



## **Theory of Operation Statement**

### **Antenna Description**

The antenna used with the Destron Technologies reader is a tuned LC circuit. It is made up of two coils and some series capacitors tuned to peak the antenna current at 134.2 KHz.

### **Operational Description**

The Cattle Paddle DTR reader is designed to read RFID transponders that operate at a frequency of 134.2 KHz. The reader sends out a magnetic field through the antenna coil at that frequency. Using the receiver coil antenna, the signal is received back from the transponder, sent through filters and decoded by the microprocessor. The resultant transponder ID is then sent out the RS232 port or the Blue Tooth Serial connection to a host computer. The Cattle Paddle DTR reader is designed to operate on an internal rechargeable battery.

### **Circuit Functions**

#### **Main Board**

The main board contains the microprocessor and support circuitry for I/O functions such as serial communications through the RS232 port and communication through the Blue Tooth serial interface board. The main board also contains the tuned amplifier with circuitry to decode all ISO compliant tags. The CPU generates the 134.2 kHz signal by dividing the main clock signal.

#### **Tuning Board**

The tuning board contains the series tuning capacitors for driving the sending and receiving coil antennas to peak at 134.2 kHz.

#### **Blue Tooth Board**

This proprietary board allows us to communicate with a host computer using a Blue Tooth Serial Connection. This eliminates the need for an RS232 cable.

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