



This active UHF RFID tag enables users to collect accurate data for identification, tracing and location in real time. It is ideally suited for the tracking of temperature sensitive assets or for agricultural uses.

This active RFID tag features read rates of up to 100tags/s and a maximum response time of less than 150ms. It has an expandable memory of 32,000 bytes allowing massive data storage and an internal sensor for temperature monitoring. The tag uses an anti-collision, multi-tag-handling algorithm for accurate communication between the reader and a large number of tags. Up to 2,000 tags can be identified simultaneously. UHF operating frequencies allow low-power and long-range communication for efficient operation. This RFID tag, used in conjunction with an active RFID reader, transfers data via progressive UHF radio frequency technology at distances of up to 100 feet from a handheld reader or up to 300 feet from a fixed interrogator.

Key Feature

- ✓ 100-meters (300 ft) read/write range: allows automated identification, tracking and tracing of assets and people without human intervention
- ✓ 32,000-byte memory: stores user and process information as well as temperature data onto the tag to provide real-time tracking and tracing. It can be used as an electronic packing slip or as an electronic shop traveler
- ✓ UHF operating frequencies: allows low-power, long communication range and high data transmission rates with minimal interference due to local conditions
- ✓ 100-tag/sec. identification rate: provides reliable identification of fast moving-objects
- ✓ 2,000-tag simultaneous identification: large numbers of tags can be identified virtually simultaneously



- ✓ Temperature logging: measures and logs the temperature of goods in definable intervals
- ✓ LED: provides visual identification of an addressed tag ("pick by light")
- ✓ Industrial housing: durable in demanding environment
- ✓ 6-year battery lifetime: delivers long-time maintenance-free operation, without battery replacement
- ✓ Communication on demand only: eliminates RF flooding through software-controlled read/write operations
- ✓ Non-line-of-sight data transmission: allows tags to be buried while transmitting for improved tracking/locating efficiency
- ✓ Low cost: economical tracking of large quantities of assets using high-performance active RFID technology





Technical Specifications

Performance

Read rate	Up to 100 tags/s (identification code only) Up to 35 tags/s @ 128 bit data reading
Max. response time	<150 ms (single tag)
Multiple tag handling	Up to 2,000 tags in the read zone

Communication

Read/write range to GAO (227003)	Up to 100m (300 feet) @ free air
Operating frequency	Up to 100m (300 feet) @ free air
Data rate (download to tag)	115.2 Kbits/s
Date rate (upload to reader)	115.2 Kbits/s
Maximum transmission power	0.75 mW ERP
Standards/ certification	EN 300 220 (EC); FCC Part 15 (US); Industry Canada

Electrical

Power source	Lithium battery (not replaceable)
Expected battery life	> 6 years @ 600 times 128 bit readings/day
Battery monitoring	Yes

Temperature logging

Number of samples	13,312
Interval	User definable in intervals from 1 to 255 minutes
Accuracy	± 0.5°C (1°F) over a range of –20°C to 50°C (–4°F to 122°F); ± 1°C over entire range
Metering range	–40°C to 85 °C (–40°F to 185°F) with internal sensor –127°C to 127°C (–197°F to 261°F) with external sensor, optional
Resolution	0.25°C (0.5°F)

Data

Data retention	>10 years without power
Write cycles	100,000 writes to a tag
Memory size	7,855 bytes user definable (GAO 137004 Series) 32,431 bytes user definable (GAO 137003 Series)



Identification code 48 bit fixed ID

Environmental

Operating temperature –40°C to 85°C (–40°F to 185°F)

Shock 50 G, 3 times DIN IEC 68-2-27
Multiple drops to concrete from 1 m (3 ft)

Vibration 3 G, 20 sine wave cycles, 5 Hz to 150 Hz, DIN IEC 68-2-6
5 G, noise 5 Hz to 1000 Hz, 30 minutes DIN IEC 68-2-64

Physical

Dimensions 131mm x 28mm x 21mm (5.2in x 1.1in x 0.85in)

Enclosure Plastic (ASA/Luran® S)

Weight 50g (1.75ounces)

Enclosure rating IP 65





GAO RFID Inc.

A Member of GAO Group

Celebrating Over 15 Year of Innovation

Product Overview

UHF Long-Range Active RFID Tag (137003)



GAO Group

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GAORFID.com
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GAOComm.com
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GAOFiberOptics.com
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