Thermal Energy Harvesting Module

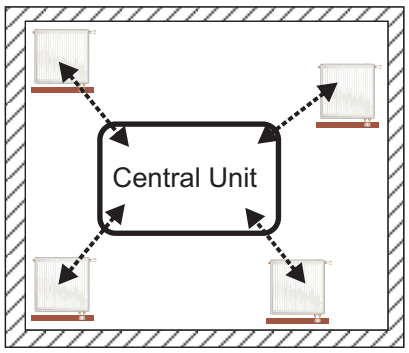
Marketing Opportunity

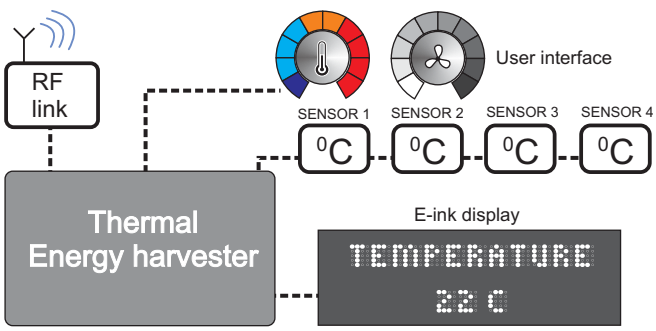
Thermal Energy Harvesting Module (TEHM) generally implies to device which uses the thermal energy instead of a battery or other electrical power sources. These devices are mainly designed to measure some physical parameter values and transmit colected data wirelessly to the central unit. Depending on the used sensor these parameters could be temperature, vibration, light, humidity, etc.
Our module is unique because of its construction. It is completely made of the metal, no standard PCB board are used. All necessary components, the thermal generator and the heatsink are mounted directly to the metal construction. In this way we achieved extremely high efficiency of thismodule and it could operate at only 6 °C of the temperature difference.
Beside of the power management circuit and the thermal generator module embedds microcontroller, thermal sensor and radio link at 434 MHz (868 MHz is also available). The user can change firmware and adjust module according to his needs.

Prototype of TEHM compared with 1€ coin

Advantages:

The main purpose of these module is to establish industrial or home sensor networks that would be used at the places that are difficult to reach, where the system maintenance is not possible, where the sensors cannot be conventionally powered or even where the use of the batteries is considered dangerous. The ways of implementing these networks are numerous: supervision of the work of the machines, monitoring of the condition at the working facilities (temperature, humidity, evaporation) or in the open.





Applications:

Smart Home Systems
Heating control
Appliances
Automotive
Food Processing
Industrial & Process Control
Medical / Pharmaceuticals

Examples of use

- **Smart Home Systems**
- **Heating control**
- **Temperature measurement**
- **Vibration measurement**
- **Thermostat**
- **Power supply for other sensors**

Patent Status

This work is the subject of patent application, and we would like to talk to companies interested in developing the commercial opportunity that this represents. Please contact us to discuss this further.

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