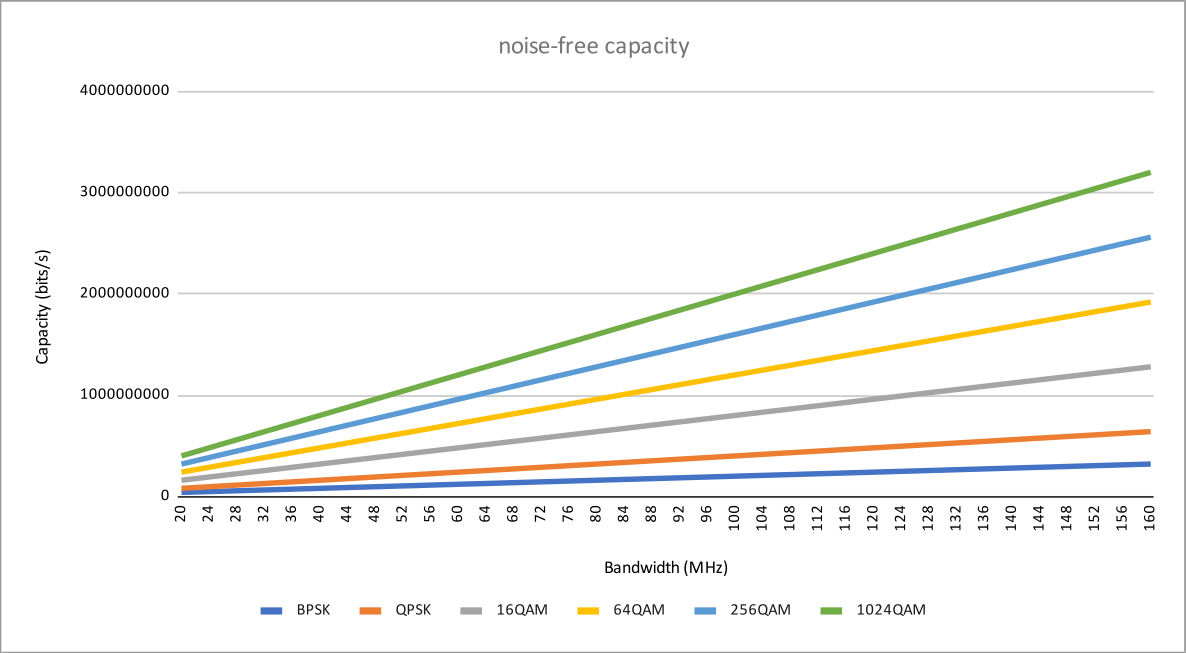


Q1

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39	78000000	156000000	312000000	468000000	624000000	780000000
40	80000000	160000000	320000000	480000000	640000000	800000000
41	82000000	164000000	328000000	492000000	656000000	820000000
42	84000000	168000000	336000000	504000000	672000000	840000000
43	86000000	172000000	344000000	516000000	688000000	860000000
44	88000000	176000000	352000000	528000000	704000000	880000000
45	90000000	180000000	360000000	540000000	720000000	900000000
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47	94000000	188000000	376000000	564000000	752000000	940000000
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56	112000000	224000000	448000000	672000000	896000000	1120000000
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65	130000000	260000000	520000000	780000000	1040000000	1300000000
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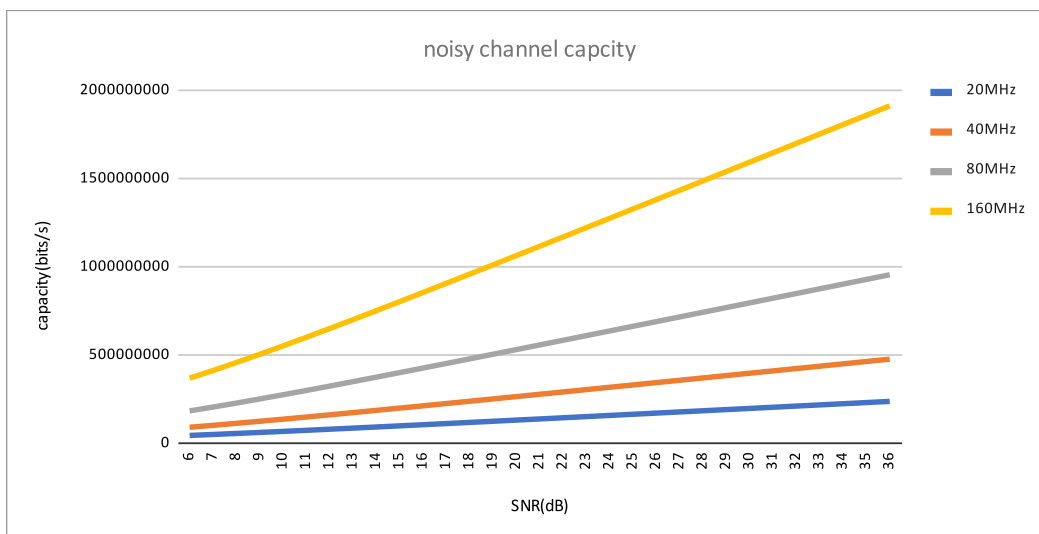
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83	166000000	332000000	664000000	996000000	1328000000	1660000000
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85	170000000	340000000	680000000	1020000000	1360000000	1700000000
86	172000000	344000000	688000000	1032000000	1376000000	1720000000
87	174000000	348000000	696000000	1044000000	1392000000	1740000000
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90	180000000	360000000	720000000	1080000000	1440000000	1800000000
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96	192000000	384000000	768000000	1152000000	1536000000	1920000000
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141	282000000	564000000	1128000000	1692000000	2256000000	2820000000
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154	308000000	616000000	1232000000	1848000000	2464000000	3080000000
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156	312000000	624000000	1248000000	1872000000	2496000000	3120000000
157	314000000	628000000	1256000000	1884000000	2512000000	3140000000
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159	318000000	636000000	1272000000	1908000000	2544000000	3180000000
160	320000000	640000000	1280000000	1920000000	2560000000	3200000000



Q2

SNR(dB)	SNR(Ratio)	20	40	80	160
6	3.981071706	46329123.59	92658247.19	185316494.4	370632988.7
7	5.011872336	51756287.47	103512574.9	207025149.9	414050299.8
8	6.309573445	57395744.38	114791488.8	229582977.5	459165955.1
9	7.943282347	63216088.48	126432177	252864353.9	505728707.8
10	10	69188632.37	138377264.7	276754529.5	553509059
11	12.58925412	75287887.34	150575774.7	301151549.4	602303098.7
12	15.84893192	81491704.7	162983409.4	325966818.8	651933637.6
13	19.95262315	87781179.35	175562358.7	351124717.4	702249434.8
14	25.11886432	94140405.25	188280810.5	376561621	753123242
15	31.6227766	100556153.5	201112306.9	402224613.9	804449227.7
16	39.81071706	107017523.1	214035046.2	428070092.3	856140184.7
17	50.11872336	113515598	227031196.1	454062392.1	908124784.3
18	63.09573445	120043128.9	240086257.8	480172515.5	960345031
19	79.43282347	126594249.2	253188498.4	506376996.8	1012753994
20	100	133164229.7	266328459.3	532656918.6	1065313837
21	125.8925412	139749269.2	279498538.4	558997076.7	1117994153
22	158.4893192	146346320	292692640.1	585385280.2	1170770560
23	199.5262315	152952943.2	305905886.5	611811773	1223623546
24	251.1886432	159567190	319134379.9	638268759.8	1276537520
25	316.227766	166187504.8	332375009.6	664750019.3	1329500039
26	398.1071706	172812647.8	345625295.6	691250591.1	1382501182
27	501.1872336	179441630.9	358883261.7	717766523.5	1435533047
28	630.9573445	186073667.5	372147334.9	744294669.9	1488589340
29	794.3282347	192708131.6	385416263.1	770832526.3	1541665053
30	1000	199344525.2	398689050.4	797378100.7	1594756201
31	1258.925412	205982452.3	411964904.5	823929809	1647859618
32	1584.893192	212621597.9	425243195.8	850486391.6	1700972783
33	1995.262315	219261711.8	438523423.7	877046847.4	1754093695
34	2511.886432	225902595.1	451805190.2	903610380.4	1807220761
35	3162.27766	232544089.6	465088179.2	930176358.4	1860352717
36	3981.071706	239186069.7	478372139.4	956744278.8	1913488558



Q3

$$C = 2B \log_2 M$$

$$C = B \log_2(1 + \text{SNR})$$

$$M = (1 + \text{SNR})^{1/2}$$

SNR(dB)	SNR(Ratio)	20	40	80	160
5	3.16227766	2.040166086	2.040166086	2.040166086	2.040166086
10	10	3.31662479	3.31662479	3.31662479	3.31662479
20	100	10.04987562	10.04987562	10.04987562	10.04987562
30	1000	31.63858404	31.63858404	31.63858404	31.63858404
45	31622.7766	177.8307527	177.8307527	177.8307527	177.8307527

For SNR=5dB, QPSK

For SNR=10dB, QPSK

For SNR=20dB, 16QAM

For SNR=30dB, 32QAM

For SNR=45dB, 256QAM