1 Explanation of MSCL

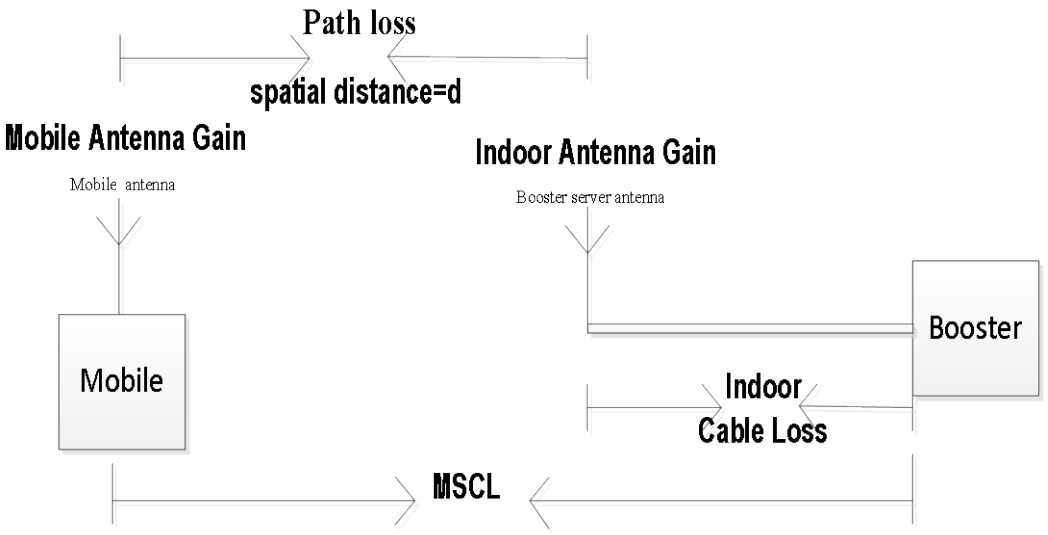

Figure 1

MSCL= Path loss + Indoor Cable Loss - Mobile Antenna Gain- Indoor Antenna Gain……①

1.1 Decibel version of free-space propagation loss equation

Path loss (dB) =20Lgf+20Lgd+32.45 ……② or Path loss (dB) =20Lgf+20LgD-27.55 ……③

f (MHz), d (km), D(m) , d=1000D

1.1.1 Operation Frequency

At PCS (1850-1910MHz) f =1850MHz

At Cellular (824-849MHz) f =824 MHz

1.1.2 Minimum Separation Distances for MSCL base on FCC new rule D (m)

Minimum Separation Distances for MSCL Calculation or Measurements D(m)	
Indoor server antenna types	Minimum separation distances D (m)
Ceiling Mounted (i.e., Dome-type) Antennas	2.0
Wall Mounted (i.e., Panel or other type) Antennas	1.0 or 2.0*
Table Top Antennas	1.0

* Note:

Wall Mounted (i.e., Panel or other type) Antennas: Alternatively, if a manufacturer clearly specifies a minimum separation distance to consumer devices in the installation manual or other user documentation provided with the booster, a reasonable minimum separation distance could be up to 6 feet (or 2 meters) horizontally removed from the antenna. In this case, the user would be required to ensure this minimum separation distance for all CMRS devices authorized for use with this booster.

1.2 Mobile Antenna Gain

Mobile Antenna Gain=0dBi

1.3 Indoor Cable Loss And Indoor Antenna Gain

Indoor Cable Loss and Indoor Antenna Gain are listed in the separate submitted file of EZboost Antenna Kitting .

2 MSCL Calculations

Booster EZboost		
Indoor Antenna		
Indoor Antenna	Indoor Antenna Gain	
	At 1900MHz(dBi)	At 800MHz(dBi)
CM302W	5	3
Indoor Cable		
Indoor Cable	Indoor Cable Loss	
	At 1900MHz(dB)	At 800MHz(dB)
CM240-50NN 50Feet	8	4.83

Path loss=20Lgf+20LgD-27.55				
Operation Frequency (MHz)	f(MHz)	D(m)	Constant(dB)	Path loss(dB)
PCS(1850-1915)	1850	1	27.55	37.8
Cellular(824-849)	824	1	27.55	30.8

MSCL Calculations of booster EZboost					
MSCL					
Operation Frequency (MHz)	Path loss(dB)	Indoor Antenna Gain(dBi)	Indoor Cable Loss(dB)	Polarity Loss (dB)	MSCL(dB)
PCS(1850-1910)	37.8	4	8	3	43.8
Cellular(824-849)	30.8	3	4.83	3	35.6