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Effects of Varying Distance on Wireless Signal Propagation in Indoor and Outdoor Built Sites

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Keywords: Wireless signal propagation, Indoor built site, Outdoor built site, Remote surveillance.

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Nomenclature

A_{m}	Absorption Loss
B_{m}	Multiple correction term of power loss
d	Offset distance / Wall thickness distance from Tx to Rx
f	Signal frequency
G_r	Receiver antenna Gain
G_t	Transmitter antenna Gain
L_{fp}	Floor Penetration Loss Factor
L_p	Path Loss
L_r	Line Loss between the Receiver Antenna and Receiver Input
L_t	Line Loss between Transmitter and Transmitter Antenna
n	Path loss exponent
P_r	Receiver power
P_t	Transmitter power/Traversing power
R_{m}	Reflection loss
r	Distance between Transmitter and Receiver Antenna
S_{a}	Shielding effectiveness
T	Transmission Coefficient Through Concrete Wall
t	Thickness of media

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