

1、 Explain the MSCL

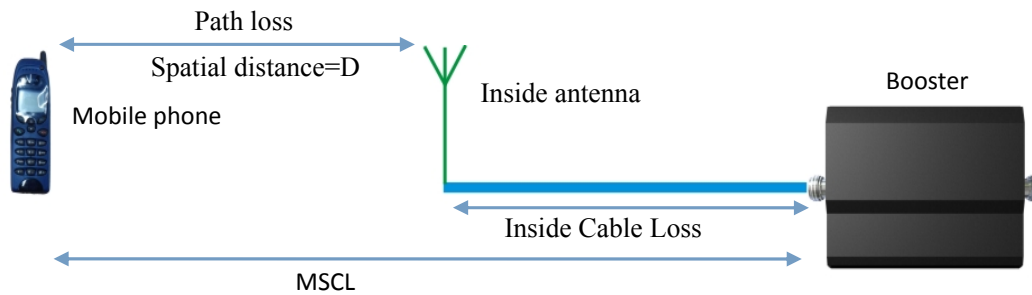


Figure 1

MSCL= Path loss + Inside Cable Loss - Mobile Antenna Gain - Inside Antenna Gain

a) Free space propagation loss calculation formula

Path loss (dB) = $20L_g f + 20L_g D - 27.5$
 f (MHz), D (m)

b) Minimum Separation Distances for MSCL base on FCC new rule

Minimum Separation Distances for MSCL Calculation or Measurements D(m)	
Inside server antenna types	Minimum separation distances D (m)
patch antennas	0.5

Component	Prod No. Description	Gain/Loss				
		LTE-707	LTE-781	800MHz	1900MHz	1700MHz /2100MHz
Outside Antenna	SR-ANT110301	3dBi	3dBi	3dBi	3dBi	3dBi
Inside Antenna	SR-ANT210001	0dBi	0dBi	0dBi	0dBi	0dBi
Outdoor Cable	SR-G58-15FN (15Feet)	2.5dB	2.5dB	2.5dB	4dB	4dB
Inside cable	SR-G58-10FN (10Feet)	1.7dB	1.7dB	1.7dB	2.6dB	2.6dB

2、MSCL Calculations

Frequency	D (m)	Inside Cable Loss (dB)	Inside antenna Gain (dBi)	Constant(dB)	Path loss (dB)	MSCL
UL1710-1755	1	2.6	0	27.5	37.2	39.8
UL1850-1915	1	2.6	0	27.5	37.8	40.4
UL824-849	1	1.7	0	27.5	30.8	32.5
UL 698-716	1	1.7	0	27.5	29.4	31.1
UL776-787	1	1.7	0	27.5	30.3	32

3、Equivalent isotropic radiated power (EIRP)

Frequency	Output Power (dBm)	Outside Antenna Gain (dBi)	Outside Cable Loss (dB)	EIRP (dBm)	Limit MAx(dBm)
UL1710-1755	20.0	3	4	19.0	30
UL1850-1915	19.3	3	4	18.3	30
UL824-849	19.6	3	2.5	20.1	30
UL 698-716	21.2	3	2.5	21.7	30
UL776-787	23.0	3	2.5	23.5	30
Frequency	Output Power (dBm)	Inside Antenna Gain (dBi)	Inside Cable Loss (dB)	EIRP (dBm)	Limit MAx(dBm)
DL2110-2155	-12.8	0	2.6	-15.4	17
DL1930-1995	-14.9	0	2.6	-17.5	17
DL869-894	-3.1	0	1.7	-4.8	17
DL:728-746	-10.5	0	1.7	-12.2	17
DL 746-757	-10.1	0	1.7	-11.8	17

Calculation: $EIRP = \text{Output Power} - \text{Cable loss} + \text{Antenna gain}$