

frequency to 2500 Hz.

(c) Increase audio signal generator output until transmitter is 50% modulated. Note signal voltage. Further increase generator output until voltage is 16 dB (6.3 times) greater.

(d) Energize transmitter; remove modulation and record Bird Wattmeter reading and spectrum analyzer carrier amplitude reading. Check that these are in agreement within 1 dB.

(e) Reapply modulation. Set spectrum analyzer resolution to 300 Hz. For each carrier sideband observed, record amplitude as indicated by spectrum analyzer. Add 40 dB (to adjust for the two 20 dB attenuators) and convert to power, for each sideband.

Results: FCC ID BULM15
M15 Pre-production Unit #4 Occupied
Bandwidth Measurements - December 18, 1990

Sideband Spectrum Frequency Anal.	Spectrum dBm	Add 40 dBm	Sideband Power, watts
17500	-52	-12	0.000063
15000	-52	-12	0.000063
12500	-44	-4	0.000398
10000	-42	-2	0.000631
7500	-33	7	0.005012
5000	-31	9	0.007943
2500	-9	31	1.258925
0	-3	37	5.011872
-2500	-10	30	1.000000
-5000	-33	7	0.005012
-7500	-35	5	0.003162
-10000	-51	-11	0.000079
-12500	-44	-4	0.000398
-15000	-52	-12	0.000063
-17500	-52	-12	0.000063

Total Power: 7.293686

(a) Tests were made on M15 (FCC ID BULM15) unit #4, at 126.2 Mhz. Carrier power was 5.5 watts by the Bird wattmeter and +37 dBm (5.0 watts) by the spectrum analyzer.

(b) 30 mv rms modulation at 1 KHz at the microphone input gave 50% transmitter modulation.

(c) The audio signal generator output was increased to 16 dB over 30 mv, or 189 mv, the microphone input level used for these tests.

(d) The carrier and sideband amplitudes indicated by the spectrum analyzer are presented in the table below. The power of any sidebands beyond 17.5 KHz from the carrier was less than -15 dBm, (-52 dBc) or .00000316 watts. The sum of all recorded sidebands, plus carrier, was 7.294 watts. 0.5% of 7.294 watts is .03647 watts. We conclude that the occupied bandwidth is well below the 25 KHz bandwidth authorized by part 87.135.