



Theory of Operation Statement

Operational Description

The reader comes in two versions, POCKET READER and POCKET READER EX. The POCKET READER EX version has a larger antenna providing a longer read range for certain applications. The operations for both versions are identical. The POCKET READER and POCKET READER EX are designed to read RFID transponders that operate at a frequency of 134.2 KHz. The reader sends out a magnetic field through the antenna at that frequency. Using the same antenna, the signal is received back from the transponder, sent through filters and decoded by the microprocessor. The resultant transponder ID is then displayed on the LCD and also sent out through communication ports to a host computer if required by the user. The antennas used with the readers are inside the reader case and tuned at the factory.

Grounding Description

The POCKET READER is powered with 4 “AAA” Batteries and the POCKET READER EX is powered with 4”AA” Batteries. Both types have enclosure made of plastic and have no ground connection. The POCKET READER EX reader can also be powered by a 6VDC Power supply by the user.

Antenna Description

The antennas used with the Destron Fearing readers are a tuned LC circuit. They are made of a coil and series capacitors tuned to peak the antenna current at 134.2 KHz.

Circuit Functions

Circuit Board

The Mother board contains the microprocessor and support circuitry for I/O functions such as serial communications, LCD display, and read switch for scanning. The Mother board also contains the memory for storing operating parameters and RF tag ID's. All frequencies are generated on this board.

The Mother board also contains the circuitry for driving the antenna circuit and the receive filters for retrieving the signal back from the antenna.