



6<sup>th</sup> March 2018

To Whom It May Concern,

### MSCL Fusion Trek V1.0

Uplink Center Frequency (MHz)	707	781	836.5	1732.5	1882.5
MSCL (dB)	7	7	7	7	7

Calculation:

Due to close proximity of the cradle antenna to the mobile device's antenna, the calculation for Basic free space path loss B2 of 935210D03 Signal Booster Measurement KDB cannot be used.

$$LP = 20\log f + 20\log d - 27.5$$

where:

LP = basic free space path loss,

f = frequency in MHz,

d = separation distance in meters

in this case the distance d is 0.01m which

$$LP = 20\log 700 + 20\log 0.01 - 27.5 = 56.9 - 40 - 27.5 = -10.6(\text{dB}) \text{ (note, LP must be a +ve number).}$$

The test way is put two antennas face to face and close together, see Figure below (antenna with the long cable) See the loss in the instrument.



Divide the resulting value by two to get the one antenna's MSCL value generated by a single antenna.

We can see that the MSCL is equal or more than 7db in all bands we want to use.

In addition, of 935210D03 Signal Booster Measurement KDB Page35 Figure D3. You can see MSCL=7 is the value Cradle type equipment. We think this value is considered a recommendation.

Sincerely,



Dennis Findley,  
Authorized Representative

