

# Energy system wireless monitoring



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The main purpose of this project is to provide a data acquisition system for taking measurements of voltage and current on a three phase street supply (the power lines found outside your street). The local power lines are on the low voltage side of the network and this is the area that we will be taking readings on. Other specifics include things such as the strength of the device.

We also assume that the needs of the client will not change though out the development process.

## Business description:

AuStral Engineering Associates Limited is a NZ based engineering consultancy servicing the electricity industry. the company operates either independantly or networks with other specialist companies or individuals to meet the client's needs. Present work includes development of management strategies, engineering design and analysis and engineering software development.

## Problem/opportunity statement:

Software methods have been developed to characterize residential electricity demand. These methods enable risk based assessment of new or existing electricity distribution designs; LV distribution in particular. The software method is dependent on sampled physical measurements of residential loads to create appropriate characterizations but there are limited data sets available. Additionally, simultaneous measurement of network distribution values



will enable direct checking of the model outputs and will enable advancement of the analysis methods. Creation of cheap data recorders able to be located on LV networks simultaneously measure distribution values would overcome these data measurement requirements.

This was acheived through the development of a device with the following components:

- ADC
- Storage
- I2C
- Infrared
- Transmission (FSK Modem)
- Power Supply
- Processor (Mega 163 and then Tiny I2C)