

Setting up DVB-T encoder for ATV repeater VK4RKC

7 MHz DVB-T COFDM Payload Data Rate					
Useable Symbol Rate		5.90625	Msym/s		
OFDM Bandwidth		6.66016	MHz		
Modulation Type	Code Rate	Guard Interval			
		1/4	1/8	1/16	1/32
QPSK 2 Bits/sym	1/2	4.354	4.838	5.123	5.278
	2/3	5.806	6.451	6.83	7.037
	3/4	6.532	7.257	7.684	7.917
	5/6	7.257	8.064	8.538	8.797
	7/8	7.62	8.467	8.965	9.237
16-QAM 4 Bits/sym	1/2	8.709	9.676	10.246	10.556
	2/3	11.612	12.902	13.661	14.075
	3/4	13.063	14.515	15.369	15.834
	5/6	14.515	16.127	17.076	17.594
	7/8	15.24	16.934	17.93	18.473
64-QAM 6 Bits/sym	1/2	13.063	14.515	15.369	15.834
	2/3	17.418	19.353	20.491	21.112
	3/4	19.595	21.772	23.053	23.751
	5/6	21.772	24.191	25.614	26.39
	7/8	22.861	25.401	26.895	27.71
Payload Data Rates Mbit/s					
Sys Mode	Symbol Time (us)	Guard Interval Length (us)			
		1/4	1/8	1/16	1/32
2K	256	64	32	16	8
8K	1024	256	128	64	32

- 1. Select the required number of transport streams that you will require. In this case select two (2) with each one occupying about 6M/s. This would make a total of 12M/s however one should allow around 1M/s for other digital data. Therefore the overall bit rate would be 13M/s. Next look at the above Table and select the requirements to provide the required bit rate.**
- 2. This gives us the following possibilities;**
 - (a) 16QAM – $\frac{3}{4}$ - $\frac{1}{4}$ Guard band – 13.063M/s**
 - (b) 16QAM – $\frac{2}{3}$ – $\frac{1}{8}$ Guard Band – 12.902M/s**
 - (c) 64QAM – $\frac{1}{2}$ - $\frac{1}{4}$ Guard Band – 13.063M/s**
- 3. The exact one to use can be determined during testing of the system.**

Hope this helps and lets give it ago.

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