

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

LTE Band 5

1 RF Power Output

Antenna Gain=-2.2dBi

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	824.7	20407	1.4	1	0	22.63
				1	5	22.63
				3	2	22.46
				6	0	22.44
	836.5	20525		1	0	22.50
				1	5	22.50
				3	2	22.41
				6	0	22.36
	848.3	20643		1	0	22.52
				1	5	22.52
				3	2	22.42
				6	0	22.34
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
16QAM	824.7	20407	1.4	1	0	22.02
				1	5	22.02
				3	2	21.41
				6	0	21.03
	836.5	20525		1	0	22.19
				1	5	22.19
				3	2	21.21
				6	0	21.09
	848.3	20643		1	0	22.07
				1	5	22.07
				3	2	21.28
				6	0	21.14
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	824.7	20407	1.4	1	0	22.02
				1	5	22.02
				3	2	21.34
				6	0	21.00
	836.5	20525		1	0	22.19
				1	5	22.19
				3	2	21.11
				6	0	21.00
	848.3	20643		1	0	22.06
				1	5	22.06
				3	2	21.20
				6	0	21.07

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	825.5	20415	3	1	0	22.60
				1	14	22.60
				8	4	22.43
				15	0	22.41
	836.5	20525		1	0	22.47
				1	14	22.47
				8	4	22.40
				15	0	22.31
	847.5	20635		1	0	22.47
				1	14	22.47
				8	4	22.40
				15	0	22.32
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
16QAM	825.5	20415	3	1	0	22.00
				1	14	22.00
				8	4	21.39
				15	0	21.01
	836.5	20525		1	0	22.17
				1	14	22.17
				8	4	21.19
				15	0	21.07
	847.5	20635		1	0	22.09
				1	14	22.07
				8	4	21.27
				15	0	21.13
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	825.5	20415	3	1	0	22.01
				1	14	22.01
				8	4	21.33
				15	0	20.99
	836.5	20525		1	0	22.18
				1	14	22.18
				8	4	21.14
				15	0	21.03
	847.5	20635		1	0	22.06
				1	14	22.06
				8	4	21.20
				15	0	21.07

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	826.5	20425	5	1	0	22.62
				1	24	22.62
				12	6	22.45
				25	0	22.43
	836.5	20525		1	0	22.49
				1	24	22.49
				12	6	22.40
				25	0	22.35
	846.5	20625		1	0	22.50
				1	24	22.50
				12	6	22.43
				25	0	22.35
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
16QAM	826.5	20425	5	1	0	22.03
				1	24	22.03
				12	6	21.42
				25	0	21.04
	836.5	20525		1	0	22.20
				1	24	22.20
				12	6	21.22
				25	0	21.10
	846.5	20625		1	0	22.07
				1	24	22.07
				12	6	21.27
				25	0	21.13
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	826.5	20425	5	1	0	22.01
				1	24	22.01
				12	6	21.33
				25	0	20.99
	836.5	20525		1	0	22.21
				1	24	22.21
				12	6	21.17
				25	0	21.06
	846.5	20625		1	0	22.12
				1	24	22.12
				12	6	21.26
				25	0	21.13

Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
QPSK	829	20450	10	1	0	22.65
				1	49	22.65
				24	12	22.48
				50	0	22.46
	836.5	20525		1	0	22.52
				1	49	22.52
				24	12	22.43
				50	0	22.38
	844	20600		1	0	22.54
				1	49	22.54
				24	12	22.47
				50	0	22.39
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
16QAM	829	20450	10	1	0	22.07
				1	49	22.07
				24	12	21.46
				50	0	21.08
	836.5	20525		1	0	22.24
				1	49	22.24
				24	12	21.26
				50	0	21.14
	844	20600		1	0	22.12
				1	49	22.12
				24	12	21.32
				50	0	21.18
Modulation	Carrier frequency (MHz)	UL Channel	BW	RB Size	RB Offset	Conducted power (dBm)
64QAM	829	20450	10	1	0	22.06
				1	49	22.06
				24	12	21.38
				50	0	21.04
	836.5	20525		1	0	22.23
				1	49	22.23
				24	12	21.19
				50	0	21.08
	844	20600		1	0	22.14
				1	49	22.14
				24	12	21.28
				50	0	21.15

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	
5	824.7	20407	1.4	6	0	1.0797	Fig.1	1.0788	Fig.2	1.0789	Fig.3
5	836.5	20525	1.4	6	0	1.0822	Fig.4	1.0804	Fig.5	1.0794	Fig.6
5	848.3	20643	1.4	6	0	1.0777	Fig.7	1.0777	Fig.8	1.0786	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
5	824.7	20407	1.4	6	0	1.264	Fig.1	1.256	Fig.2	1.253	Fig.3
5	836.5	20525	1.4	6	0	1.268	Fig.4	1.264	Fig.5	1.265	Fig.6
5	848.3	20643	1.4	6	0	1.263	Fig.7	1.258	Fig.8	1.253	Fig.9

Fig.1

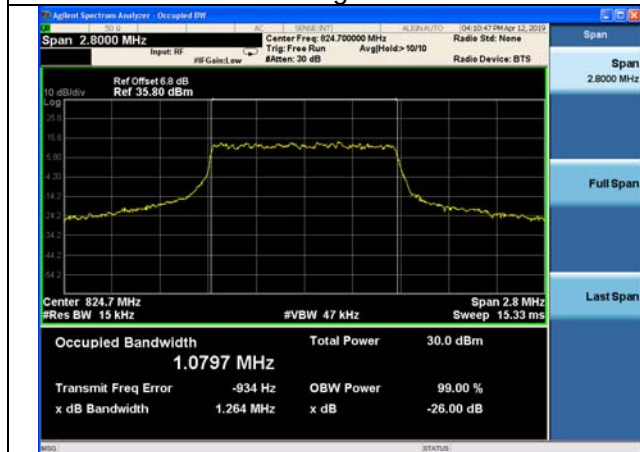


Fig.2

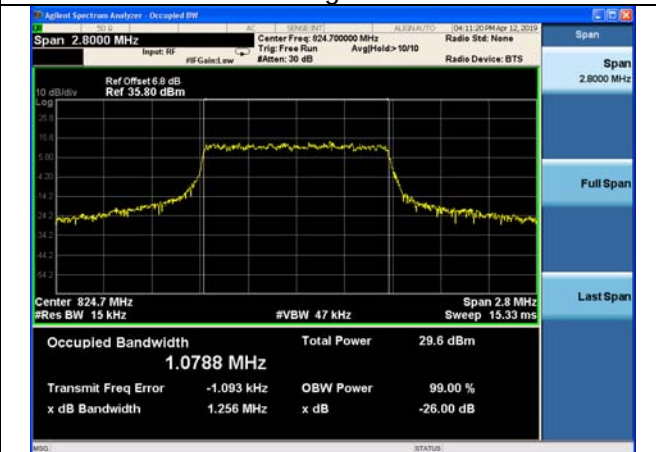


Fig.3

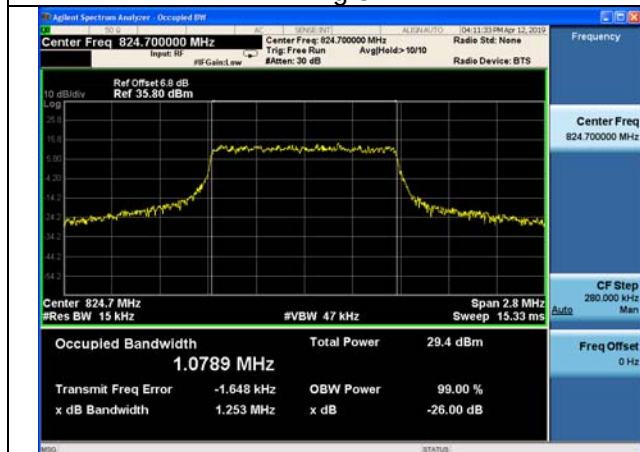


Fig.4

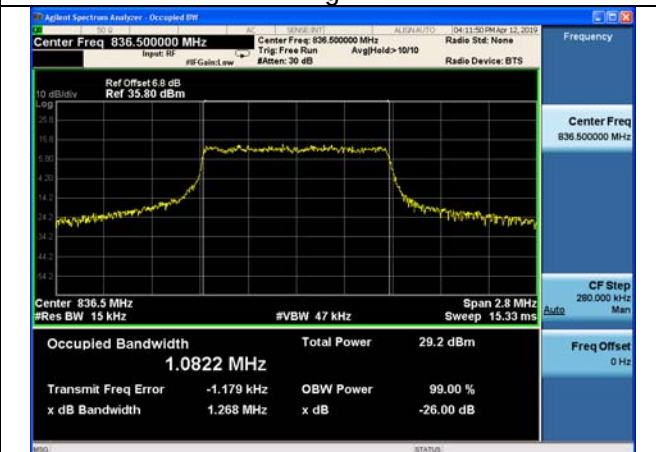


Fig.5

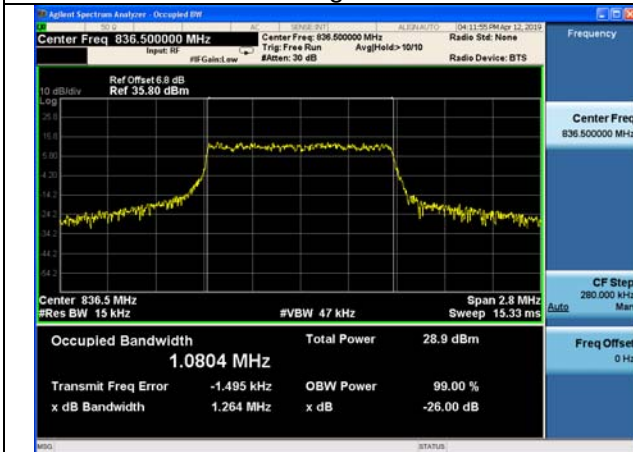


Fig.6

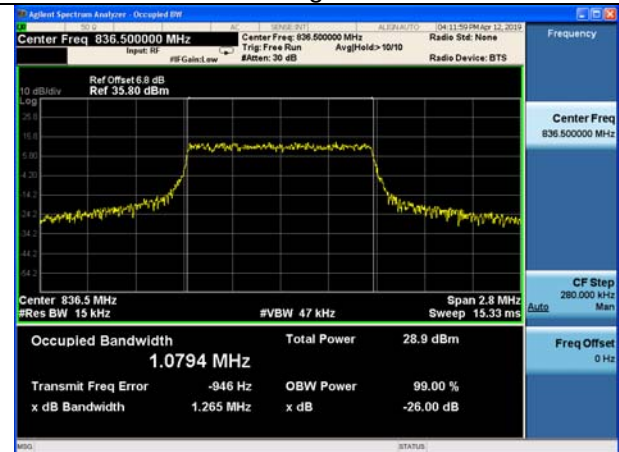


Fig.7



Fig.8

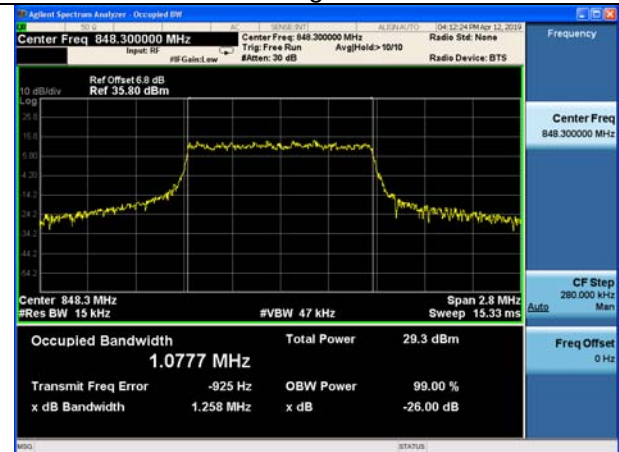
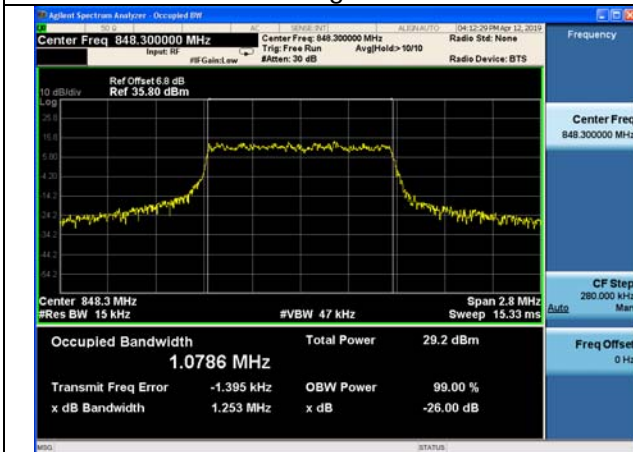


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
5	825.5	20415	3	15	0	2.7099	Fig.1	2.7124	Fig.2	2.7120	Fig.3
5	836.5	20525	3	15	0	2.7118	Fig.4	2.7097	Fig.5	2.7103	Fig.6
5	847.5	20635	3	15	0	2.7089	Fig.7	2.7089	Fig.8	2.7106	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
5	825.5	20415	3	15	0	3.262	Fig.1	3.250	Fig.2	3.233	Fig.3
5	836.5	20525	3	15	0	3.195	Fig.4	3.258	Fig.5	3.209	Fig.6
5	847.5	20635	3	15	0	3.190	Fig.7	3.284	Fig.8	3.208	Fig.9

Fig.1

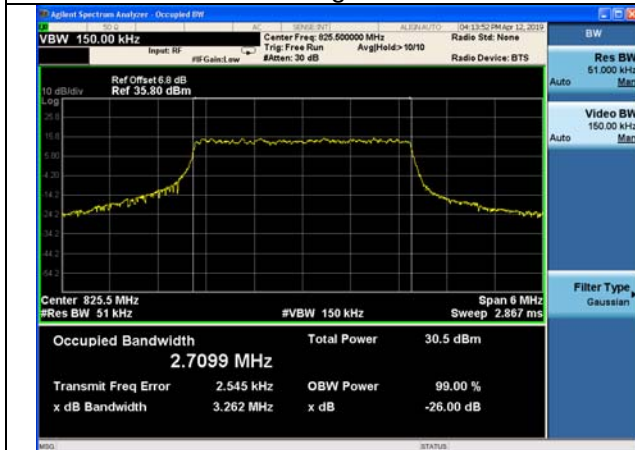


Fig.2

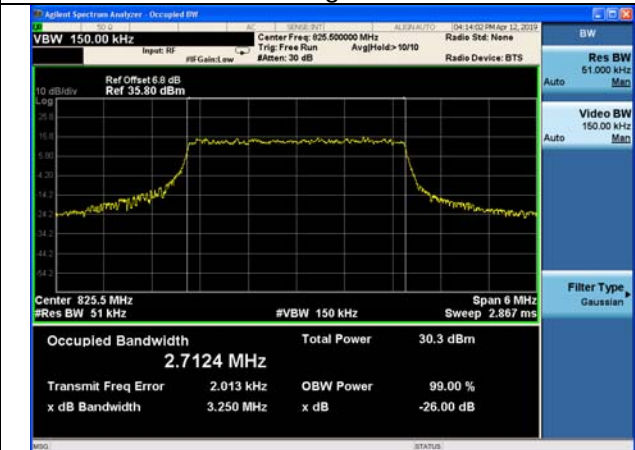


Fig.3

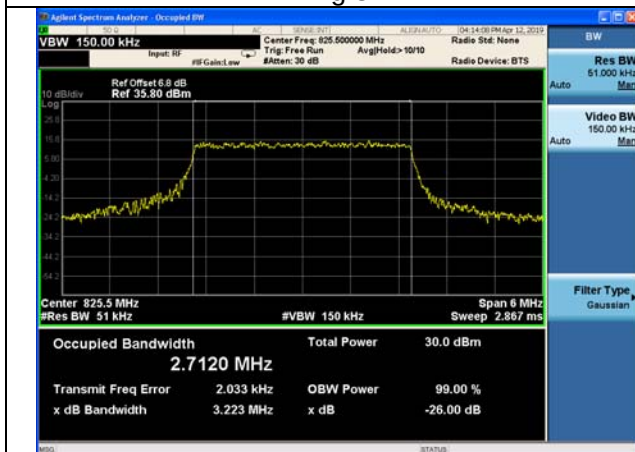


Fig.4

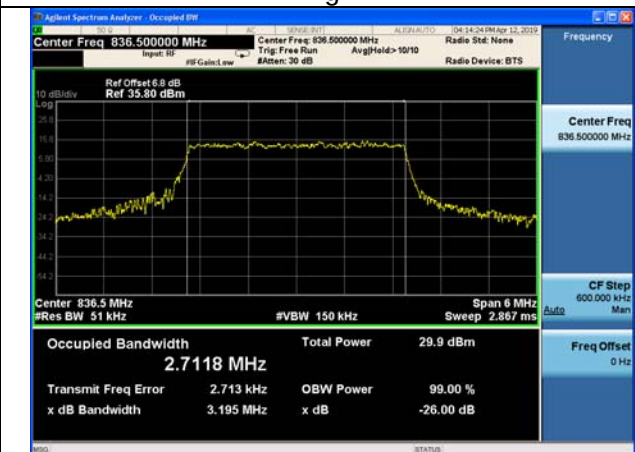


Fig.5

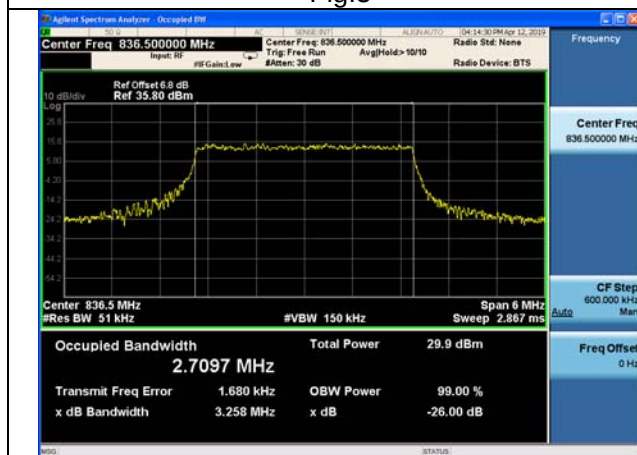


Fig.6

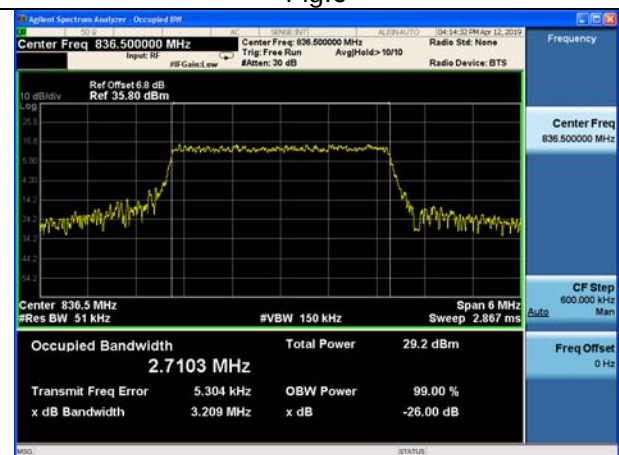


Fig.7

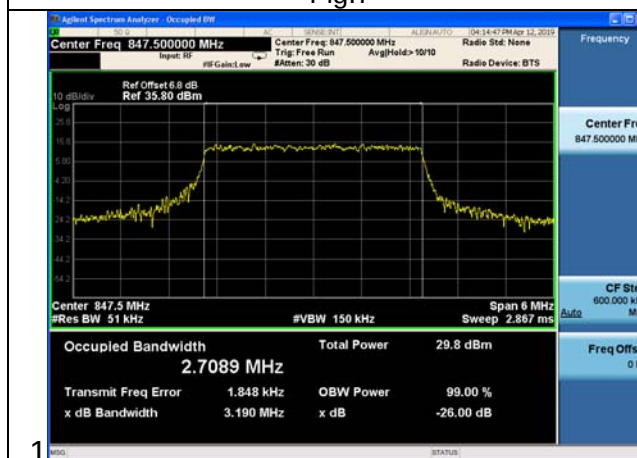


Fig.8

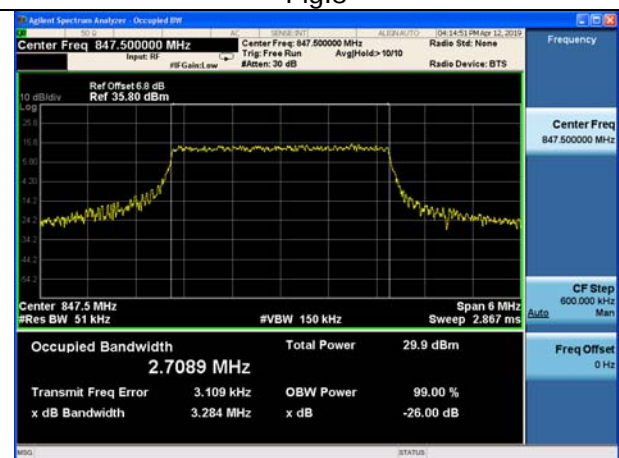
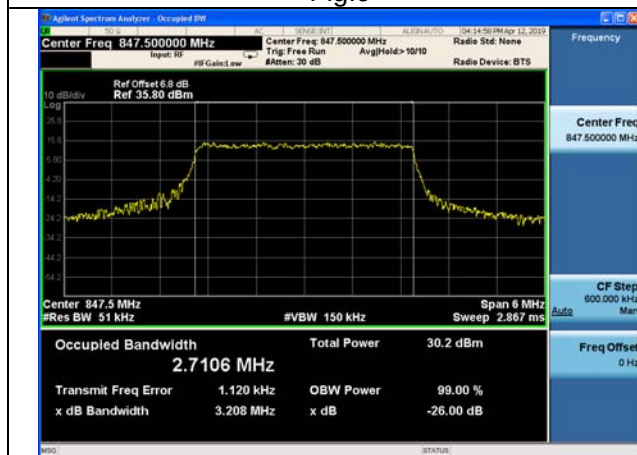


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
5	826.5	20425	5	25	0	4.4859	Fig.1	4.4811	Fig.2	4.4791	Fig.3
5	836.5	20525	5	25	0	4.4769	Fig.4	4.4843	Fig.5	4.4828	Fig.6
5	846.5	20625	5	25	0	4.4746	Fig.7	4.4759	Fig.8	4.4792	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
5	826.5	20425	5	25	0	5.046	Fig.1	5.022	Fig.2	5.032	Fig.3
5	836.5	20525	5	25	0	5.025	Fig.4	5.060	Fig.5	5.085	Fig.6
5	846.5	20625	5	25	0	5.051	Fig.7	4.888	Fig.8	5.096	Fig.9

Fig.1



Fig.2

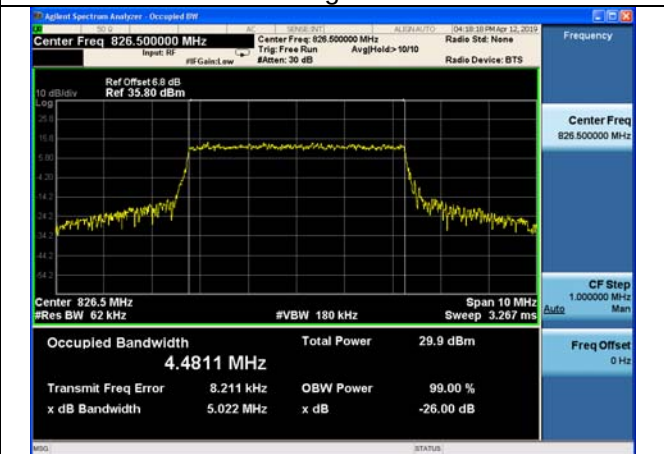


Fig.3

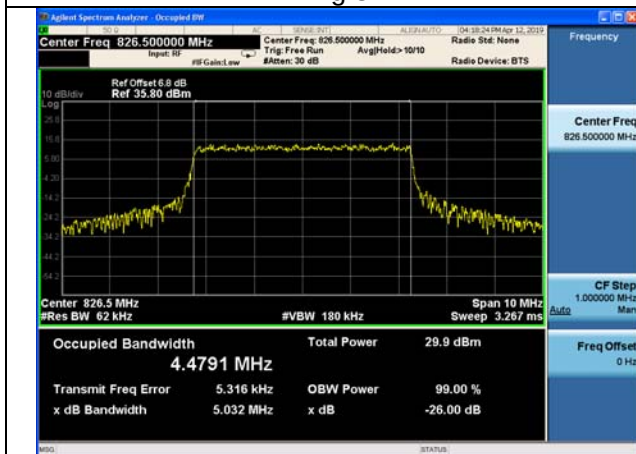


Fig.4

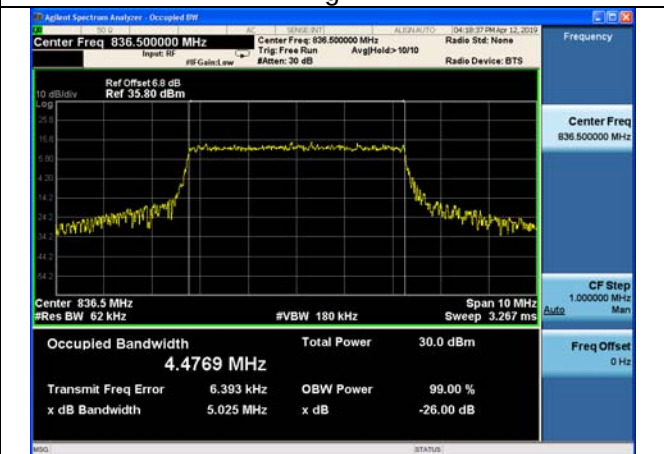


Fig.5

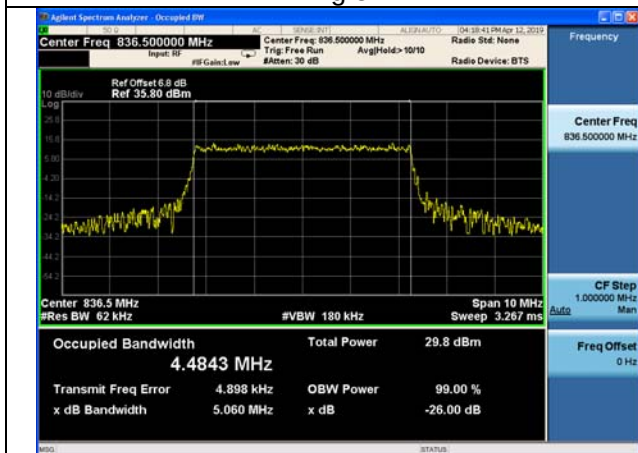


Fig.6

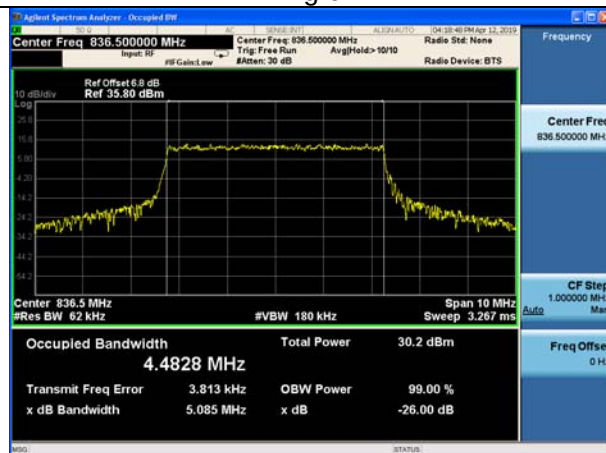


Fig.7

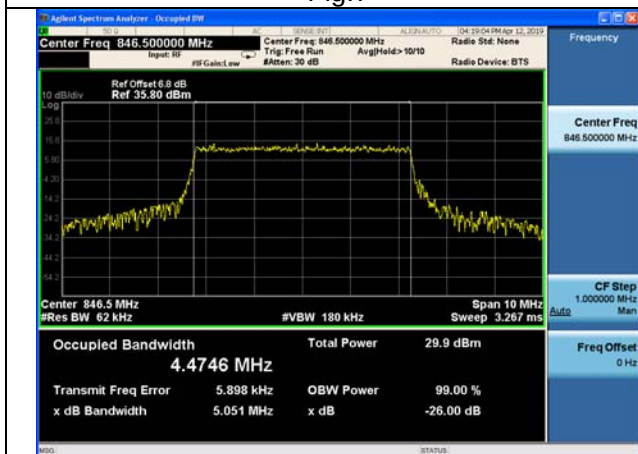


Fig.8

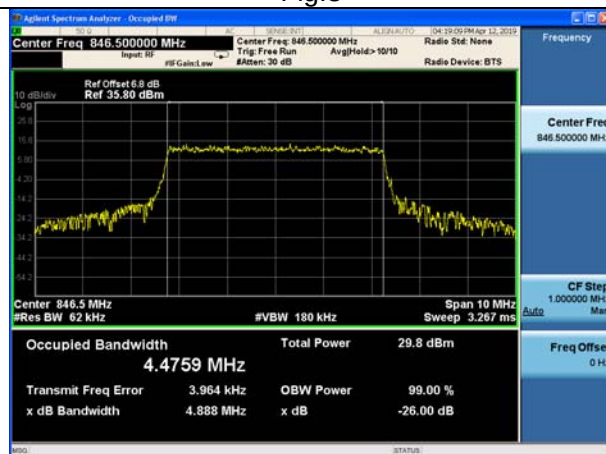
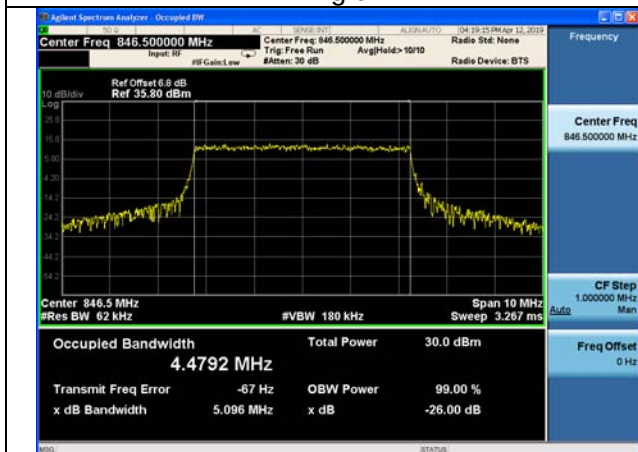


Fig.9



Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of 99% Power (MHz)					
						QPSK		16-QAM		64-QAM	
5	829	20450	10	50	0	8.9488	Fig.1	8.9554	Fig.2	8.9476	Fig.3
5	836.5	20525	10	50	0	8.9488	Fig.4	8.9395	Fig.5	8.9473	Fig.6
5	844	20600	10	50	0	8.9618	Fig.7	8.9516	Fig.8	8.9518	Fig.9

Band	Carrier frequency (MHz)	Channel(Low)	BW	RB Size	RB Offset	Bandwidth of -26dB transmitter power (MHz)					
						QPSK		16-QAM		64-QAM	
5	829	20450	10	50	0	9.896	Fig.1	10.080	Fig.2	9.893	Fig.3
5	836.5	20525	10	50	0	10.160	Fig.4	10.050	Fig.5	9.928	Fig.6
5	844	20600	10	50	0	10.060	Fig.7	10.280	Fig.8	10.220	Fig.9

Fig.1

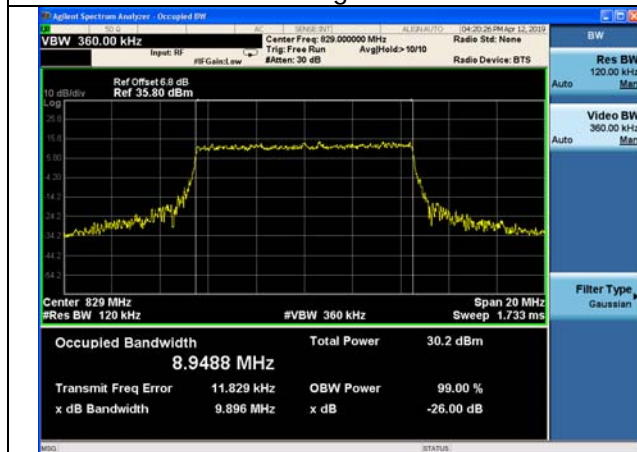


Fig.2

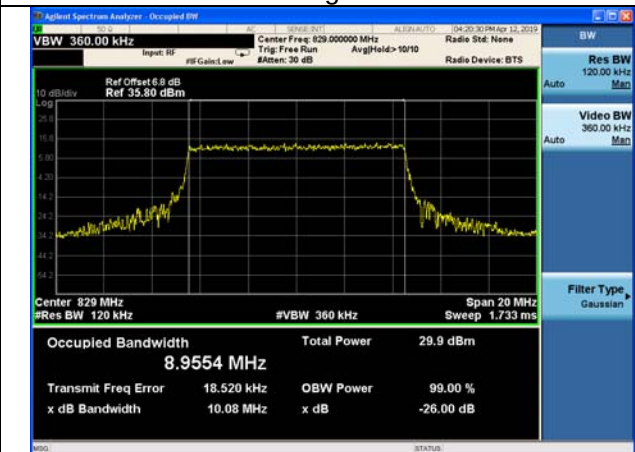


Fig.3

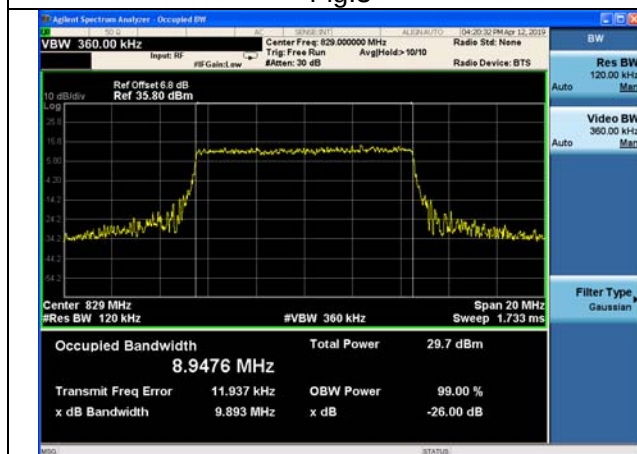


Fig.4

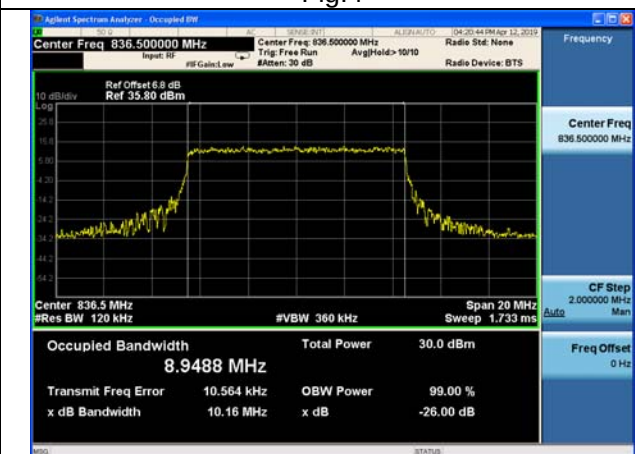


Fig.5

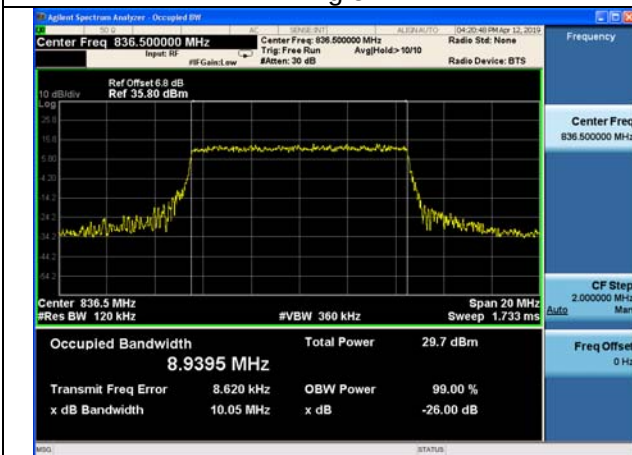


Fig.6

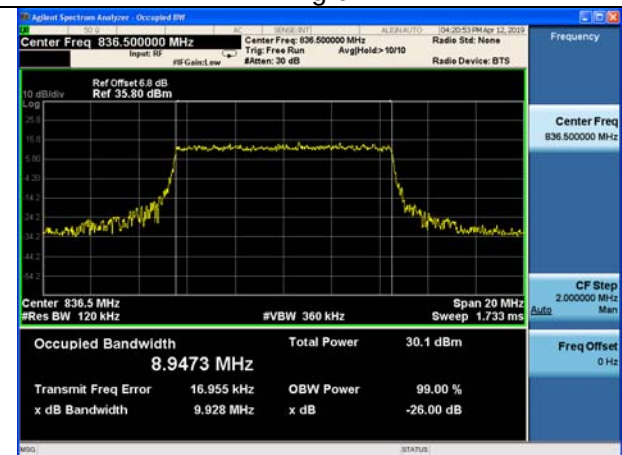


Fig.7

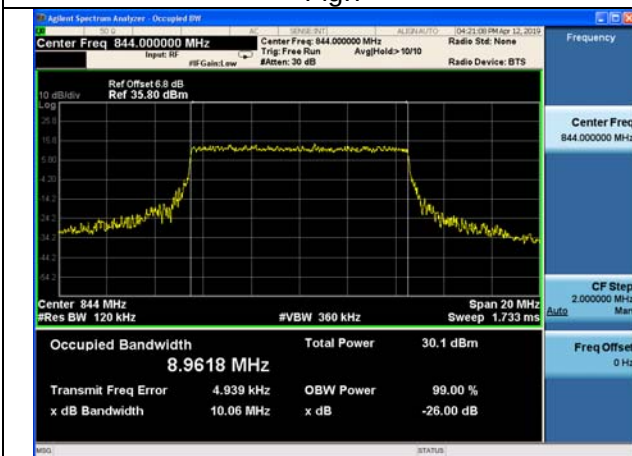


Fig.8

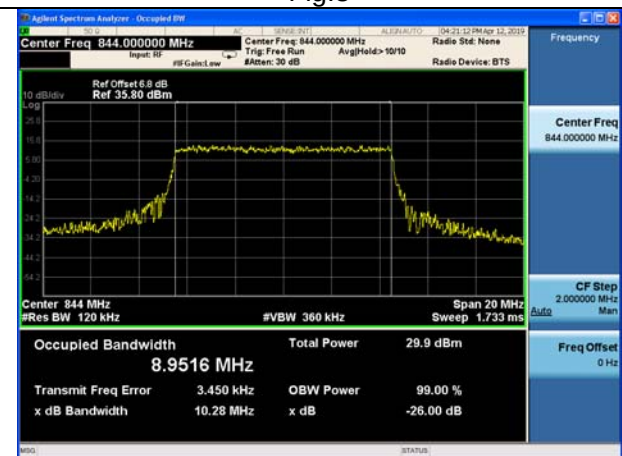
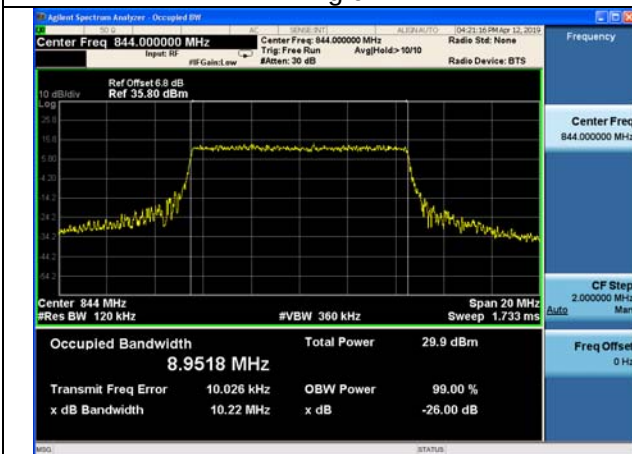
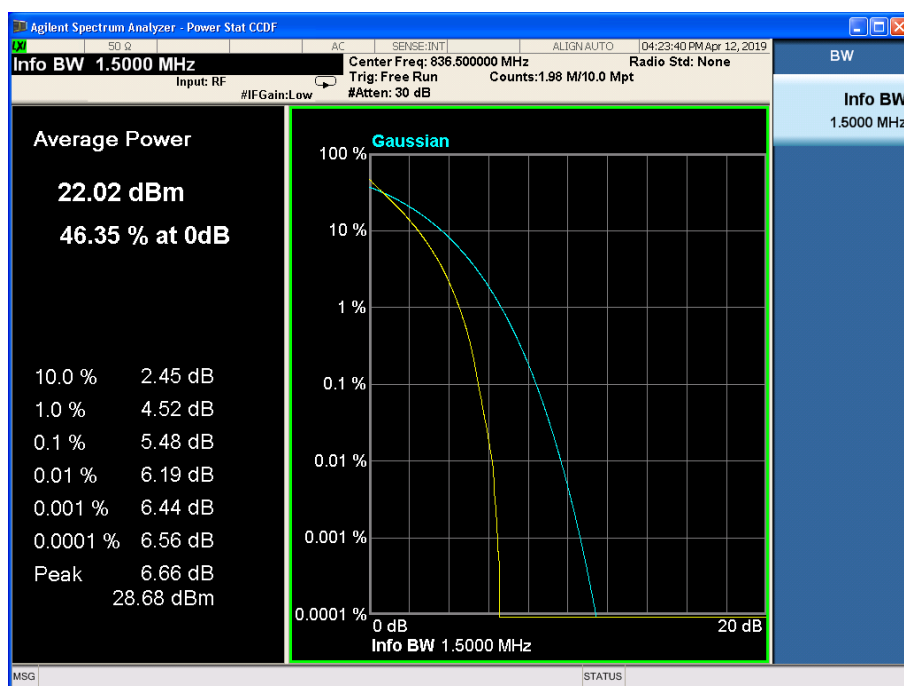


Fig.9

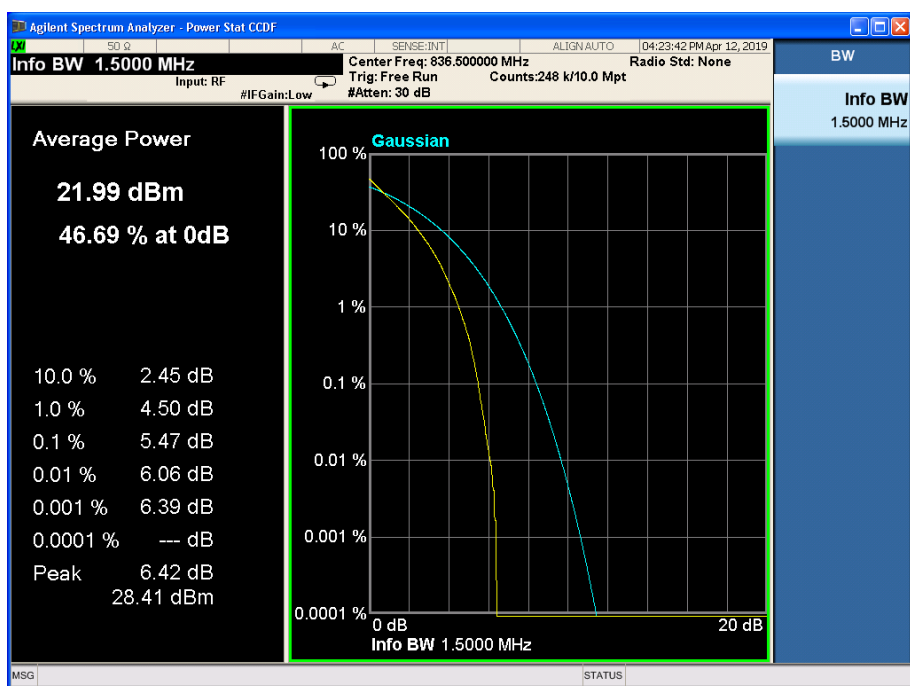


3 Peak-Average Ratio

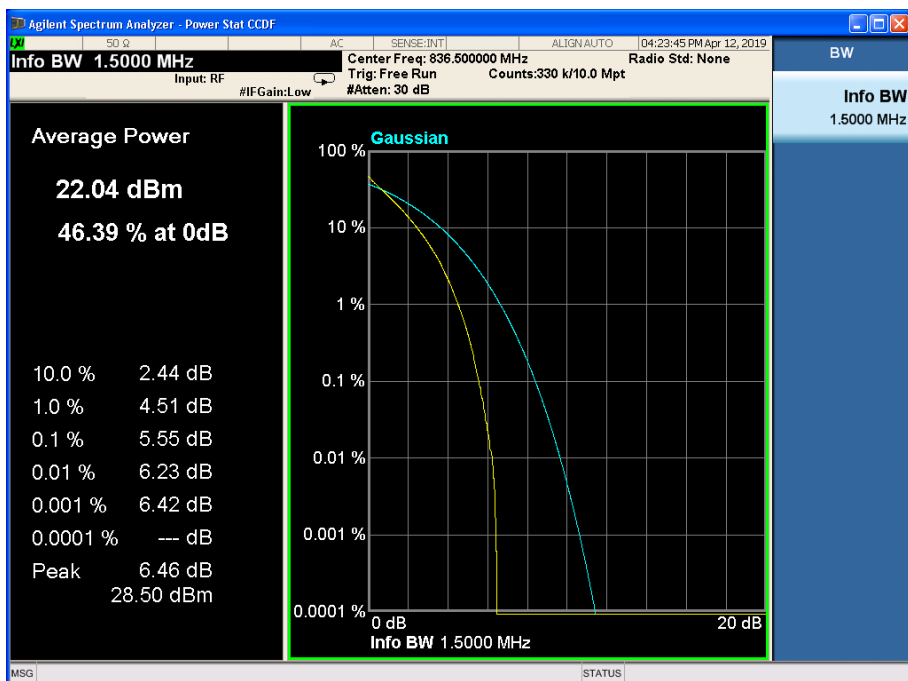
Test result:



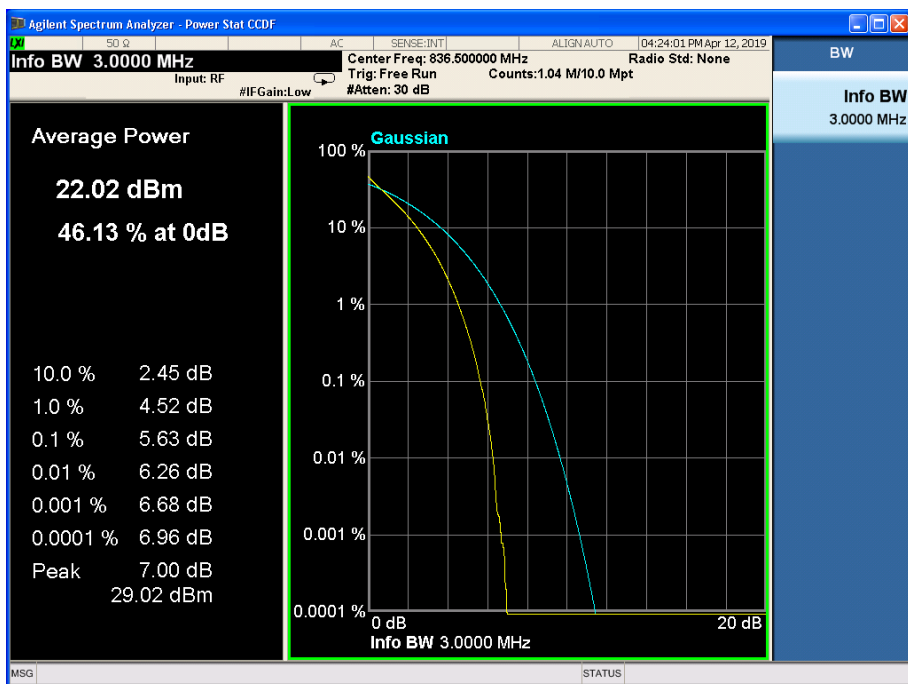
Peak-Average Ratio Plot(1.4MHz BW,QPSK,Band 5-mid Channel)



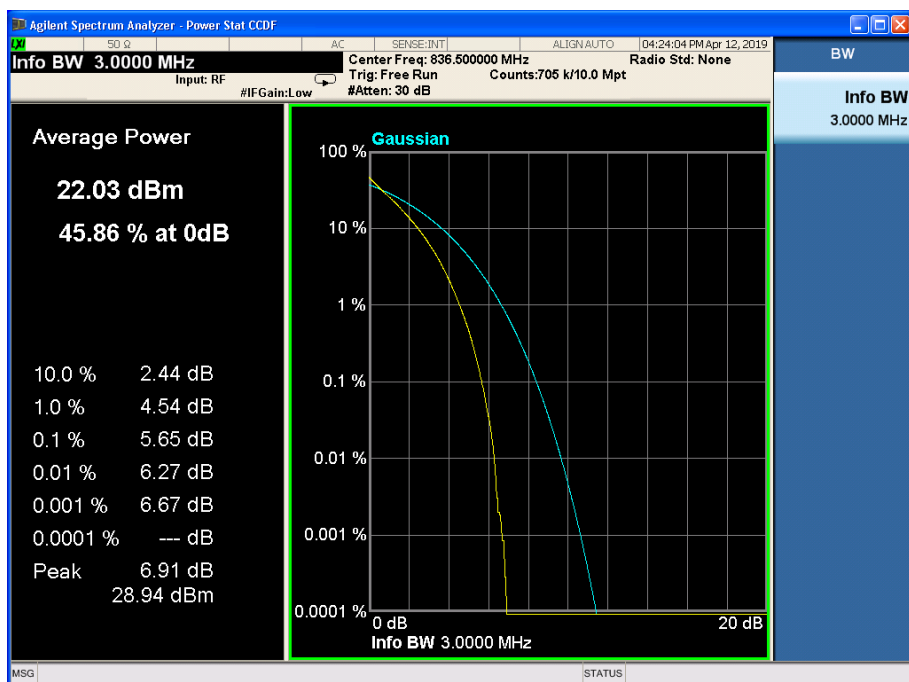
Peak-Average Ratio Plot(1.4MHz BW,16QAM,Band 5-mid Channel)



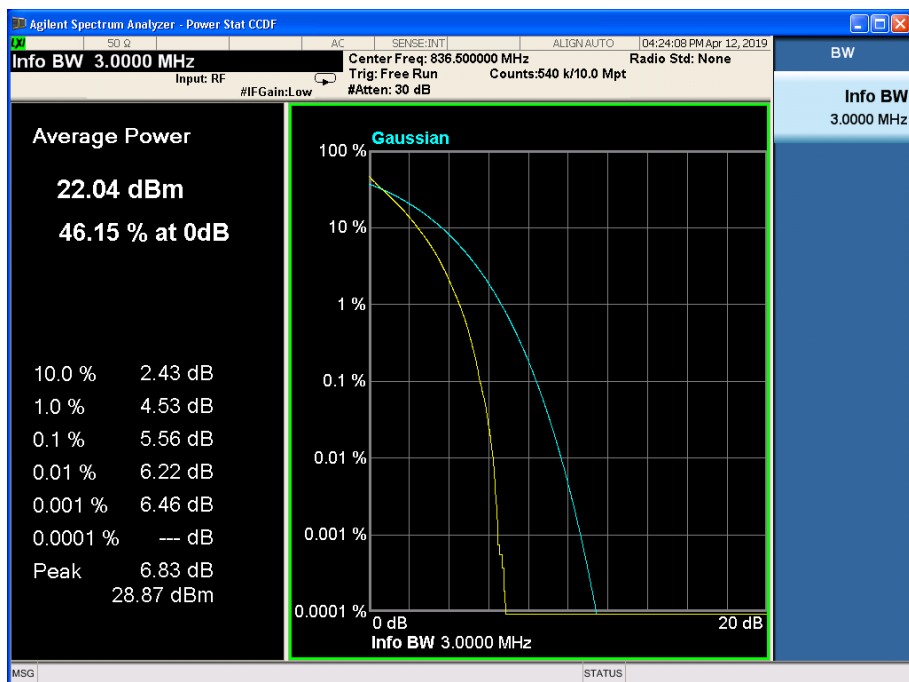
Peak-Average Ratio Plot(1.4MHz BW,64QAM,Band 5-mid Channel)



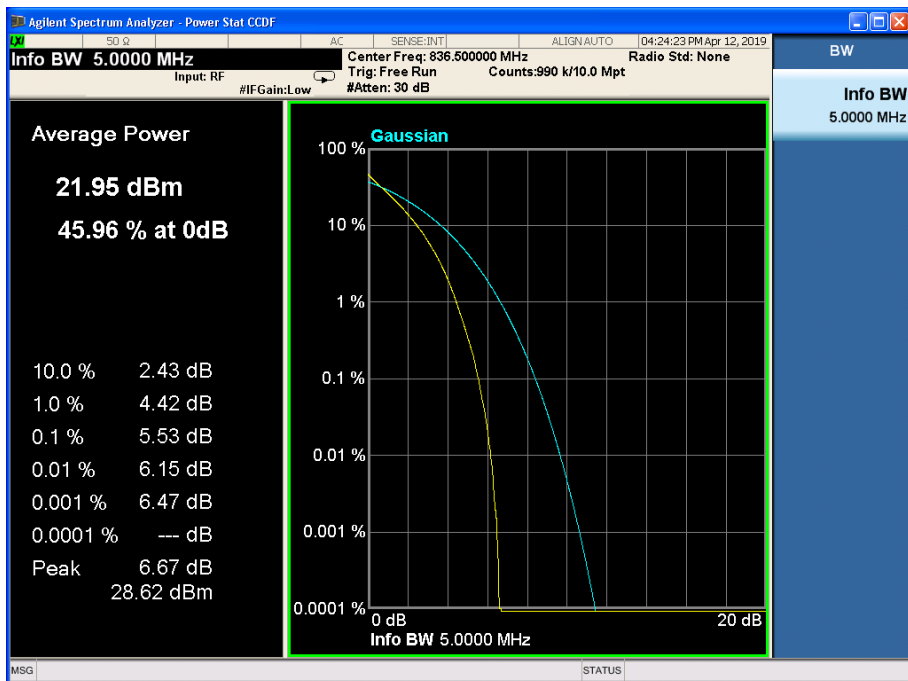
Peak-Average Ratio Plot(3MHz BW,QPSK,Band 5-mid Channel)



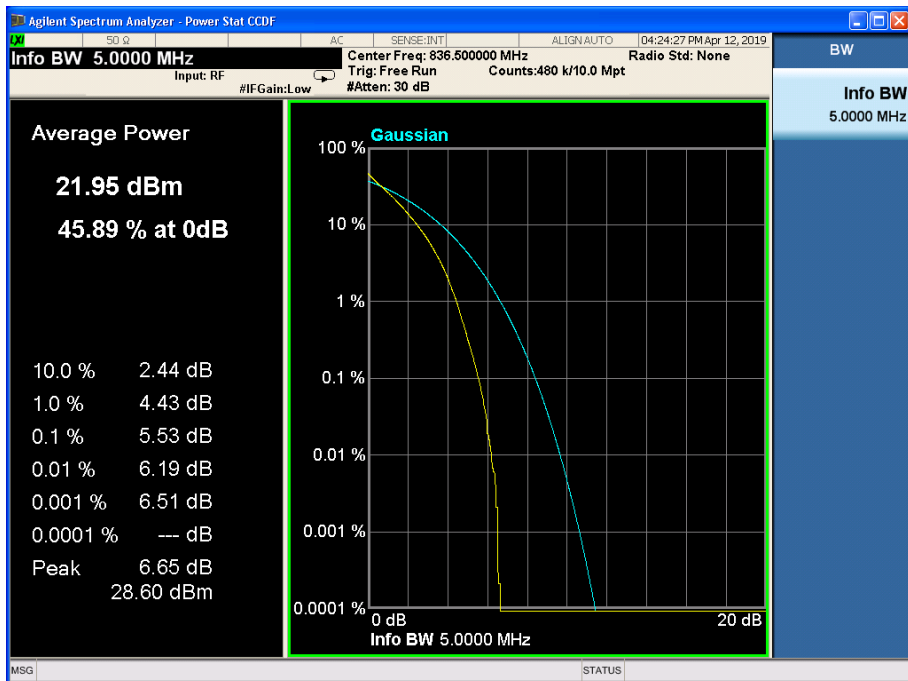
Peak-Average Ratio Plot(3MHz BW,16QAM,Band 5-mid Channel)



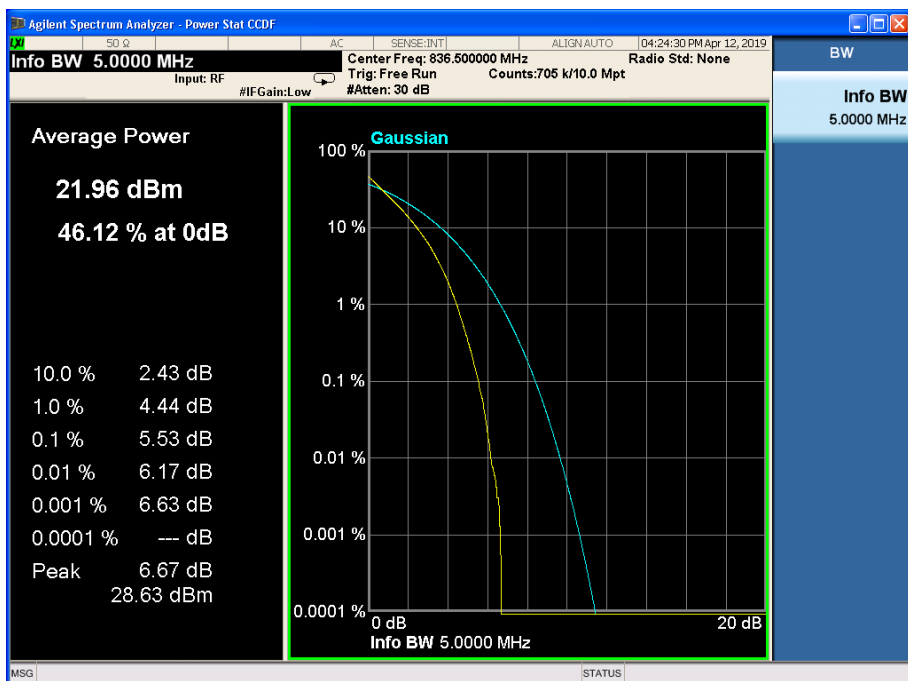
Peak-Average Ratio Plot(3MHz BW,64QAM,Band 5-mid Channel)



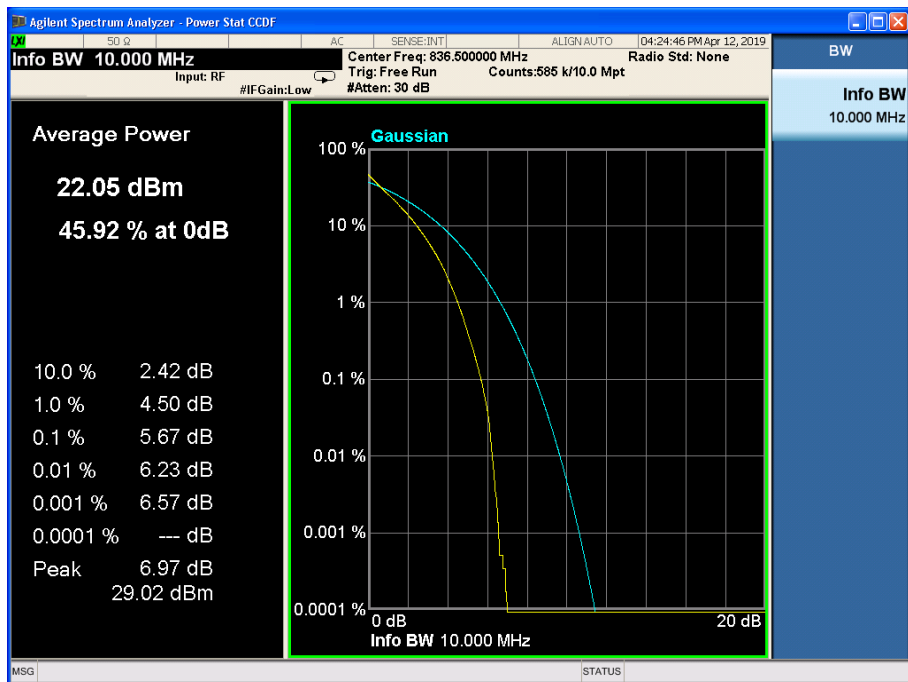
Peak-Average Ratio Plot(5MHz BW,QPSK,Band 5-mid Channel)



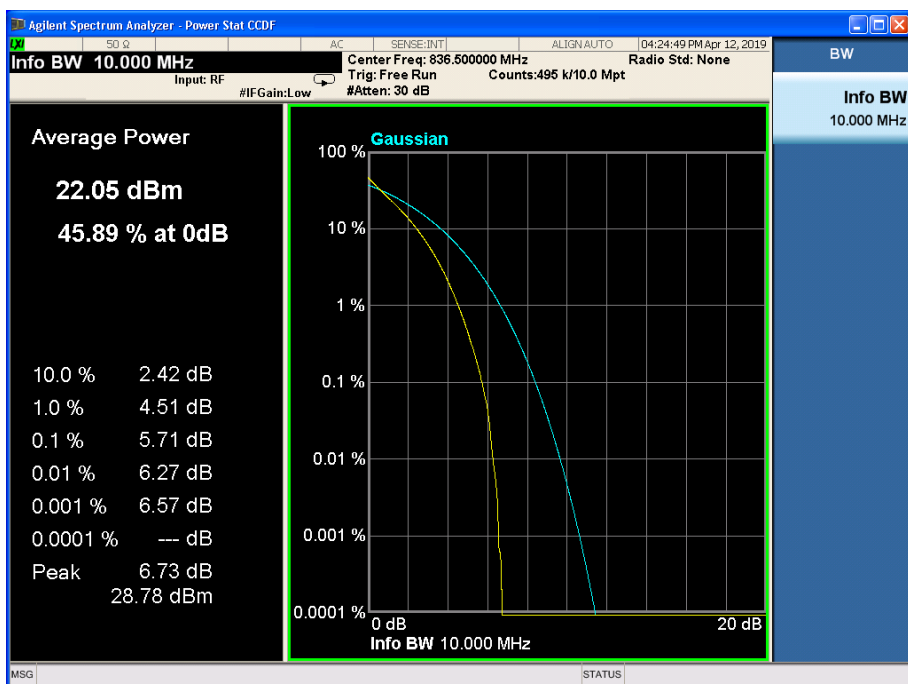
Peak-Average Ratio Plot(5MHz BW,16QAM,Band 5-mid Channel)



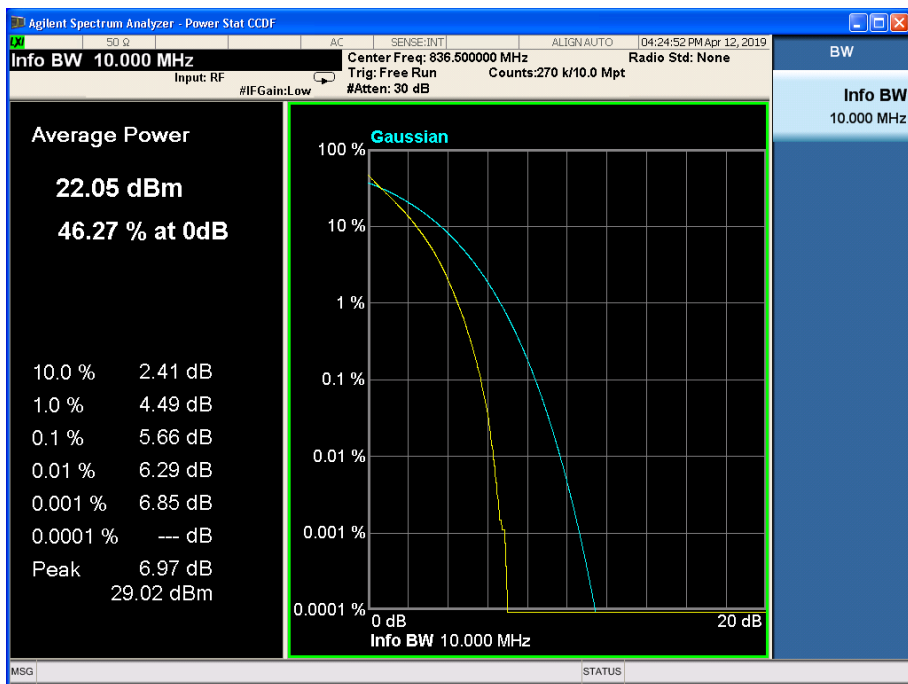
Peak-Average Ratio Plot(5MHz BW,64QAM,Band 5-mid Channel)



Peak-Average Ratio Plot(10MHz BW,QPSK,Band 5-mid Channel)



Peak-Average Ratio Plot(10MHz BW,16QAM,Band 5-mid Channel)



Peak-Average Ratio Plot(10MHz BW,64QAM,Band 5-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
5	829	20450	10	1	0	Fig.1

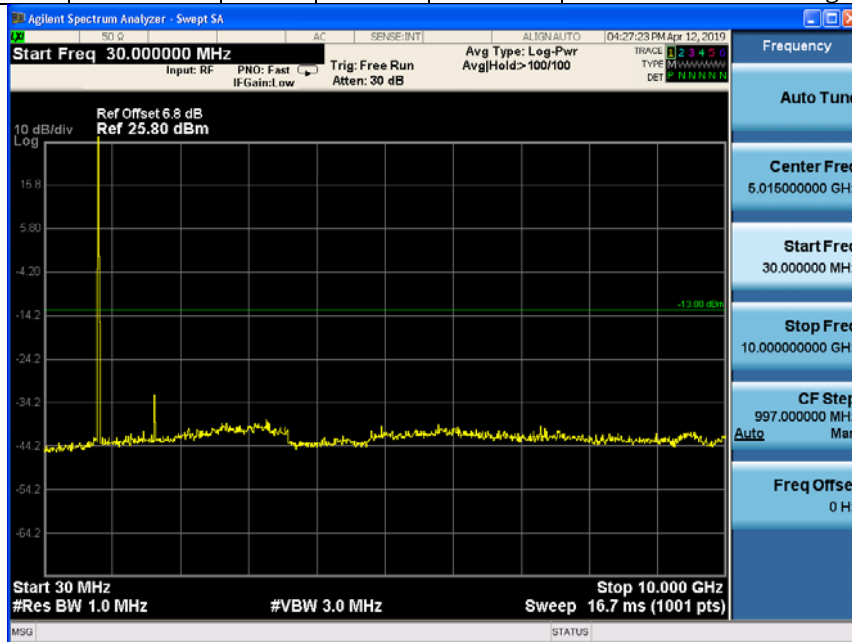


Fig.1

Band	Carrier frequency (MHz)	Channel (Mid)	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
5	836.5	20525	10	1	0	Fig.1

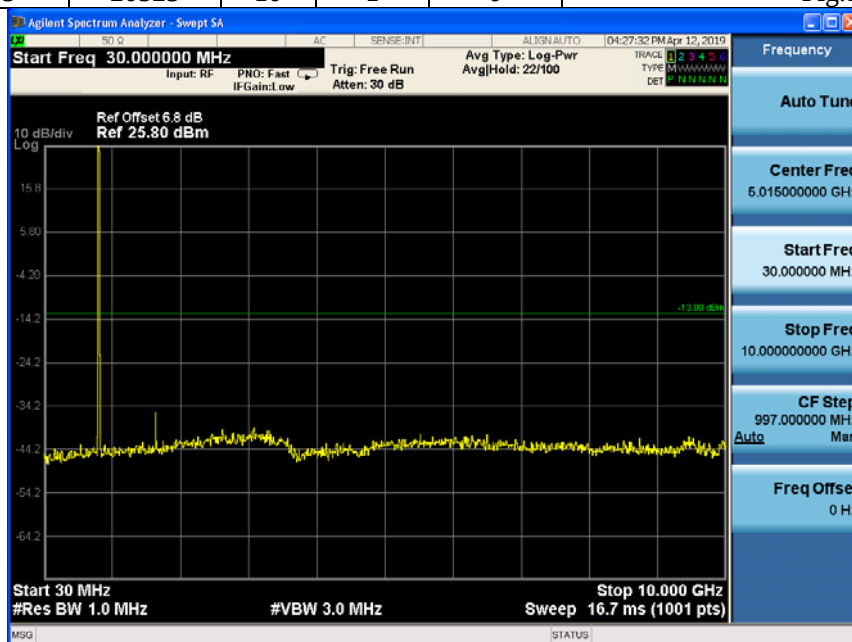


Fig.1

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Conducted Spurious Plot
						QPSK
5	844	20600	10	1	0	Fig.1

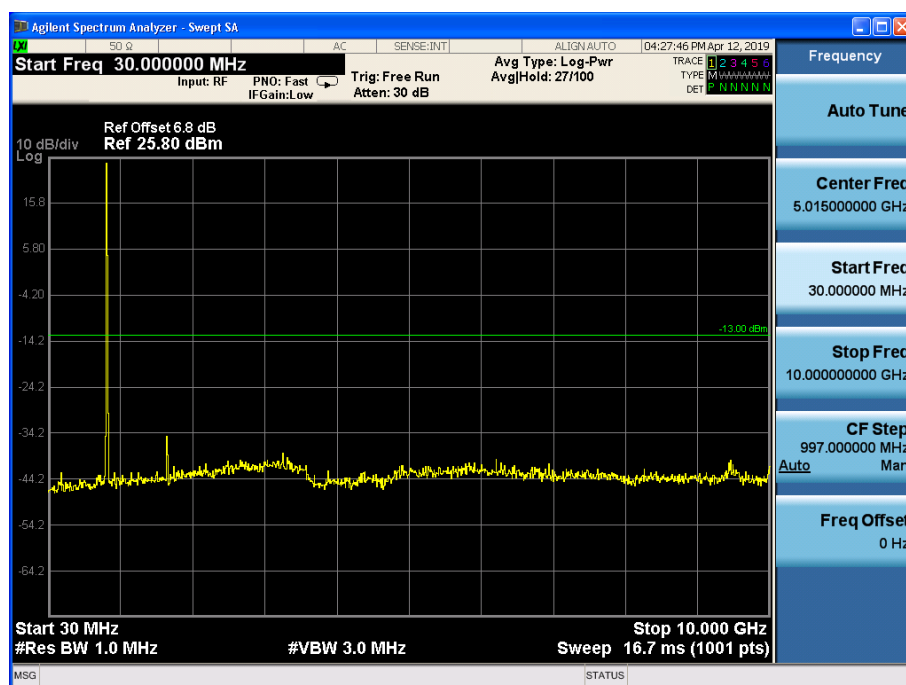


Fig.1

5 Band Edges Compliance

Test result

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	824.7	20407	1.4	1	0	Fig.1
				6	0	Fig.4

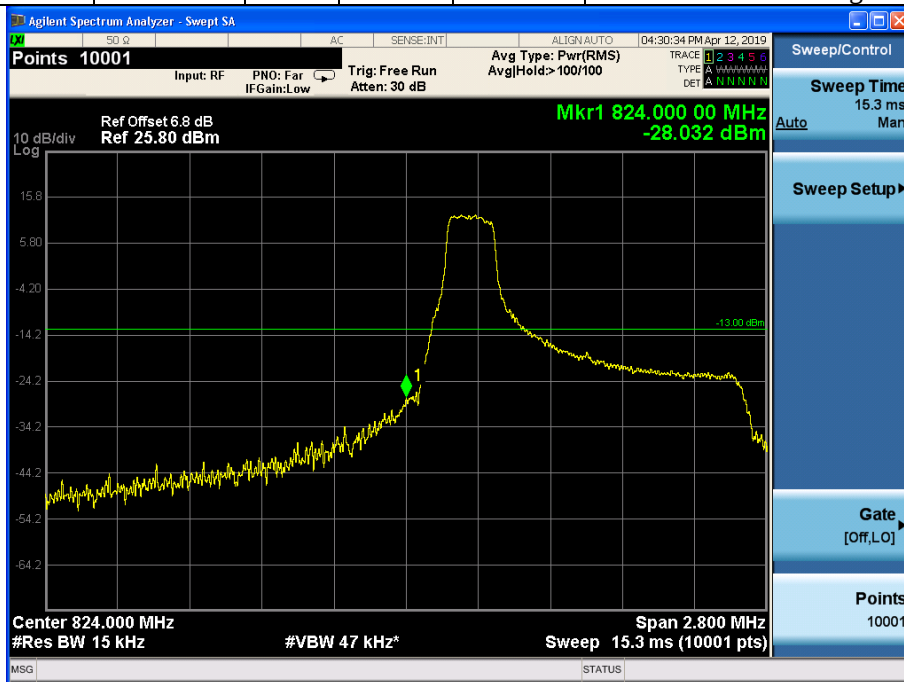


Fig.1

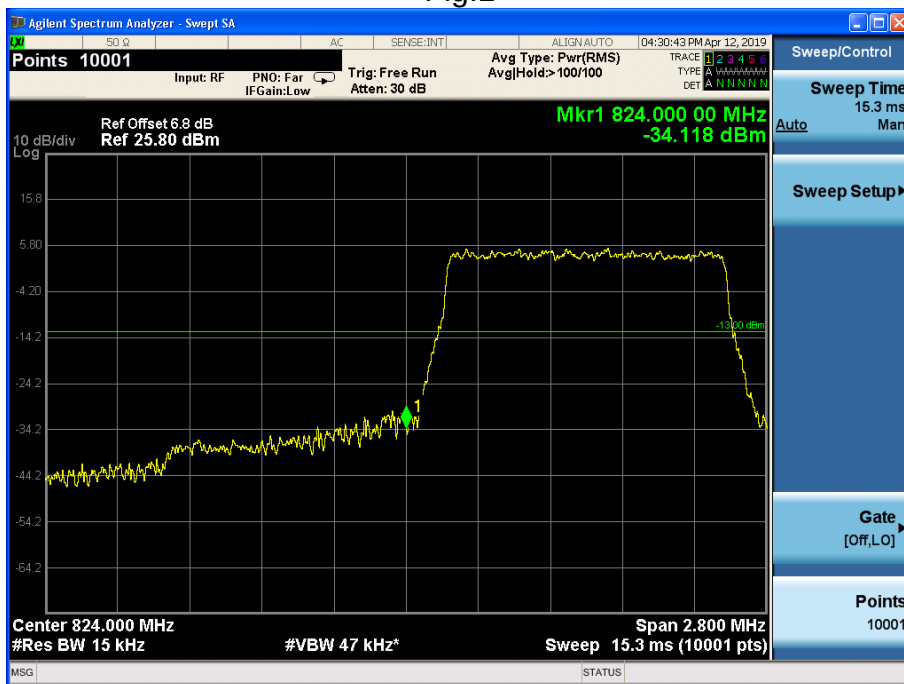


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	848.3	20643	1.4	1	5	Fig.1
				6	0	Fig.4

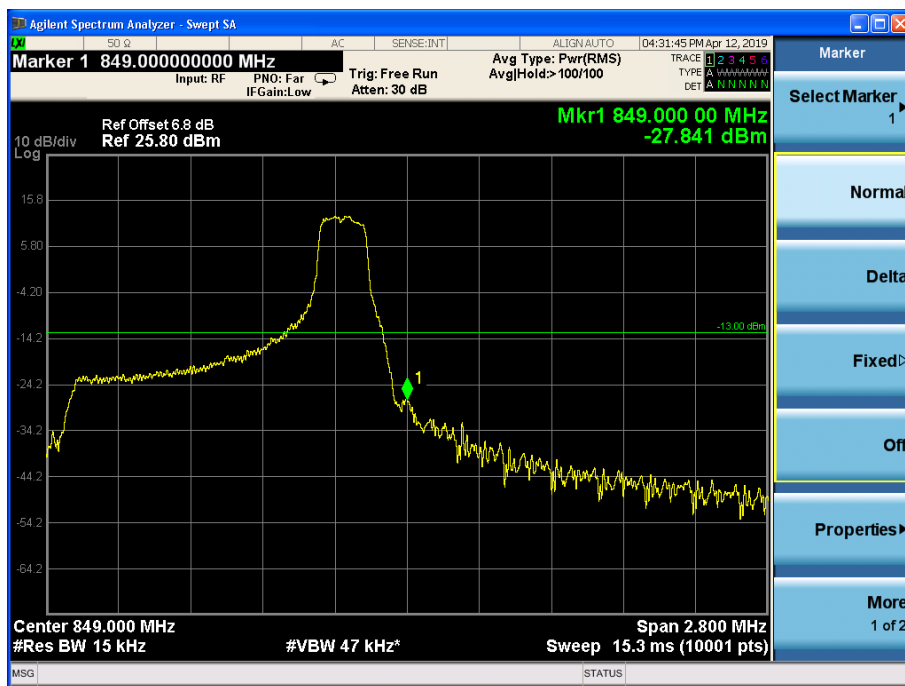


Fig.1

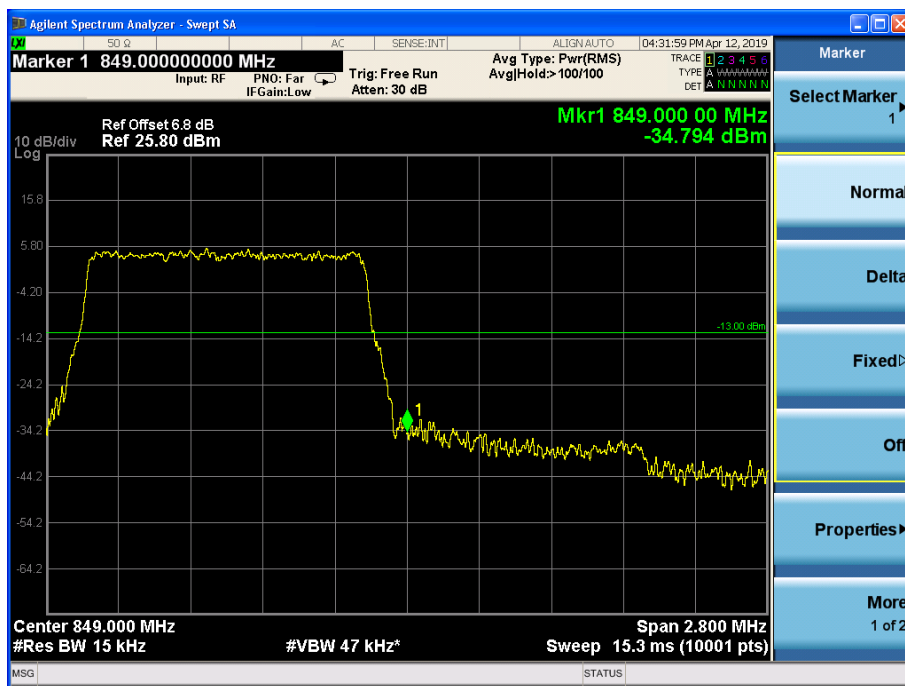


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	825.5	20415	3	1	0	Fig.1
				15	0	Fig.4

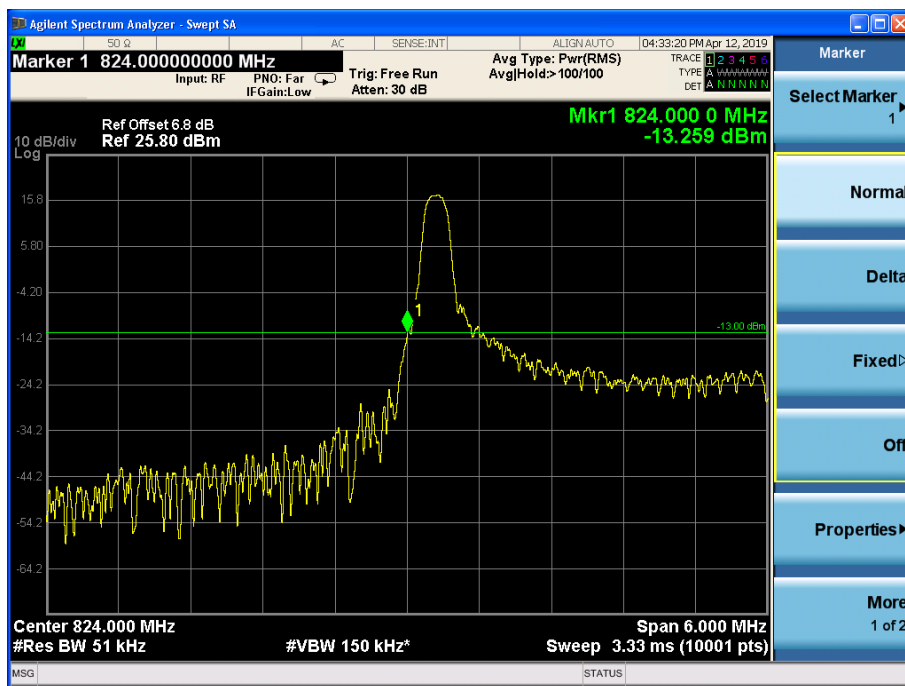


Fig.1

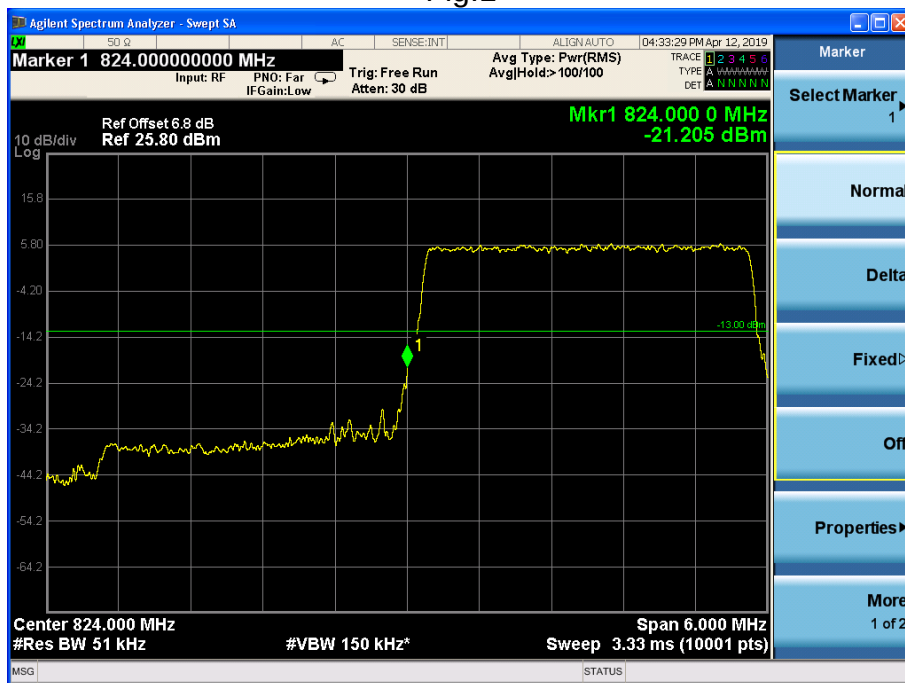


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	847.5	20635	3	1	14	Fig.1
				15	0	Fig.4

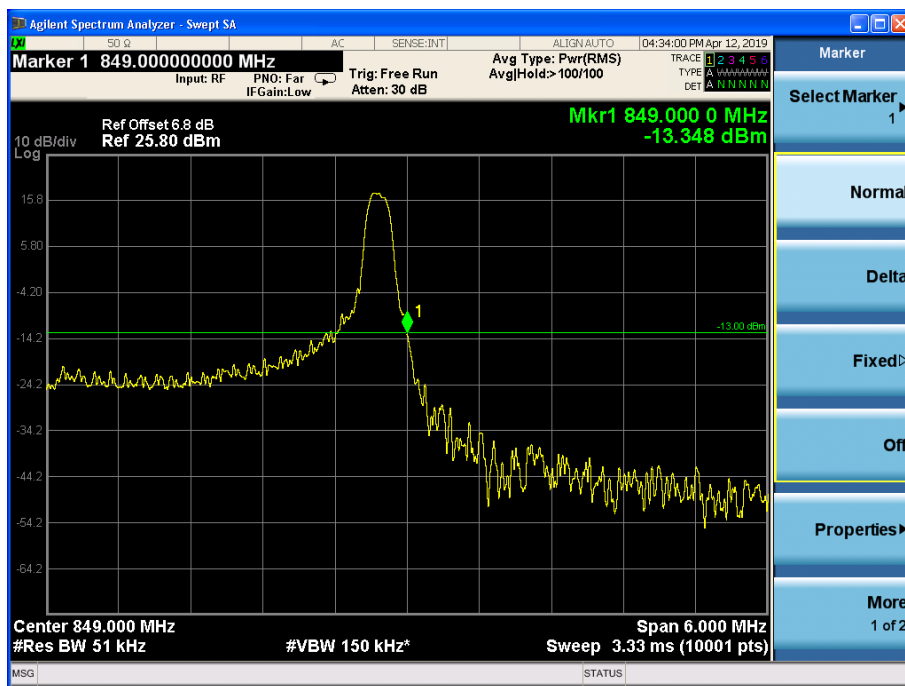


Fig.1

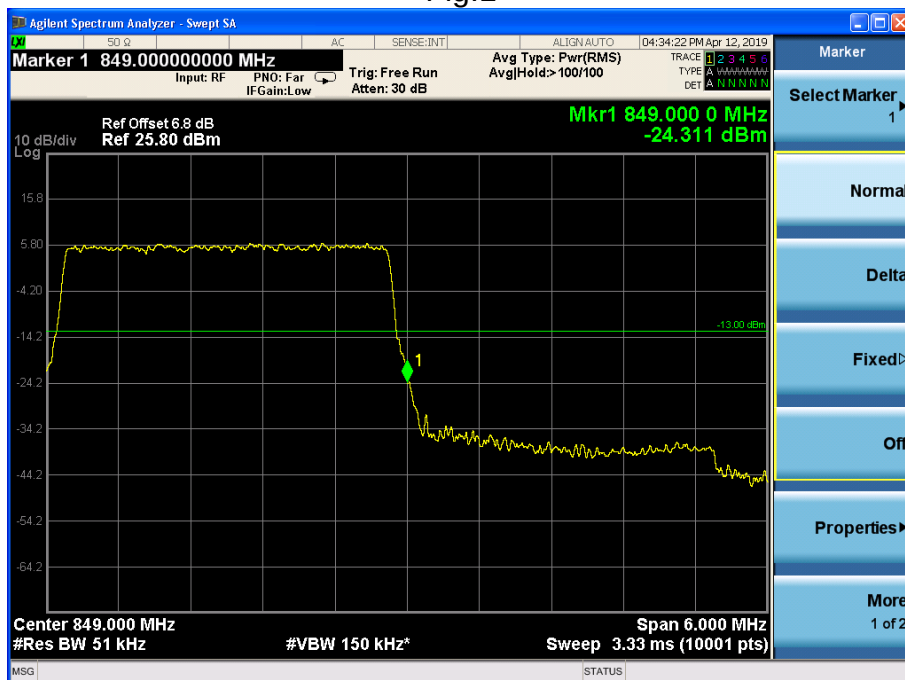


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	826.5	20425	5	1	0	Fig.1
				25	0	Fig.4

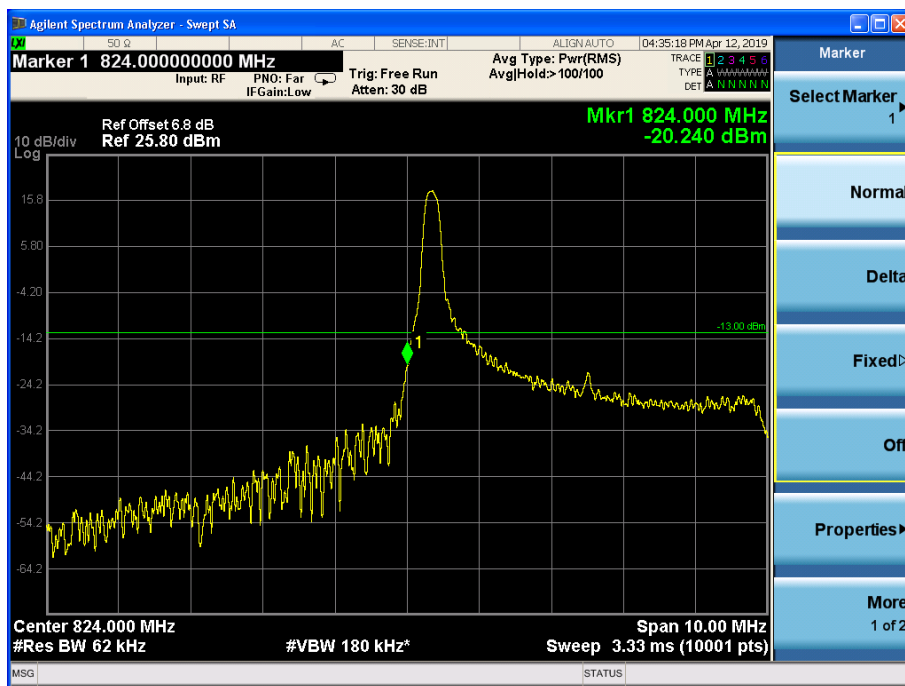


Fig.1

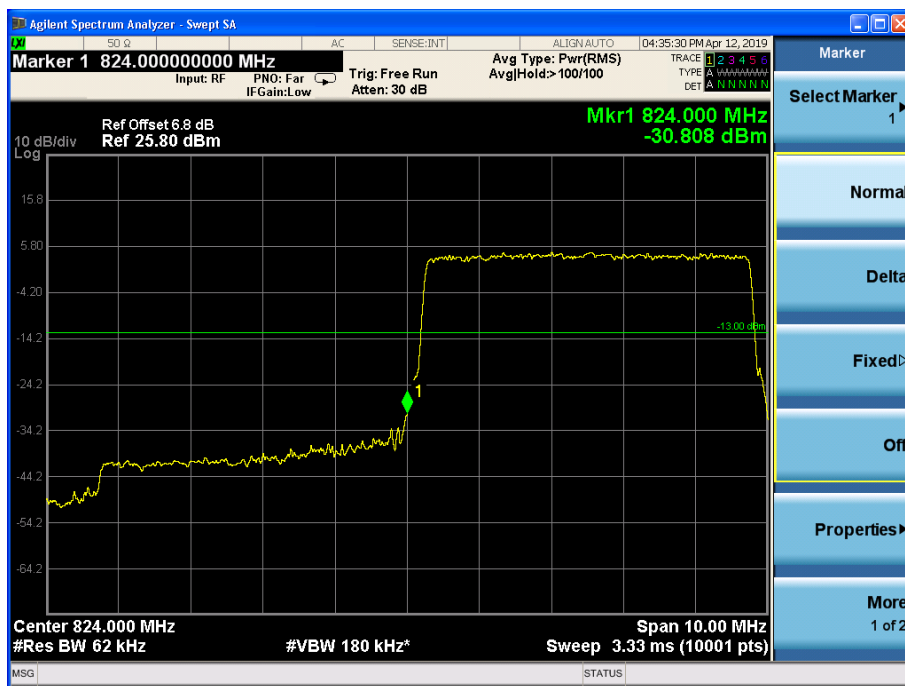


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	846.5	20625	5	1	24	Fig.1
				25	0	Fig.4

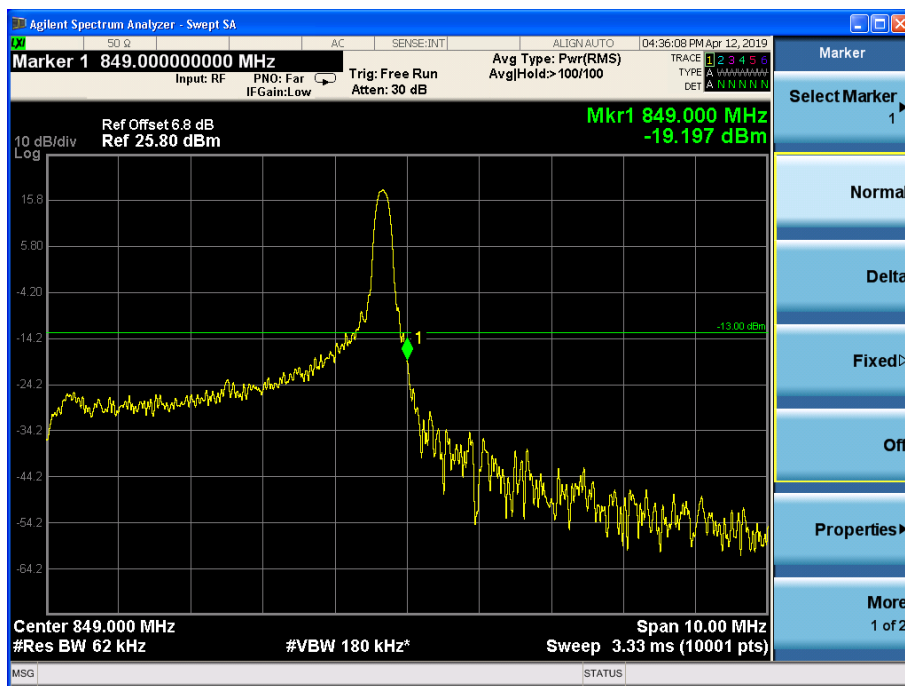


Fig.1

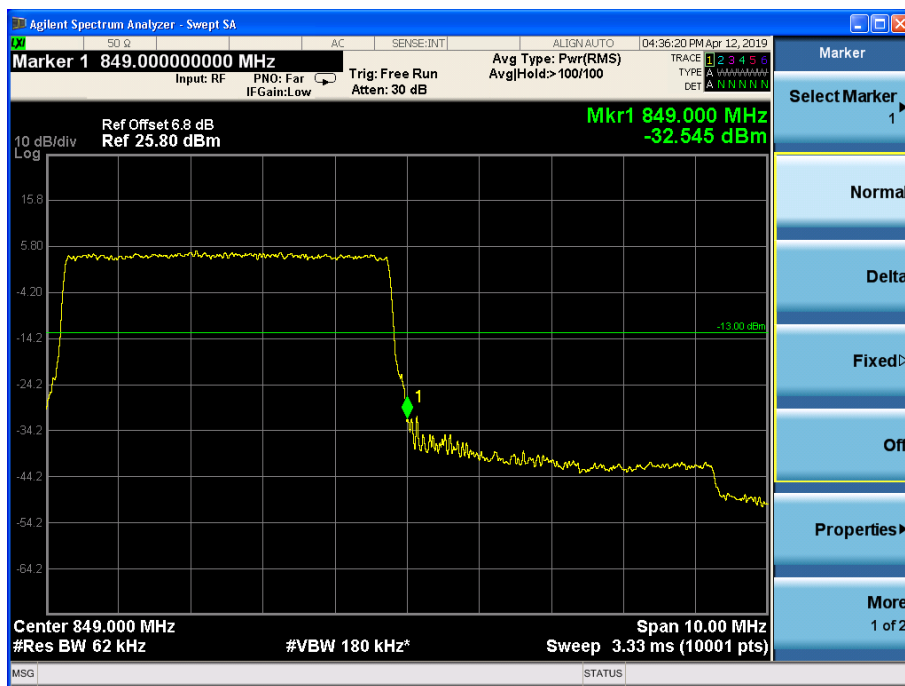


Fig.4

Band	Carrier frequency (MHz)	Channel (Low)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	829	20450	10	1	49	Fig.1
				50	0	Fig.4

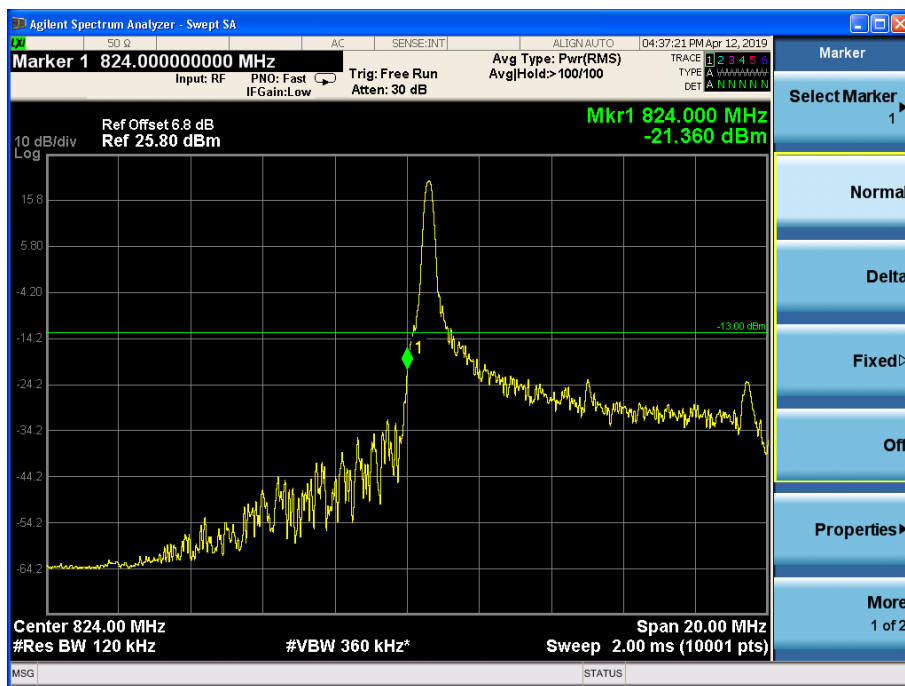


Fig.1

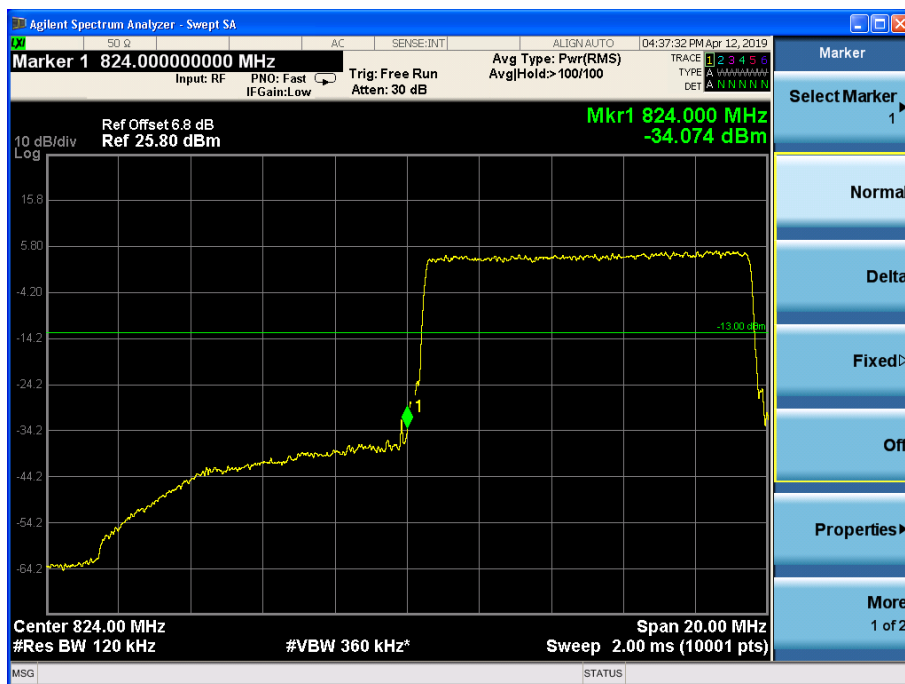


Fig.4

Band	Carrier frequency (MHz)	Channel (High)	BW	RB Size	RB Offset	Band EdgesPlot
						QPSK
5	844	20600	10	1	49	Fig.1
				50	0	Fig.4



Fig.1



Fig.4

6 Frequency Stability

Test result:

Temperature(°C)	Voltage	Test Result (ppm) Band5 Low Channel			
		1.4M	3M	5M	10M
0	NV	0.005	-0.002	0.005	-0.012
+10	NV	-0.014	0.013	0.006	0.003
+20	NV	0.019	-0.008	0.008	0.000
+30	NV	-0.013	0.012	-0.009	0.006
+40	NV	0.021	0.009	0.013	-0.008
+50	NV	0.016	-0.009	0.001	-0.008
+55	NV	0.012	0.008	-0.001	-0.007
+20	LV	-0.001	-0.011	-0.009	-0.012
+20	HV	0.013	0.012	-0.003	-0.003

Temperature(°C)	Voltage	Test Result (ppm) Band5 High Channel			
		1.4M	3M	5M	10M
0	NV	0.018	-0.010	0.018	0.001
+10	NV	-0.019	-0.013	-0.001	0.006
+20	NV	0.009	0.009	-0.006	0.003
+30	NV	-0.008	-0.012	0.007	-0.002
+40	NV	0.009	0.006	-0.006	0.010
+50	NV	0.019	0.014	0.012	-0.014
+55	NV	0.002	-0.004	0.005	0.007
+20	LV	0.018	0.006	0.010	-0.003
+20	HV	0.024	0.006	-0.007	-0.010