Fading Channels & Mobile Communications
IIT Kharagpur

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Exp 1: Understanding of Path Loss

Name: AMEY THAKUR

REPORT				
1A: Calculationof Received Power	1B: Calculationof Pathloss Exponent	1C: Calculationof Carrier Frequency	1D: Calculation of Receiver Antenna Height	1E: Calculation of BS Antenna Height
Pr(d0): -17.68 dBm	Pr(d0): -25.58 dBm	n: 4.2	fc: 2.0 Ghz	fc: 2.0 Ghz
Dist: 500.0 m	TxPow: 50.0 dBm	TxPow: 50.0 dBm	TxPow: 50.0 dBm	TxPow: 50.0 dBm
d0: 54.0m	Dist: 500.0 m	hTx: 30.0 m	hTx: 30.0 m	n: 3.39
	Pr(d): -72.45 dBm	Dist: 500.0 m	Dist: 500.0 m	Dist: 500.0 m
	d0:57.0m	Pr(d): -56.21 dBm	Pr(d): -42.56 dBm	Pr(d): -27.7 dBm
		hRx: 1.0 m	n: 4.48	hRx: 1.0 m
Pr(Entered):-37.01dBm	n(Entered):4.97	fc(Entered):3.82GHz	hRx(Entered):7.34 m	hTx(Entered):34.21 m
Pr(Actual):-37.01dBm	n(Actual):4.97	fc(Actual):3.82 GHz	hRx(Actual):7.34 m	hTx(Actual):34.21 m

DISCUSSION:-

The design of a communication system involves selection of values for several parameters. With this experiment we understood the impact of the following parameters on received signal strength.

- Transmitter Power,
- Pathloss exponent,
- Carrier frequency,
- Receiver antenna height,
- Transmitter antenna height

(Signature of AMEY THAKUR)

(Signature of Faculty)