

NS-2

Transmission Range, Radio Propagation
Model, and Default Setting

- NS-2 manual ([18.2 Two-ray ground reflection model](#))
- NS-2 default setting ([ns-default.tcl](#))

Phy/WirelessPhy set Pt_ 0.28183815

Phy/WirelessPhy set RXThresh_ 3.652e-10

Phy/WirelessPhy set L_ 1.0

All ns-2 default parameters
are stored here

Antenna/OmniAntenna set X_ 0

Antenna/OmniAntenna set Y_ 0

Antenna/OmniAntenna set Z_ 1.5

Antenna/OmniAntenna set Gt_ 1.0

Antenna/OmniAntenna set Gr_ 1.0

$$P_r(d) = \frac{P_t G_t G_r h_t^2 h_r^2}{d^4 L} \quad (18.2)$$

$$P_r(d) = \frac{P_t G_t G_r h_t^2 h_r^2}{d^4 L}$$

- $P_t = 0.28183815$ (W)
- $L = 1$
- $G_t = G_r = 1$
- $H_t = H_r = 1.5$
- $P_r > 3.652e-10$
 - To receive correctly
- $d = ?$
 $(P_t / P_r * 1.5^4)^{(1/4)} = 250.0107$ (m)

Default Setting: 802.11

```
Mac/802_11 set CWMin_      31
Mac/802_11 set CWMax_     1023
Mac/802_11 set SlotTime_  0.000020    ;# 20us
Mac/802_11 set SIFS_      0.000010    ;# 10us
Mac/802_11 set PreambleLength_ 144      ;# 144 bit
Mac/802_11 set PLCPHeaderLength_ 48      ;# 48 bits
Mac/802_11 set PLCPDataRate_ 1.0e6     ;# 1Mbps
Mac/802_11 set RTSThreshold_ 0      ;# bytes
Mac/802_11 set ShortRetryLimit_ 7      ;# retransmissions
Mac/802_11 set LongRetryLimit_ 4      ;# retransmissions
```



Turn On/Off the RTS/CTS

Use packet size to decide whether using
RTS/CTS or not