1. The MSCL Calculations for Fixed Installations

The following formulas were used to calculate MSCL with a 6' foot path loss and a 45 degree polarity mismatch between the inside antenna and the mobile device:

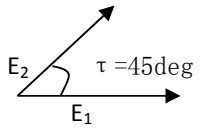
Path Loss =36.6+20Lg (F MHz) +20Lg (D_{miles}) dB

Polarity Loss=$10Lg(E_1/E_2)^2=10Lg((E_1/E_1\sin(45_{deg}))^2=20Lg((1/\sin(45_{deg}))=3.0$ dB

Where:

E_1=Maximum Possible Magnitude of the Electric Field form the Mobile Device

E_2=Magnitude of the electric field from the Mobil Device with a 45deg polarity mismatch=$E_1\sin(\tau)$



MSCL= Path Loss + Polarity Loss –Antenna Gain with Coax Loss dB

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

Uplink Frequency（MHz）	707.0	781.5	836.5	1732.5	1880.0
Path Loss (dB)	34.7	35.6	36.2	42.5	43.2
Polarity Loss (dB)	3.0	3.0	3.0	3.0	3.0
Antenna Gain with Coax Loss(dB)	1.5	1.5	1.5	2.5	2.5
MSCL (dB)	36.2	37.1	37.7	43.0	43.7

2. The MSCL Calculations for Vehicle Installations

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:

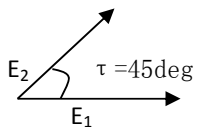
Path Loss =36.6+20Lg (F MHz) +20Lg (D_{miles}) dB

Polarity Loss=$10Lg(E_1/E_2)^2=10Lg((E_1/E_1\sin(45_{deg}))^2=20Lg((1/\sin(45_{deg}))=3.0$ dB

Where:

E_1=Maximum Possible Magnitude of the Electric Field form the Mobile Device

E_2=Magnitude of the electric field from the Mobil Device with a 45deg polarity mismatch=$E_1\sin(\tau)$



MSCL= Path Loss + Polarity Loss –Antenna Gain with Coax Loss dB

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

Uplink Frequency（MHz）	707.0	781.5	836.5	1732.5	1880.0
Path Loss (dB)	22.7	23.5	24.1	30.4	31.2
Polarity Loss (dB)	3.0	3.0	3.0	3.0	3.0
Antenna Gain with Coax Loss(dB)	-2.5	-2.0	-3.5	-3.5	-3.5
MSCL (dB)	28.2	28.5	30.6	37.0	37.7