Description of ALL-BOTTLE ID

The ALL BOTTLE ID SYSTEM is a liquid dispensing uint consisting of the ABID Dispenser with attached activator ring, a pourer with a internal RFID tag, and the Electronic Control Unit (ECU) which supplies data and power to the dispenser and the accessories. See the block diagram for the interconnection and layout of these units. Pourers, each with an individual RFID tag, are placed on liquid dispensing bottles. Each tag has been programed with a unique number that when read provide the ABID Dispenser with information on the liquid in the bottle.

The ABID Dispenser transmitter contineously sends signals through the buffer amplifier (Gain = 1) to the coiled antenna in the activator ring located at the end of a 11 foot coiled cord. When the activator ring is placed over a pourer the RFID tag is powered up by the 13.56 MHz RF signal. The RFID tag broadcasts it's ID number by varying the impedance of it's antenna. This is picked up by the receive antenna in the activator ring and returned to the receiver in the ABID Dispenser. The range is about one-half inch. The microprocessor in the ABID Dispenser decodes the returned signal and opens the solenoid in the pourer for a specified time. At the end of the pour time the operator removes the activator ring from the bottle and places it over another bottle (containing a pourer with a different tag number) and poures another drink. When the pouring process is complete the data in the ABID Dispenser is transferred via UART to the ECU where information is stored on the number and types of drinks poured.

The sequence of operation starts with the microprocessor reading the front panel switches to determine the amount of drink to pour. The microprocessor then tells the transmitter (in the MFCM200) to send RF pulses at 13.56MHz through the buffer and to the transmitt antenna in the activator ring. When a pourer tag is picked up the return signal from the receive antenna is decoded by the receiver. The microprocessor then displays the type of liquid on the LCD display. The solenoid is opened and the drink is poured. The transmitt and receive antennas are coils with 6 turns of wire approximately 1.3 inches in diameter seperated approximately 0.1 inch.