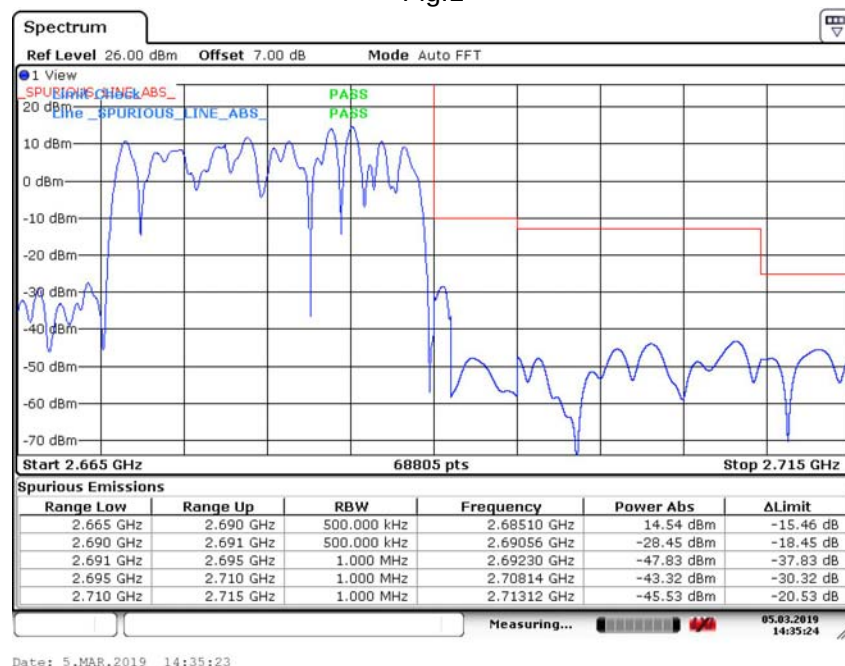


Fig.4

7 Frequency Stability

Test result:

Temperature(°C)	Voltage	Test Result (ppm) Band41 Low Channel			
		5M	10M	15M	20M
-10	NV	0.019	-0.001	0.009	0.003
0	NV	0.018	0.007	0.011	0.016
+10	NV	0.011	0.018	0.005	0.014
+20	NV	0.010	0.004	0.004	0.007
+30	NV	0.011	0.017	0.007	0.005
+40	NV	0.004	0.004	0.015	0.017
+50	NV	0.006	0.004	0.004	0.005
+55	NV	0.017	0.003	0.006	0.004
+20	LV	0.020	0.004	0.012	0.012
+20	HV	0.006	0.012	0.001	0.013

Temperature(°C)	Voltage	Test Result (ppm) Band41 High Channel			
		5M	10M	15M	20M
-10	NV	0.019	-0.001	0.009	0.003
0	NV	0.014	0.019	0.001	0.011
+10	NV	0.019	-0.001	0.009	0.003
+20	NV	0.010	0.013	0.015	0.016
+30	NV	-0.018	0.001	0.013	-0.004
+40	NV	0.015	0.019	-0.017	0.014
+50	NV	0.011	0.005	-0.001	0.009
+55	NV	-0.006	0.017	0.011	-0.010
+20	LV	0.008	0.009	0.006	0.020
+20	HV	-0.006	0.013	0.004	0.008