

# Specification for RF Thermostat

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## 1.0 INTRODUCTION

This is the Radio Frequency Link specification for the electronic thermostat module (Handset) that forms part of the Breezair *Freedom*<sup>TM</sup> Control System. The Handset is a battery powered thermostat with a Liquid Crystal Display (LCD). The Handset utilises Radio Frequency technology to communicate with the Evaporative Cooler control system. By sensing the room temperature and controlling the operations of the fan and pump, the Handset can be used to control the comfort level of the temperature in a building. In addition, the Handset also provides features like programmable time operations, pump and drain valve control, Water manager operation, time of day clock, economy mode, automatic and manual control modes.

## 2.0 APPLICABLE STANDARDS

FCC requirements for product sale in USA into fixed residential, commercial and industrial installations. FCC part 15

## 3.0 SPECIFICATIONS

### 3.1 BATTERY REQUIREMENTS

Operating Voltage	: 4.5v d.c.
Batteries	: 3 x 1.5v d.c. (AAA alkaline)
Battery life	: minimum 1000 hours of operation
Memory Backup	: 3 minutes after batteries removed

### 3.2 OPERATING TEMPERATURE

Operating temperature	: 0 C to 40 C
Storage temperature	: 0 C to 50 C
Relative humidity	: 0 to 85% non condensing

### 3.3 TRANSMISSION FREQUENCY AND RANGE

Carrier frequency	: 433.92 ±0.5 MHz
Data rate	: 300 Baud
RF Output Power	: 4.0 ±0.5µW
Modulation	: ASK
Range	: 50 metres

### 3.3 PERIODIC TRANSMISSION

When operating	: sends the data packet once every 10 minutes
When off	: none

### 3.3 DATA PACKET

Packet size	: 3 x 6 byte packets (8 bits per byte), total 18 bytes
Transmission time	: 620 mSec

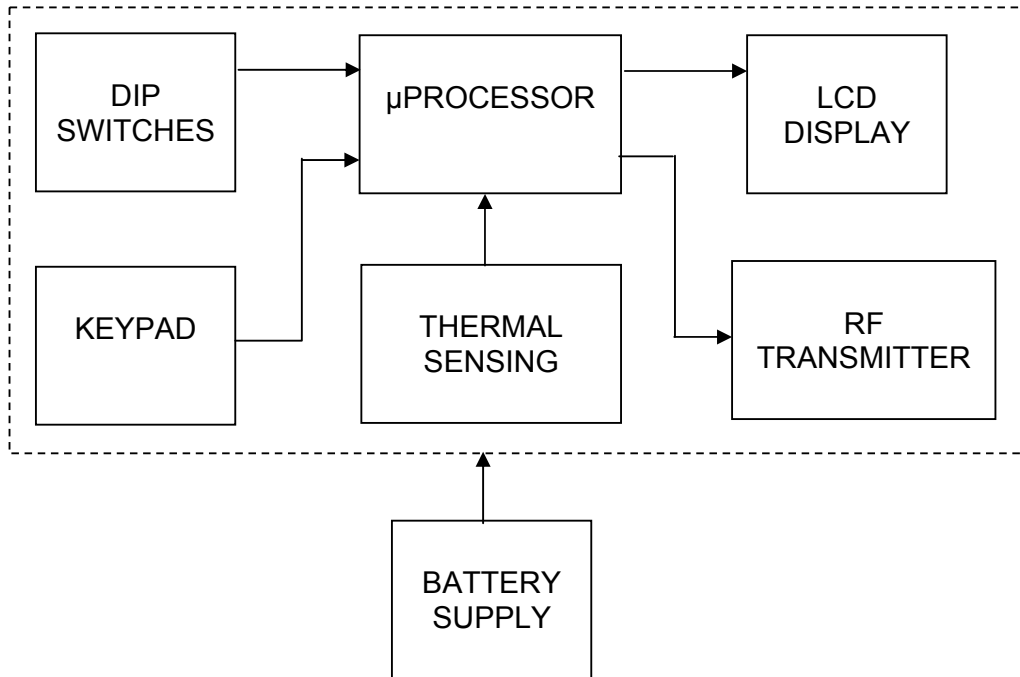
### 3.3 DATA CONFIGURATION

Byte 1	: Preamble 0ffH fixed
Byte 2	: Header 0aaH fixed
Bytes 3 - 5	: Data 00H to 07fH variable
Byte 6	: CRC (last byte) 00H to 0ffH variable

## 4.0 RECEIVER

QwikRadio Conventional Super Heterodyne Receiver (MICRF011BM) from MICREL

## 5.0 BLOCK DIAGRAM



## 6.0 FCC ID LABEL

FCC label for RF transmitter: 12mm x 40mm (white background), 10pt font

FCC ID: R2EELITE

## 7.0 PICTURES

