

9. Operational Description

This reader is a member of the same product family as devices FCC ID OQL-PAC-LP and OQL-PAC-DT.

The microcontroller generates a fixed frequency of 125 KHz (derived from its crystal clock of 8 MHz) which is then fed to the series LC resonant circuit via a driver/buffer circuit. The resonant circuit is tuned during manufacture by selecting components on test.

The 'L' of the resonant circuit is the coil which is the inductive link with the passive identification tag. The passive ID tag (or card) is a very low power device, which is powered by the carrier field from the coil, and which modulates a tuned circuit with its unique ID code. The code picked up by the inductive link is detected by the demodulator. This is then amplified and band-pass filtered before being converted to a digital signal by the comparator.

The microcontroller takes the digital signal that has been detected from the passive ID device, and uses it to generate a 4800 Baud serial code via the output Sig A. The microcontroller also monitors the inputs 'LED Control'. This input is pulled up to 5V with a resistor. If the 'LED Control' input is pulled low by a peripheral device, then the LED colour will change from red to green.

Description of Peripherals

The Slimline is typically connected to an access 'controller' unit (for example, the PAC 2200 controller). This unit provides power to the Slimline, and monitors the signal line for user ID codes.

When an ID code is detected, the code is checked against access rights for the holder of the ID card, and access is granted if the holder is authorised, e.g. by removing power to a lock (not part of the Slimline). When access is granted, the controller will generally pull the Slimline 'LED Control' input low, so that the Slimline LED changes from red to green – indicating to the user that the code has been validated.

Most installations have 4 connections to the Slimline:

- 0v (-ve power and signal / LED reference)
- +ve power
- Signal
- LED