

## Summary of Remote Control Changes

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31.1.05

**Introduction:** *This document explains the differences in design and operation of the updated Breezair Remote Control (Seeley part number 110110) compared to the Breezair Freedom Remote Control. The Breezair Freedom Remote Control was granted FCC identification R2EELITE early in 2004. The changes include a software operational difference, hardware component and hardware layout differences.*

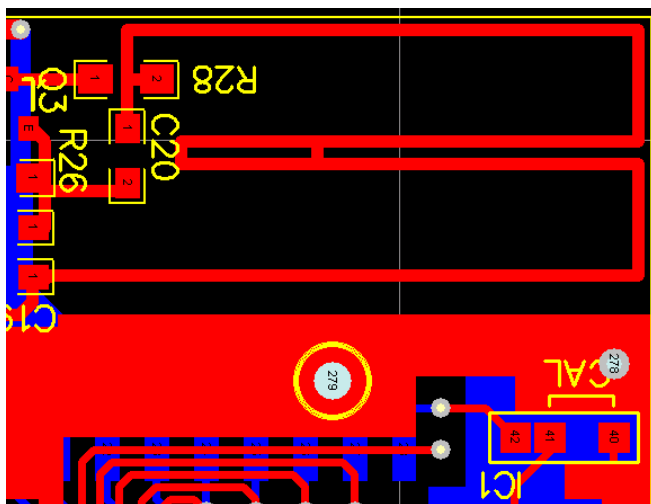
### 1. Software Operation difference

- When in the Auto Thermostat state and there is demand for cooler operation, transmission period varies from between every 2 minutes to every 10 minutes depending on thermostat response times. Previously this was every 10 minutes only.

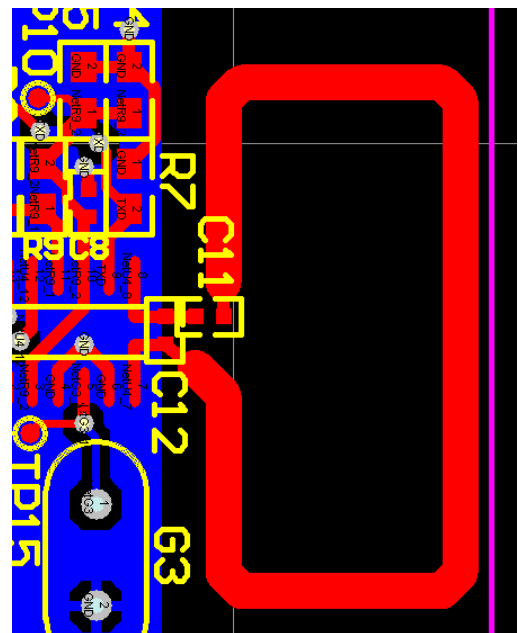
### 2. Hardware Component and Layout differences

- The main micro-processor has changed from an NEC uPD17202A to a Hitachi HD64F38102FP. The communication data stream structure and Bit Rate have not changed. The NEC chip was clocked with 32kHz and 4MHz crystals, the new design is clocked with 32kHz and 3.58MHz crystals.
- The Transmitter circuitry has changed from a discrete component design to a MICREL integrated circuit MICRF104. Both circuits utilize a PCB track Loop Antenna. The MICRF104 includes in integrated constant voltage power supply.
- The Loop Antenna layout has changed according to Fig 1 below, both shape and orientation on the PCB. Orientation is as shown below.

**FIG 1. – Antenna Loop design and orientation**



*Breezair Freedom R2EELITE*



*New Design Breezair Remote Control*