

Coverage Threshold

Coverage Threshold is the minimum signal strength required at the street level so that after penetration through various environments, there would be enough signal strength at the mobile's antenna.

$$\text{Coverage}_{\text{TH}} = \text{RX}_m + \text{L}_m - \text{G}_m + \text{DUP} + \text{FM} + \text{Other}$$

where Other = Any other possible losses , i.e.,

$$\text{Other} = \text{Body}_L + \text{INcar}_L \text{ (or INbldg}_L)$$

G_m is the maximum mobile antenna gain in dBi

L_m is the mobile cable loss in dB

DUP is the mobile duplexer loss in dB

RX_m is the signal level at the mobile receiver in dBm

Body_L is the body loss in dB (portable coverage)

INcar_L is the in car loss in dB (portable coverage)

INbldg_L is the in building loss in dB (portable coverage)

FM is the fade margin in dB

It is also expressed as:

$$\text{Coverage}_{\text{TH}} = \text{EIRP}_{(\text{balanced})} - \text{MAPL}$$

where EIRP(balanced) is the base stations effective isotropic radiated power after balancing the path.

MAPL is the maximum allowable path loss