

# SensMit Devices

## GENERAL NETWORK OPERATIONAL REGIME

Data flows from END nodes to ROUTING nodes to the BASE then to MONITOR which is a part of one of the three GATEWAY options: PC-Link, Logger and Modem. If there is a link broken in the chain then each device will hold onto the data until the link has been re-established. A universal time stamp travels from the gateway back into the Network and informs the Base, which relates time to all nodes. All data packets which nodes collect have a universal time stamp and are encrypted at the time they are first taken.

## BASE

The Base is the Coordinator of all network activities. Base creates all the network tables and waits for a Node to join the network. The Base is a complete network in itself and needs no other nodes to operate. There are two versions of Base: Mesh and Array. Mesh enables the use of meshing routing nodes and network sizes of up to 30 nodes; Array allows up to 8 direct-path routing nodes and 8 end nodes per routing node and 60 direct-to-base end nodes and has far longer range.



## ROUTING NODE

Once the Rnode has collected sufficient solar energy to power its radio, it will start looking for a Base to join. It will actively poll on all the 64 channels as long as it has power to do so; continuously in full sun and intermittently when less bright. When the Base or another Rnode hears the beacon, they will respond with an OK TO JOIN message. The node trying to join will then decide which of the other already-joined nodes to join based on the quality of the signal and signal strength. If the Base is ok with this node to be on the network (i.e. it has previously been Adopted into the Network) it will respond to the request to join and the new Rnode will re-join the network.



## END NODE

Similar to Rnodes, but they do not talk to the rest of the network directly; only to the Routing node that they joined or directly to the Base. If not speaking to the Base direct, the parent Rnode will then forward the Enodes' collected data to the Base inside that parent node's own data packet – there is no need for a response back to the Enode greatly reducing radio traffic inside the network.



## GATEWAY END NODE

This is a specialized Enode that talks only to Base and receives from Base the entire network's data for transmission on through the Gateway to the user interface. It either stands alone as PC-Link, or is integrated into Logger or Cell Modem.

