

Name of Grantee: HM Electronics, Inc.

OCCUPIED BANDWIDTH

that between the lower and upper limits of the signal where the mean power is $\phi.5\%$ (-23 dB) of the total mean power.

Necessary Bandwidth

that part of the occupied bandwidth sufficient to ensure transmission of the information at the rate and with the quality required.

for Angle Modulated Telephony (FM Voice)
FORMULA FOR NECESSARY BANDWIDTH

$$B_N = 2M + 2DK$$

B_N = necessary Bandwidth
 M = MAX Modulation Freq in Hz
 D = Peak deviation in Hz
 $K = 1$

for Base 400 $M = 2.5 \text{ kHz}$
 $D = 3.1 \text{ kHz}$

$$\begin{aligned} \text{So } B_N &= 2(2.5\text{k}) + 2(3.1\text{k}) \\ &= 5\text{k} + 6.2\text{k} \\ &= 11.2 \text{ kHz} \end{aligned}$$

Licenses on Broadcast Frequencies used in Quick Service Restaurants have all been submitted with EMISSIONS designator 11K2F3E (11.2 kHz necessary Bandwidth)