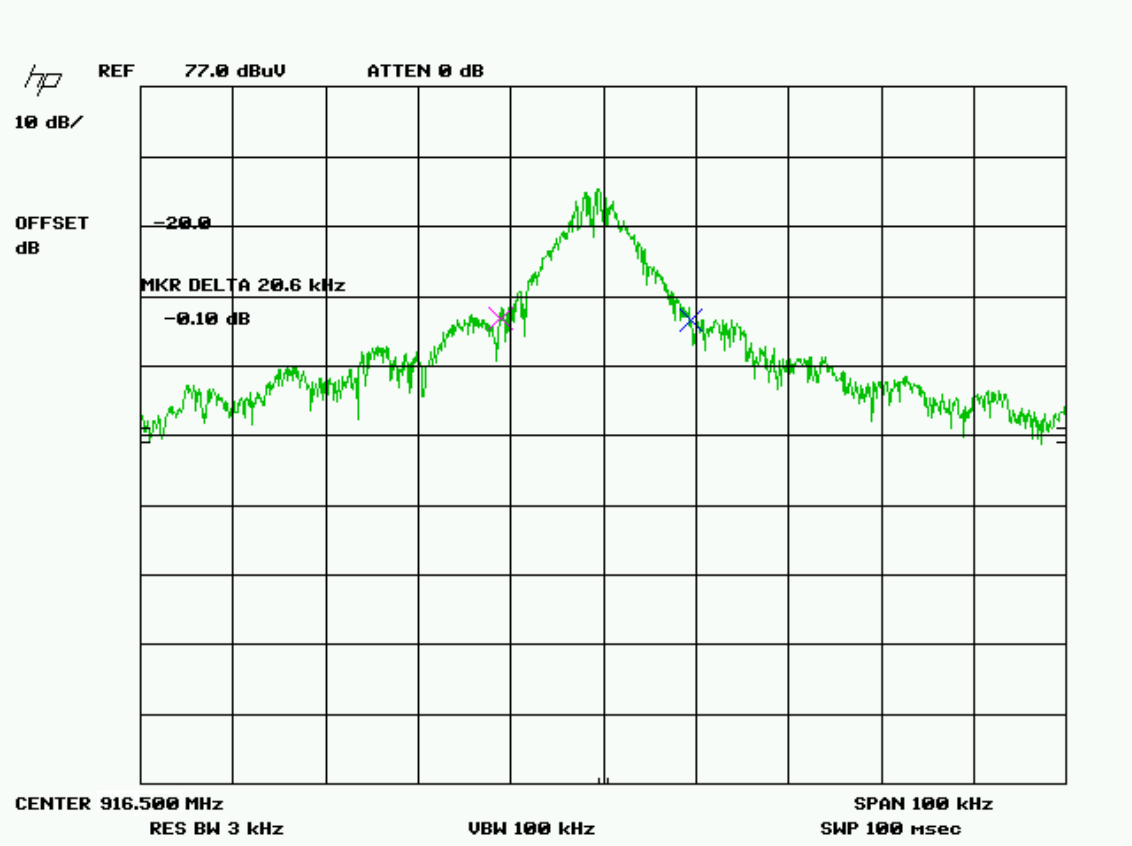
ACTIVE WAVE INC.
FCC ID: VJRTAG-142

OCCUPIED BANDWIDTH PLOT



CALCULATION OF DUTY CYCLE

The period of the pulse train is determined by observing it on an oscilloscope or a spectrum analyzer with zero (0) frequency span. A plot is then made of the pulse train with a sweep time of 100 milliseconds. This sweep determines the duration of the pulse train. This sweep allows the determination of the number of and type of pulses, i.e. long & short. Plots are then made showing the duration of each type of pulse and its duration. From the 100 ms plot, the number of a given type of pulse is then multiplied by the duration of that type pulse. This allows the calculation of the amount of time the DUT is on within 100 ms. If the pulse train is longer than 100 ms then this number is multiplied by 100 to determine the percentage "ON TIME". If the pulse train is less than 100 ms the total on time is divided by the length of the pulse train and then multiplied by 100 to determine the percentage "ON TIME". The average field strength is determined by multiplying the peak field strength by the percent "ON TIME" in dB's.

Duration of all long pulse =
Duration of all short pulses =
Total on time = 26.6 ms
The period = 100 ms
dB = 20*log(ON TIME)/PERIOD
dB = 20*log(26.6/100)
dB = 11.5 dB

In this case the whole pulse train is considered on time and the period is taken as 100ms. The manufacturer considers this worst case.