

ORCA/ZEBRAFISH Operational Description

The ORCA/ZEBRAFISH is a thermostat which can also be connected to a larger EMS(energy management system) for buildings. The ORCA/ZEBRAFISH is connected to the HVAC unit it controls by wires. 24VDC power is provided to the thermostat from the HVAC unit. All communication is done through the ZEBRAFISH Zigbee radios. Communication is by Zigbee spread spectrum.

The ORCA/ZEBRAFISH is permanently mounted on a wall in a conditioned space. Users interact with the thermostat through buttons on the front cover. Remote commands can also be sent to the thermostat through the Zigbee network. Periodically data is transmitted back to a central server from the thermostat through the Zigbee network.

Status data are transmitted from the thermostat only when an event occurs such as a button press, temperature change, or thermostat mode change.

The antenna used on the ZEBRAFISH is a chip antenna.

- RF data rate: 250 Kbps
- Interface data rate: Up to 115.2 Kbps
- Operating frequency: 2.4 GHz
- Receiver sensitivity: -92 dBm
- DSSS (Direct Sequence Spread Spectrum)
- Operating Frequency: ISM 2.4 GHz