



# LIVESTOCK ID

## Tag, trace and manage with PJM RFID



### Overview:

Managing livestock becomes increasingly important as legal pedigree requirements and on-farm productivity increase.

Effective RFID systems are able to support the farming industry in solving this task. However, classical 125 KHz ear tags are expensive, lack the data storage capability, communication speed and reliability.

RFID systems based on the 13.56MHz PJM RFID technology are cost efficient, very fast in communications to the livestock tag so that it can use most of the 8 Kbit memory on the tag - each animal carries its own database and history.

PJM livestock tags look like conventional visual ear tags. Different PJM reader/writer systems are available to access and manage the information on the livestock tag - from portable lightweight handheld "Mobile Reader/Writers" to "Fixed Panel Reader/Writers" for on-farm installations.

### The Features:

- 8 Kbit of memory which offers storage for more than 1,000 characters
- Unique guaranteed tag identification number
- Lockable memory locations preventing unwanted data modifications
- Optional password functionality to prevent unauthorized write accesses to memory
- Transaction speeds to tag memory more than 20 times faster than conventional RFID systems
- Data storage for a minimum of 10 years
- Rewriting capability of more than 100,000 times
- Read/write distances up to 1m
- PJM livestock tags comply with the open worldwide standard ISO/IEC 18000-3 Mode 2
- Ambient operating temperature range from -25°C to +70°C



## Specifications

### About PJM

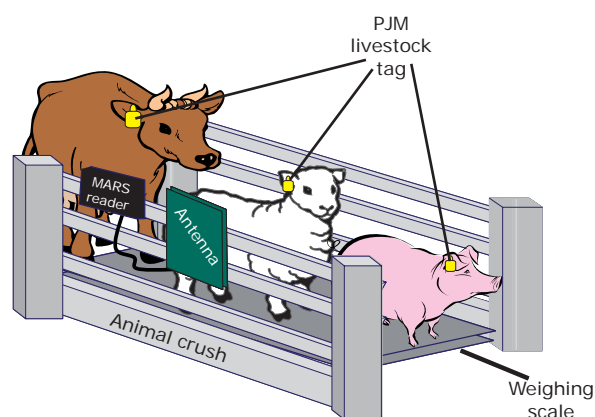
PJM stands for Phase Jitter Modulation, a very fast communication method between reader/writers and RFID tags. This new system is specified in the open worldwide standard ISO/IEC 18000-3 Mode 2. It provides very fast data rates that are as much as 100-400 times faster than data rates of other 125KHz or 13.56MHz RFID systems. In fact, the data rate and reliability of PJM are demonstrably many times higher than those of other HF RFID and indeed UHF technologies.

### High Data Rate

The command data rate of 424 kbits per second is very much faster than other technologies. The speed at which PJM communicates is so fast that it can communicate with many hundreds of tags practically simultaneously. Apart from the major benefit of raw speed this also means that PJM tags can access much more memory in the same time than other RFID tags. Importantly, because of this high speed data rate all communication between reader/writers to tags is protected by a 32 bit CRC error detection. Most other RFID systems only use 8 bit or 16 bit CRC which leads to communication errors and data corruption.

### Memory Capacity

Because of the very high data rate, PJM tags have a significant speed/time advantage over other slower tags. This speed advantage translates directly into not only improved communication, and improved anti-collision but also into much larger on chip memory. PJM has, for example, the speed to use a 8 Kbit memory where other earlier technologies are limited to 256 bits or 512 bits because they simply cannot communicate with or use more memory in the time made available by their slow anti-collision systems and slow data rates.



**“We have so much available memory and such a high communication rate that a Magellan livestock tag functions as a complete stand alone data base for the individual animal”**

For further information on technology, delivery terms and conditions and prices please contact your nearest Magellan Technology office:

Magellan Technology Pty Ltd  
65 Johnston Street  
Annandale NSW 2038  
Australia  
Phone: +61 2 9562 9800  
Fax: +61 2 9518 7620  
info@magellan-technology.com

Magellan Technology Europe Ltd.  
Units 7 & 8  
Parker Court, Dyson Way  
Staffordshire Technology Park,  
Beaconsfield  
Stafford ST18 0WP  
UK  
Phone: +44 1785 218540  
Fax: +44 1785 218541  
info@magellan-rfid.com

### About Magellan

Magellan Technology Pty Ltd, Sydney, Australia, is a technology developer, manufacturer and licensor of advanced read/write 13.56 MHz RFID systems. Magellan designs and offers RFID chips, inlets, a complete portfolio of reader/writers and operating software. Magellan's Phase Jitter Modulation (PJM) technology complies with the International Standard ISO/IEC 18000 Part 3 Mode 2.

Published by Magellan Technology Pty Ltd.  
Product specifications are subject to change without notice. All rights reserved  
Issue date: June 2007  
PB-livestock-0607-engl