

The Maximum Occupied bandwidth is a calculated value using Carson's rule;

$$BW = 2 \times \text{max. dev.} + 2 \times \text{highest modulated freq.}$$

in our case;

$$\text{max deviation} = 5.2 \text{ kHz}$$

$$\text{max modulation freq.} = 4800 \text{ Hz}$$

$$BW = (2 \times 5.2 \text{ kHz}) + (2 \times 4800 \text{ Hz})$$

$$BW = 10.4 \text{ kHz} + 9600 \text{ Hz}$$

$$BW = 20 \text{ kHz}$$