|  |  |  |  |
| --- | --- | --- | --- |
| 参数 | 值 | 参数 | 值 |
| **系统参数** |  |  |  |
| 模拟周期 | 15s | 最大存储能量 | 50pJ |
| 纳米网关节点数 | 1 | 能量捕获时隙 | 0.1s |
| 纳米路由节点数 | 24 | 能量捕获速率 | 1-5pJ/s |
| 发送能耗/字节 | 1.6\*10-3pJ/byte | 接收耗能/字节 | 1.6\*10-4pJ/byte |
| 动脉大小 | 50cm3 | 路由实验节点数量 | 10-100 |
| 传输损耗参数 | 0.75 | 热量实验节点数量 | 100 |
| 血液速度 | 10cm/s |  |  |
| **物理层信息** |  |  |  |
| 脉冲能量 | 100pJ | 纳米节点传输范围 | 0.5cm |
| 脉冲周期 | 100fs | 纳米路由节点传输范围 | 2cm |
| 脉冲间隙 | 10ps |  |  |
| **MAC层** |  |  |  |
| 退避时隙 | [0ns,100ns] |  |  |
| **网络层** |  |  |  |
| 初始化TTL值 | 30 |  |  |
| **信息处理单元** |  |  |  |
| 数据包大小 | 100byte | 数据包产生时隙 | 2-5s |
| 探测数据包大小 | 30byte | 网关探测数据包时隙 | 0.1s |
| ACK数据包大小 | 10byte | 节点探测数据包时隙 | 0.1s |
| 节点能量不足时探测数据包时隙 | 0.5s | 热量测量间隔 | 0.05s |

Relative Position Model

数据包：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | Destination | TTL | PacketId | Index | Tag |

响应数据包：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source | Destination | TTL | PacketId | Index | NodeId | NodeEnergy |

Mobility Gradient Model

数据包：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | Destination | TTL | PacketId | Index | Tag |

响应数据包：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source | Destination | TTL | PacketId | Index | NodeId | NodeEnergy |

For each nano node in **V**:

nano node generate a packet

nano node become source node **S**:

if **S** has neighbor node :

**S**.CRS

if .Id == gateway Id:

is a gateway node

packet.tag.type = 0

**S** send packet to gateway node

else if .Id == router Id:

is a router node

packet.tag.type = 1

**S** send packet to router node

router node send packet to gateway node

else if .Id == node Id:

is a nano node

packet.tag.type = 2

**S** send packet to nano node

**S** select candidate nodes again

**S** capture energy