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To: Whom it May Concern

Subject: Calculated Mobile Station Coupling Losses (MSCL) For FCCID: PWO460008

The following formulas were used to calculate MSCL with a 1.5' foot path loss and a 45 degree polarity mismatch between the inside antenna and the mobile device:

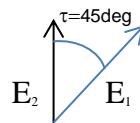
Path Loss dB = 36.6 dB + 20Log(F MHz) dB + 20Log(D<sub>miles</sub>) dB

Polarity Loss dB = 10Log(E<sub>1</sub>/E<sub>2</sub>)<sup>2</sup> dB = P<sub>L</sub> dB  
P<sub>L</sub> dB = 10Log(E<sub>1</sub><sup>2</sup>/(E<sub>1</sub> Sin(45<sub>deg</sub>))<sup>2</sup>) dB = 20Log(1/Sin(45<sub>deg</sub>)) dB = 3.01dB

Where:

E<sub>1</sub> = Maximum Possible Magnitude of the Electric Field from the Mobile Device

E<sub>2</sub> = Magnitude of the electric field from the Mobile device with a 45deg polarity mismatch = E<sub>1</sub> Sin(τ).



MSCL dB = Path Loss dB + Polarity Loss dB - Antenna Gain dB

The results of the calculations are shown in the following table:

Uplink Center Frequency MHz	707-710	782	836.5	1732.5	1880-1882.5
Path Loss (dB)	22.69	23.53	24.12	30.44	31.16
Polarity Loss (dB)	3	3	3	3	3
Antenna Gain with Coax Loss	0.22	0.04	-1.96	-3.68	-2.10
<b>MSCL (dB)</b>	<b>25.47</b>	<b>26.49</b>	<b>29.08</b>	<b>37.12</b>	<b>36.26</b>

Note: Antenna Gain with Coax Loss as measured.

Sincerely

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