

Wireless Remote Data Logging

The Problem:

How can we know what is going on inside large technology objects in storage and on display over long periods?

The Catch:

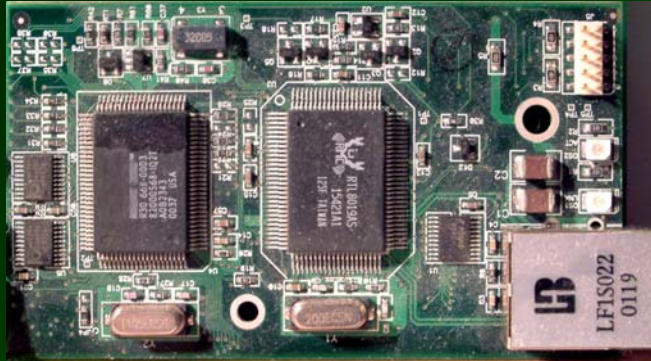
Off-the-shelf electronic data loggers require opening the sealed environment periodically to retrieve data. This changes the climate inside the object through mixing with outside conditions.

The Solution:

Transmit data from the sensors inside to a storage unit outside, by radio.

The Challenges:

- Closed ferrous metal boxes form a “Faraday’s Cage” from which radio signals cannot be sent
- Remote transmitters must run without battery change for up to six months
- The system must be simple and flexible for use by conservators without an engineering background



Microprocessor Core Module

The System:

- Prefabricated microprocessor core for data processing and management.
- Base-station PC running Linux with data storage drive and webserver
- Wireless serial transmitter link between remote client and base-station
- Plug-in digital input-output/serial pins support a variety of possible sensors
- High density LiPoly batteries for power

The Process:

- Sensor units mounted in the object send data to the microprocessor core
- The microprocessor conditions digital data values and saves them in memory
- Collected data is sent to the PC server via an external wireless serial link
- PC produces webpages for viewing data on the local network or over the Internet

Key Features:

- Compact design with proven technology
- Sleep mode for very long battery life
- 100m projected wireless range
- Can be adapted to almost any sensor
- Easily programmed for special functions
- Unlicensed radio band
- Data available in real time, anywhere

