## RFID Technology and DACWMS
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## RFID in Our Daily Lives

Radio Frequency Identification – RFID – is not a new technology by any means. RFID devices have been utilized in our daily lives for many years, from the chip in our vehicle's ignition key to your Speed Pass used to pay highway tolls.

"Radio Waves" are radiated in a broad spectrum and may be used for AM and FM broadcast channels, TV, Garage Door Openers, Cell Phones, Weather Radar, X-Rays and even cooking your hot dogs in a microwave oven. The Radio Energy of these various channels exhibit different properties depending on their frequency. Some channels allow you to communicate all the way up to a satellite while other channels can cook your supper.

Similarly, the term "RFID technology" also covers a very wide variety of devices. RFID chips that help identify your pet dog or cat operates at 125 kHz and offers only near-contact range. On the other hand the RFID Speed Pass operating at 2.4 GHz can detect your vehicle from a hundred yards down the highway while traveling at 70 mph. There is quite a difference in features between these two extremes.

## RFID and DACWMS

Dynasys engineers chose a very special RFID tag technology to track animal cages with our Dynasys Animal Care Warehouse Management System (DACWMS). In order for RFID to be used for tagging cages the devices requires these minimum attributes:

- Passive tags that can survive autoclave sterilization temperatures
- Detection while mounted directly onto metal cage card holders
- Able to sustain caustic chemical wash-downs
- Anti-collision detection properties to read a high density of tags
- Operation on globally approved license-free radio channels
- Controlled detection range to prevent inadvertent reception from nearby tags

Based on these stringent requirements Dynasys chose the 900 MHz UHF worldwide EPC standard developed over the past few years for the retail industry.

High volume retailers such as Wal-Mart, Target and Best Buy are transitioning their current use of the UPC (Universal Product Code) bar code to EPC (Electronic Product Code) RFID labels in the near future.

Utilizing Generation 2 EPC technology Dynasys engineers have encapsulated Texas Instruments silicon onto ceramic substrates containing a specially tuned antenna. This assures that the tag can reliably be detected when mounted directly onto metal cage card holders and also sustain operating temperatures over 200 degrees C. Hundreds of these tags can be interrogated and detected within seconds allowing the census/inventory of an Animal Care facility to be reconciled in minutes. RFID is fast and virtually error free. Utilizing RFID technology is the modern way Animal Care Services should be managed.

## RFID and Dynasys

Dynasys has been providing complex Automatic Data Collection solutions since 1988. For the past ten years Dynasys engineers have specialized in RFID technology and we are proud to have been chosen by Texas Instruments to be their RFID technical support center for the United States.