



Overview

The Multiple Antenna Reader System with Adaptive Tuning (MARS-24ATR) is an RFID reader/writer built for speed and accuracy. The MARS-24ATR is able to verify, edit, monitor and control a large number of valuable items on up to 24 individual antennas. Adaptive tuning compensates for the effects of antenna detuning and will even alert the user should an antenna ever be disconnected or become detuned beyond the readers bounds.

The MARS-24ATR is a high performance system suitable for use with PJM RFID tags. It provides fast and reliable operations with a range of different external antenna types. All Magellan readers are supplied with ReaderManager software that provides a platform for reader setup, configuration, demonstrations, testing and application development.



Antennas connected to a MARS-24ATR can be arranged as required to operate 24 separate read/write stations or any combination of multi-axis stations that will identify tags in multiple orientations. Antennas can be fitted to display cases, cabinets, presentation areas, on gaming tables and shelves or on a high speed conveyor. Antennas requiring tuning will only need to be tuned once, on initial setup.

FEATURES AND BENEFITS

- » Identify many hundreds of tags a second
- » Reliable identification of tightly stacked, overlapping or touching tags
- » Very fast operation with 8 reply channels
- » Rapid detection of tag movement between antennas
- » Write data, such as an Electronic Product Code (EPC), at a rate of 3000 tags per minute
- » Adaptive tuning
- » Great connectivity offering both Ethernet and USB interfaces
- » Dedicated digital I/O Interface

SPECIFICATIONS

Electrical	
Operating Frequency	13.56 MHz
ISO/IEC Compliance	18000-3 Mode 2
Command Data Rate	424 kbit/s
Reply Data Rate per Channel	106 kbit/s
Number of PJM Reply Channels	8
Number of External Antennas	Up to 24
Number of Axes	Antennas available for 1, 2 or 3 dimensional operation
Operating Range	Tag type dependent
Compatible Single Axis Antennas	Round: 60mm & 124 mm Diam. Rectangular: 60 x 420 mm, 120x240 mm, 202x352 mm. Others available on request
Antenna Cable Length	1.5 m, 3 m (optional cable extender required), 8 m
Dedicated I/O	1 supply +5V @ 200 mA max, 8 push-pull outputs + 3.3V logic, 8 inputs +5V logic with 1K Ω pull-up: see Digital I/O Application Note 063-70-050-DOC for further information
I/O Connector	DB-15 Connector
Power Supply	12VDC
DC Power Supply Connector	2.5 mm DC centre pin positive
Mains Input	110 - 240 VAC @ 50/60 Hz
Mains Connector	IEC 320/C14
Power Consumption	36 W
Performance	
Tag Type	Antenna dependent refer Tag Reference Table
Identification rate at 100% accuracy	up to 600 tags/s
Identify & read 96 bits data at 100% accuracy	up to 250 tags/s
Identify, write & read back 96 bits data at 100% accuracy	up to 50 tags/s
Host	
Host Interface	USB and Ethernet (Ethernet Cable must be CAT 5 and shielded)
Minimum Host Computer Requirement	Windows XP SP2/ 500 MHz CPU/ 128MB RAM
Software	
Minimum Firmware - Reader Server	Version 3.42.8
Environmental	
Operation environment	Indoor use
Temperature range	0°C to +45°C
Humidity	10% to 80% (non-condensing)

Mechanical	
External Dimensions (L x W x H)	383 x 186 x 80 mm
Internal Aperture	N/A
Net Weight	3.7 kg including power supply
Net Volume	0.0057 m ³
Shipping Dimensions (L x W x H)	490 x 250 x 170 mm
Shipping Weight	4.2 kg
Shipping Volume	0.021 m ³
Certifications	
USA	FCC Part 15 Low Power Communication Device (Pending)
Canada	N/A
Europe (CE Mark)	EN55022, EN 301 489-1 V1.6.1, EN 301 489-3 V1.4.1, EN 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11, EN 60950.1, EN 300 330-1 V1.3.1, EN 300 330-2 V1.3.1, EN 50364, EN 50357, RoHS
Australia	AS/NZS CISPR 22(2006), EN55022, AS/NZS 4268 (2003), AS/NZS 60950, RPS3 (ARPANSA)
General	
Read and write operations	Yes
No manual calibration needed	Yes (some antennas)
Automatic tuning	Yes
Readers can be placed in close proximity to one another	Yes, however antennas need minimum separation depending on type
Shielding	N/A
	
Figure 1. Back view	
	
Figure 2. Side view	



65 Johnston Street, Annandale NSW 2038 Australia
 Ph: +61 2 9562 9800 Fax: +61 2 9518 7620
 E: info@magellan-technology.com
 www.magellan-technology.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 PJM 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.