

# TROVANUPDATE



Above: The Hawaiian Petrel has been classified as an endangered species since 1967 and is listed under the United States Endangered Species Act of 1973.

## Protected Hawaiian Petrel to be tagged with TROVAN

Contributed by Wayne Culberth, Vantro Systems

The Hawaiian Petrel, once the most abundant seabird on the main islands of Hawaii nested from sea level to the mountaintops. Since 1967 however, it has been classified as endangered with small colonies at high elevations. Endemic to Hawaii, the Petrels breed at six years of age, returning to the site every year for up to forty years. It is undocumented and difficult to assess how many Petrels are returning to Hawaii as well as where they are breeding once back to the main islands.

Climate change may be affecting the Petrel's lifespan as it depends on wind patterns in the Northern Pacific. With that said, recovery of Petrels may be limited or enhanced by the changing climate conditions that affect the NE Pacific Basin. Studies show that sea surface temperatures have risen 1°C over the past century and are expected to increase by up to 3°C over the next 100 years. This increase in temperature reduces the accessibility of phytoplankton, a major source of food for small schooling fish who are in turn preyed on by an array of seabirds.

Other factors threatening the already endangered species are human hunting, predators, artificial lighting, as well as the remoteness of their colony locations. Considering Polynesians regard the Petrel nestings a delicacy and cats as well as Indian Mongoose are found all over the islands, all have been associated with the near extinction of the Hawaiian Petrels. The artificial lighting found around businesses cause the Petrels to become disoriented. Once they fall to the ground, they are susceptible to cars, cats, dogs, starvation and dehydration. Lastly, the remoteness of their colonies complicates predator control for those trying to preserve the species.



At left: Indian Mongoose eating Nene in Hawaii.



At right: Small Indian Mongoose.



- DATALOGGERS**  
[with 100' Cables (2 50' lengths with coupler)]
- ANTENNAS with**  
(2 Photoelectric Sensors each)
- SYSTEM CONTROL UNIT (SCU)**

At right: SQUID Pods of the type deployed on the summit of Haleakala Volcano in Maui.

The United States Geological Survey (USGS) has purchased three SQUID pods with special options to reduce the use of power by using timers and photoelectric sensors. The systems are currently being powered via solar panels and storage batteries.

The petrels were captured and fitted with leg bands into which researchers embedded TROVAN ID-100A Microtransponders. More recently, they have purchased TROVAN ID-100USB Animal Transponders with Lancets to implant. These TROVAN products allow for unique identification, with capabilities to track the history of the animal based upon where they have gone, what they have eaten, and so on and so forth. With exceptional read distances and unprecedented readability, TROVAN products work well in this environment.

The systems are deployed on the summit of Haleakala Volcano in Maui. They collected useful data the first season, however one of the solar panels was struck by lightning, thereby destroying one of the SQUID pods. Since then it has been refurbished and shipped back to be re-installed this season. However this is a national park, and the researchers are only allowed access at certain times of the year.

Researchers are interested in developing and implementing ways to determine population size and status, population control and habitat restoration. A final priority is investigating the role of artificial light in regards to Petrel interaction.

Little is known about their foraging range and at-sea circulation and therefore researchers have limited knowledge about the threats they face in their pelagic environment. The long-term objective is to conduct studies to determine their reproductive biology and survival trends.

The Hawaiian Petrels are listed under the United States Endangered Species Act of 1973 and qualify for special protection along with the California Brown Pelican, Newell's Shearwater, and the California Least Tern.



At right: Hawaiian Petrels nest in the Hawaiian Islands  
Bottom: Hawaiian Petrels nest in the cliffs of Na Pali.



# Tracking Australia Road Barriers with TROVAN

Contributed by Doug Black, Microchips Australia

Concrete road barriers are used daily on Australian highways and roadways to control traffic flow or restrict traffic access. Australian Road Barriers is a company that manufactures these road barriers, and hires them out to various traffic authorities and road management Corporations. It is imperative to be able to confirm ownership, manufacture date, location accuracy, time at specific location etc, and Microchips Australia provides the solution using TROVAN ID-200 Industrial Transponders which are attached to the reinforcement prior to pouring the concrete. The readers used are TROVAN LID-572 Pocket Reader and TROVAN GR-250 High Performance Portable Reader. The project initially was a read-only application at point of manufacture and on-site location, but has matured somewhat to now also rely on the Trovan software associated with the readers.

This is further proof that there is an RFID solution for just about any application.



At left: Concrete road barriers are an example of one of the many ways in which TROVAN products can be applied and used.

# Uniquely Identifying Wheel Frames for Racing Bikes

Contributed by Doug Black, Microchips Australia



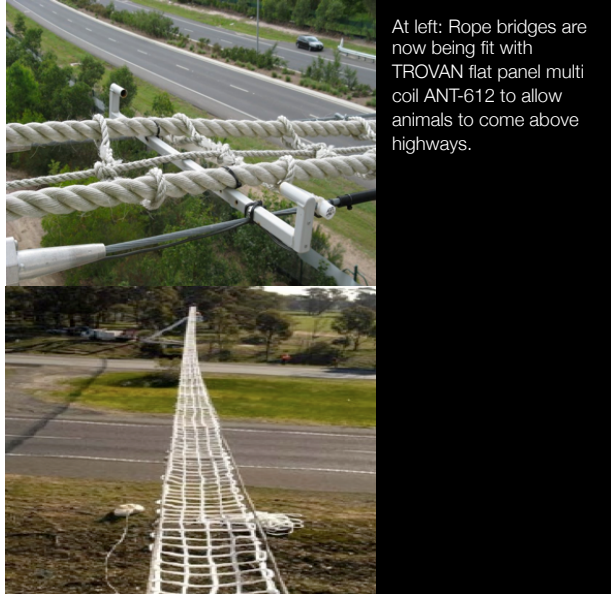
At right: Thousands of people compete in bicycle races each year.

Microchips Australia is currently supplying TROVAN ID-103 Ruggedized Microtransponders and LID-572 Pocket Readers to a company supplying and servicing high quality, high-tech racing bike wheels in Australia. The TROVAN ID-103 transponders are located out of sight within the wheel rim and are scanned with a LID-572 reader with Bluetooth capability to immediately transfer the transponder code to trigger the search field in the company's management software. This allows the service personnel to immediately determine the manufacture date and service history of the wheel presented for service.

# Tracking Wildlife Movements Across Major Highways in Australia

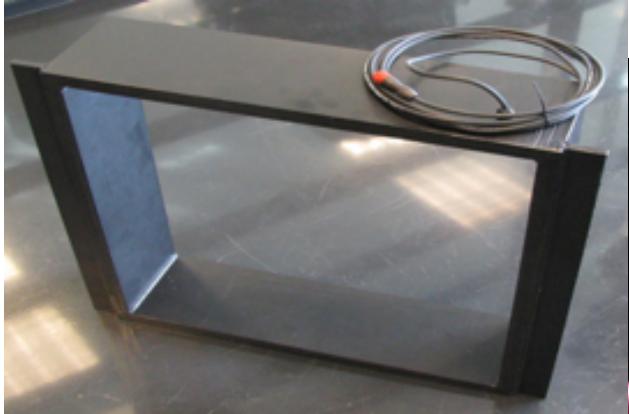
Contributed by Doug Black, Microchips Australia

With more and more people on the road nowadays, the number of highways across Australia and the world is increasing. Road underpasses serve not only as a water drainage system, but also as passageways for various wild animals. In addition, rope bridges and “gliding poles” have been built to allow animals such as possums and gliders to come above the highways. Microchips Australia has supplied fixed reading systems to monitor animals that have been identified with TROVAN Unique ID-100 Implantable Transponders using these structures. The rope bridges have been fitted with TROVAN flat panel multicore ANT-612 antennas connected to LID-650 decoders. These may also be linked to optical sensors and infrared cameras to identify non-microchipped animals. Solar power back-up systems are used to maximize battery life and the intervals between site visits to download data.



At left: Rope bridges are now being fit with TROVAN flat panel multi coil ANT-612 to allow animals to come above highways.

The road underpasses present challenges largely in part to their differing dimensions. Microchips Australia have been able to supply custom-sized antennas to fit numerous different underpasses in Australia, thus allowing various wildlife to pass through, while also supplying information to researchers. One project conducted by the University of Western Australia involved the supply of two ANTSQR-500 (500mm x 500mm square) antennas attached to LID-560 decoders. The larger underpasses continue to present challenges in antenna design to allow small mammal and reptile detection at the same time as detection of larger marsupials such as kangaroos.



Top: Although underpasses serve as a water drainage system and passageway, they are no longer the only option animals have cross busy highways. Bottom: ANTSQR-500 antennas attach to the LID-560 decoders.

# Microchips Australia and TROVAN Have Been Selected As Preferred Supplier for the Australasian Greyhound Industry

Contributed by Doug Black, Microchips Australia

Greyhounds Australasia, the peak body for the Greyhound Racing Industry, comprising representatives from jurisdictional controlling bodies in Australian States and Territories, and New Zealand, has introduced compulsory microchip identification for all greyhound puppies whelped on or after January 1st 2011, as part of Greyhound Australasia's Integrity and Animal Welfare initiatives.

The charter of Greyhounds Australasia is to support these authorities through the encouragement of a universal approach to the Australasian greyhound racing industry as well as creating uniformity with the brand.

Microchips Australia will supply TROVAN ISO compliant FDX-B ID-162 microchips, TROVAN LID-560 Pocket Readers, and Trovan IM-200 Syringe Implanters.

Future plans include the implementation of LID-572 Pocket Readers to upload data to on-site computers at race meetings (the options of using Bluetooth versions of these readers will be explored as well as investigating the possible role of the LID-572KEY readers). By using TROVAN custom coding, it would make race meeting management significantly easier. Lastly, automated weigh scale readers are projected to upload identification and weight recording data to computers on site at race meetings.

This is hopefully a long and successful association with the Australian and New Zealand Greyhound Racing Industries for Microchips Australia and TROVAN.



At left and bottom: Microchips Australia has provided TROVAN microchips to help make meeting management and Greyhound race registration significantly easier.



# Introducing the World's Smallest Transponder: the TROVAN ID 100A(1.25), and the TROVAN ID-100VB(1.25) Implantable Nano Transponder

The TROVAN ID-100A(1.25) Nano Transponder is designed for applications where a small, unobtrusive ID tag is called for. This configuration is suitable for large-scale animal applications and industrial applications requiring smallest-size transponders and/or extended exposure to fluids. It can be embedded in non-metallic items so that it is completely invisible from the outside. It can be used on items with very small dimensions, which require a tiny ID tag.

The ID-100VB(1.25) Implantable Nano Transponder in VetPlant Implanter is a miniature transponder, encapsulated in biocompatible glass for use in animal applications. The Nano Transponder is designed for applications where a small, unobtrusive ID tag is called for. Each transponder comes individually presterilised and packaged in a bubble pack. All ID-100VB(1.25) transponders are ready for application, in their own single piece implanter, with six adhesive labels featuring the transponder's ID number in barcoded format and alpha-numeric characters.

**DIMENSIONS**

Length: 7 mm (0.275 in.)  
 Diameter: 1.25 mm (0.049 in.)

**WEIGHT**

0.06 g (0.002 oz)

**IDENTIFICATION CODE**

64 bits, factory pre-programmed

**ENCAPSULATION**

Biocompatible glass

**READING RANGE**

GR-250 up to 9 cm (3.54 in.)

**TRANSMIT TIME**

119 µs/bit

**SCAN ANGLE**

Spherical

**STORAGE TEMPERATURE (tested exposure 1 hour)**

-40°C to +140°C (-40°F to 284°F)

**OPERATING TEMPERATURE**

-20°C to +75°C (-4°F to 167°F)

**OPERATING FREQUENCY**

128 kHz

**ENVIRONMENT**

IP68

**DIMENSIONS**

Length: 11.5 mm (0.44 in.)  
 Diameter: 2.12 mm (0.083 in.)

**WEIGHT**

0.09 g (0.002 oz)

**IDENTIFICATION CODE**

64 bits

**ENCAPSULATION**

Biocompatible glass

**SCAN ANGLE**

Spherical

**STORAGE TEMPERATURE (tested exposure 1 hour)**

-40°C to +140°C (-40°F to 284°F)

**OPERATING TEMPERATURE**

-20°C to +75°C (-4°F to 167°F)

**OPERATING FREQUENCY**

128 kHz

**ENVIRONMENT**

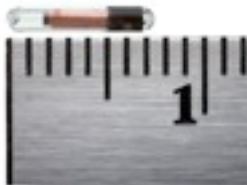
IP68

**MECHANICAL PRESSURE**

Axial max. 10N  
 Radial max. 40N

**VIBRATION**

Random -20 to 2,000 Hz/10 g/1 hr. p. axis  
 Sine -20 to 2,000 Hz/5 g/1 hr. p. axis



**DIMENSIONS**

**NEEDLE**

Length: 32 mm (1.25 in.)  
 Outside dia.: 2.6 mm (0.10 in.)

**SYRINGE ASSEMBLY INC. NEEDLE**

Length: 138.5 mm (5.45 in.)  
 Max width: 45 mm (1.77 in.)



# TROVAN SA 148 Panel Reader

The SA 148 is a stationary RFID reader system suitable for deployment in industrial, laboratory, and field environments. Each reader consists of a high performance triple coil antenna, reader electronics combination. The reader's rugged design makes it suitable for a wide range of industrial and animal applications. This reader may be configured with just reader capabilities, or a combination reader with sensor, control and/or display capabilities. PC connectivity may be via RS-232, USB, or Bluetooth. PC utility software is available.

## DIMENSIONS

Width	203 mm (8 in.)
Length	340 mm (13.4 in.)
Height	28 mm (1.1 in.)
	96.5 mm (3.8 in.) w/ control box

## WEIGHT

2 kg (4.5 lbs).

## POWER

12 Vdc 1.25 A

## DISPLAY

Red LED - flashes to indicate reading in process

Green LED - illuminates when transponder is read

## OPERATING FREQUENCY

128 kHz  $\pm$  3 kHz

## ENVIRONMENT

Indoors (optional: IP67 Water resistant configuration)

## MEMORY STORAGE

3,072 transponder readings w/ date and time.

Readings can be stored in up to 254 separate groups or "lots"

- 1) Normal - read & send ID number on RS-232 interface
- 2) Save mode (Optional) - read & save transponder ID number (with date & time) into a group (Lot) in memory.

## INTERFACE

RS-232 300/1200/2400/4800/9600 (default)  
19200 BAUD

## OPERATING TEMPERATURE

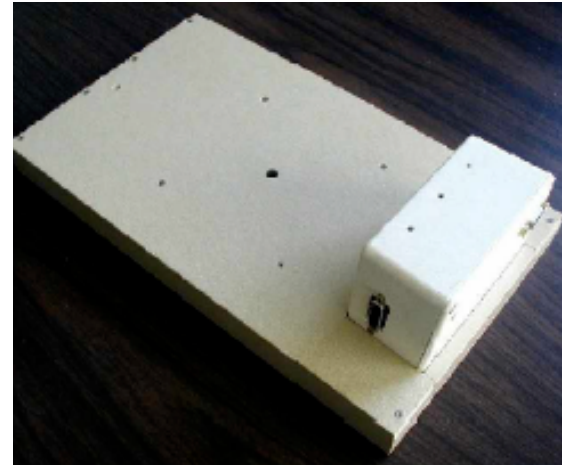
0°C to 50°C

## MAXIMUM READING DISTANCE

ID-100	up to 220 mm (8.6 in)
ID-200	up to 340 mm (13.3 in)
ID-300	up to 270 mm (11 in)
ID-400	up to 560 mm (22 in)



**SA-148SQ** - Wildlife reader/data logger (IP67)



**SA-148C** - Reader/controller - integrated electronics



**SA-148W** - Watertight indoor configuration

# TROVAN PR-xM High Performance Portable Pole Reader

The PR-1M is a high performance portable pole reader that maximizes read range as well as reach. The long pole (length can be customized according to the customer's requirement) allows the operator to stand at a distance from the object or animal being scanned. Compatible with Trovan Unique transponders - standard.

**OPTION:** Multi-system reader, compatible with all implantable transponders.

## DIMENSIONS

### PR-1MI

Pole length: 1016 mm (40 in.)  
 Antenna: 178 x 216 mm (7 x 8.5 in.)  
 Control box: 152 x 89 x 51 mm (6 x 3.5 x 2 in.)

### PR-1M-SE

Pole length: 1016 mm (40 in.)  
 Antenna: 178 x 216 mm (7 x 8 1/2)  
 Control box: 152 x 89 x 51 mm (6 x 3.5 x 2 in.)

### PR-2M-I-A

Pole length: 2030 mm ((80 in.)  
 Antenna: 178 x 216 mm (7 x 8 1/2 in.)  
 Control box: 152 x 89 x 51mm (6 x 3.5 x 2 in.)

## WEIGHT

**PR-1M-SE:** 1600 g (56.4 oz)

Antenna 1270 g (44.8 oz)

Electronics box 500 g (17.6 oz)

**PR-1M-I:** 1600 g (56.4 oz)

Antenna 1300 g (45.8 oz)

Electronics box 500 g ((17.6 oz)

**PR-2M-I-A** 3538 g (124.8 oz)

Antennal 2858 g (101 oz)

Electronic box 500 g (17.6 oz)

## POWER SUPPLY

Internal rechargeable NiMH battery pack

## DISPLAY

LEDs: Red & green LED (Reading and read)

LCD : (2 lines x 16 characters)

## MEMORY STORAGE

3,072 transponder readings with date & time

## COMPUTER INTERFACE

RS232: up to 19,200 baud

## OPERATIONAL MODES

Normal: Read & display/transmit ID via RS-232

Options:

- Save ID and date and time
- Search for stored ID

## OPERATING FREQUENCY

128 kHz ± 3 kHz

## ENVIRONMENT

IP67

## OPERATING TEMPERATURE

0°C to 50°C

## MAXIMUM READING DISTANCE

ID-100 up to 177.8 mm (7 in.)

ID-200 up to 279 mm (11 in.)

ID-300 up to 203 mm (8 in.)

ID-400 up to 406 cm (16 in.)



**PR-1M-I** (with 1 meter, pole extension; integrated electronics)



**PR-1M-SE** (with 1 meter, pole extension; separated electronics)



**PR-2M-I** (with 2 meter, pole extension; integrated electronics)



# TROVAN LID-572EP Probe Pocket Reader

The LID-572EP Probe Pocket Reader, with USB comms is a low-cost portable reader for applications that do not require maximum read range performance. It features a small wand-type probe for added reach. Typical applications include dog breeders' individual operations pet I.D. in veterinary practices and use in inventory applications.

The reader will store up to 1600 readings in memory (700 readings with a time and date stamp) and will download them to a PC via USB or optionally IRDA. The LID-572EP Probe Pocket Reader will also read TROVANFLEX™ transponders, clearly differentiating them from the standard TROVAN UNIQUE™ ID codes.

## DIMENSIONS

Width	69.8 mm (2.7 in.)
Length	125.4 mm (4.9 in.)
Height	24 mm (09 in.)
Probe length	165 mm (6.5 in.)
Probe dia.	18mm (.70 in.)

WEIGHT 120 gr.

SUPPLY VOLTAGE 9 V battery

## SUPPLY CURRENT

Antenna activated 173 mA

Antenna deactivated 26 mA

## BATTERY LIFE

Approx. 1 hour (continuous read)

## DISPLAY

LCD (2 lines x 16 characters)

## MEMORY

w/o date and time: 1600 codes

with date and time: 700 codes

## INTERFACE

mini n-USB port

IRDA (infrared)

## TYPICAL READING TIME

24 ms

## MATERIAL

ABS UL 94 H

## OPERATING TEMPERATURE

0 C to +70 C (32 F to +158 F)

## IDENTIFICATION CODE

64 bits, factory pre-programmed

## READING DISTANCE

ID-100 up to 50 mm (1.97 in.)

ID-200 up to 75 mm (2.95 in.)

ID-300 up to 45 mm (1.77 in.)

ID-400 up to 130 mm (5.12 in.)

## OPTION:

LID572EP/BT Blue tooth interface



**OPTIONAL ADDITIONAL EQUIPMENT**  
**BT-570 Protective rubber boot**

# TROVAN ID-1000BR Wrist Band

The TROVAN ID 1000BR Wrist Band ID is an ergonomic form of identification useful in access control, time and attendance, security applications, ticketing, in applications ranging from swimming pools, resorts, fitness centers, amusement parks or ski lift ticketing. The Wrist Bands are fully waterproof as they are manufactured using ultrasonic welding to seal the housing. The TROVAN ID 1000BR Wrist Band ID provides outstanding performance and durability in harsh environments.

## DIMENSIONS

Length, inc. strap: 270 mm (10.6 in)

Thickness, strap: 16 mm (0.6 in)

Diameter of face: 34.5 mm (1.4 in)

## IDENTIFICATION CODE

64 bits, factory pre-programmed

## ENCAPSULATION

PVC, ultrasonically welded

## SCAN ANGLE

Spherical

## OPERATING TEMPERATURE

-20°C to +60°C (-4°F to 140°F)

## OPERATING FREQUENCY

128 kHz

## ENVIRONMENT

IP68

## MECHANICAL PRESSURE

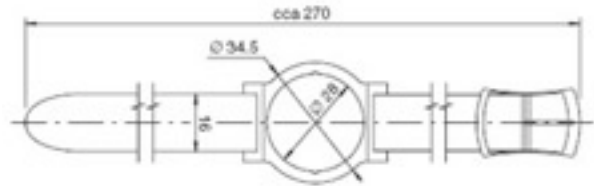
Axial max. 10N

Radial max. 40N

## VIBRATION

Random -20 to 2,000 Hz/10 g/1 hr. p. axis

Sine -20 to 2,000 Hz/5 g/1 hr. p. axis



# TROVAN ID-100T Tree Transponder

The TROVAN ID-100T Tree Transponder is designed for applications where a small, unobtrusive ID tag is called for. This configuration is suitable for identification of trees, wood products. It can be submerged in liquids and the nail-type form factor is unobtrusive and easy to insert. It can be used on items with very small dimensions, which require a tiny ID tag.

## TRANSPONDER

### DIMENSIONS

Length:	33.5 mm
Diameter:	4.0 mm
Diameter, head:	5.5 mm

### WEIGHT

0.5 g

### IDENTIFICATION CODE

64 bits, factory pre-programmed

### READING RANGE

GR-250	up to 24 cm (9.45 in.)
Maximum	up to 33 cm (13 in.)

### TRANSMIT TIME

119  $\mu$ s/bit

### SCAN ANGLE

Spherical

### STORAGE TEMPERATURE (tested exposure 1 hour)

-40°C to +140°C (-40°F to 284°F)

### OPERATING TEMPERATURE

-20°C to +75°C (-4°F to 167°F)

### OPERATING FREQUENCY

128 kHz

### ENVIRONMENT

IP68

### MECHANICAL PRESSURE

Axial max. 10N  
Radial max. 40N

### VIBRATION

Random -20 to 2,000 Hz/10 g/1 hr. p. axis  
Sine -20 to 2,000 Hz/5 g/1 hr. p. axis



# TROVAN SQID Multiplexed Datalogger System

The SQID Multiplexed Datalogger System is a modular stationary RFID reader system suitable for deployment in laboratory/field research environment. Each SQID pod consists of up to four RFID reader (high performance triple coil antenna, and data logger unit) connected to a system control unit (SCU) that may be located up to 30 meters away. This allows the four readers to cover a circular area of 60 meters diameter around the SCU. Cables are provided in 15 meter sections for added flexibility. Dataloggers may also be provided with Bluetooth interface for communication to the PC.



## SQID System Antenna

### DIMENSIONS

340 x 203 x 28 mm (13.4 x 8 x 1.1 in.)

### ENVIRONMENT

IP67

### OPERATING FREQUENCY

125 kHz - 135 kHz

### OPERATING TEMPERATURE

-20 C to 50 C

### MAXIMUM READING DISTANCE

ID-100 up to 241 mm (9.5 in)

ID-200 up to 356 mm (14 in)

ID-300 up to 279 mm (11 in)

ID-400 up to 559 mm (22 in)

### ANTENNA TO DATALOGGER:

Cable 1 meter

Transmitter controls & read signal



## SQID System Datalogger

### DIMENSIONS

190 x 190 x 127 mm (7.5 x 7.5 x 5 in.)

### ENVIRONMENT

IP67

### DATALOGGER CONNECTIVITY

Antenna Cable 1meter

Transmitter controls & read signal

SCU 15/30 m cable, power & comm.

Sensors & Controls device dependent



## SQID System Battery Eliminator

### DIMENSIONS

280 x 254 x 177 mm (11 x 10 x 7 in.)

### ENVIRONMENT

IP67

### BATTERY ELIMINATOR CONNECTIVITY

Input 120.220 VAC 50-60 cycles

Output to SCU 12 VDC



## SQID System Control Unit

### DIMENSIONS

330 x 280 x 152 mm

(13 x 11 x 6 in.)

### ENVIRONMENT

IP67

### SCU CONNECTIVITY

computer, battery eliminator, solar 12 VDC power 4 datalogger channels - power and communications, power is protected by fuses.



## TROVAN ID-2100 Rugged Plug

The ID-2100 Rugged Plug is designed for use in harsh industrial environments. It will survive repeated temperature cycling and is IEC 68-2-6 / 29 rated for shock and vibration.

### DIMENSIONS

Height 15 mm  
OD 30 mm

### WEIGHT

circa 9 g.

### IDENTIFICATION CODE

64 bits, factory pre-programmed

### SCAN ANGLE

Spherical

### STORAGE TEMPERATURE (tested exposure 1 hour)

-40°C to +85°C (-40°F to 185°F)

### OPERATING TEMPERATURE

-25°C to +85°C (-13°F to 185°F)

### OPERATING FREQUENCY

128 kHz

### ENVIRONMENT

IP67

### ENCAPSULATION MATERIAL

ABS, PC, Epoxy

### SHOCK & VIBRATION

IEC 68-2-6 / 29

### READING RANGE (with GR-250 reader)

30 cm (11.8 in.)



## TROVAN PR FDX Programmer

The PR FDX Programmer is a simple, compact read/write module with integrated antenna that is designed to program ID-160 134.2 kHz FDX-B compatible and compliant tags. It connects easily to a PC via an RS232 or USB interface (please specify when ordering). The programmer comes with driver software and an application software program that allows you to easily program ID tags from your Windows XP laptop or desktop computer.

### DIMENSIONS

Width 80 mm (3.1 in.)  
Length 80 mm (3.1 in.)  
Height 28 mm (1.1 in.)

### BATTERY/POWER REQUIREMENTS

USB version: powered through USB port  
RS232 version: 9V power supply

### INDICATORS

Red, yellow and green LEDs.

### INTERFACE (specify when ordering)

RS232 (19200 baud), USB

### HUMIDITY

95% non-condensing

### OPERATING TEMPERATURE

-10°C to +55°C (15°F to +130°F)

### TRANSPONDER TYPES SUPPORTED (FDX-B):

ID-160 unprogrammed transponders



# TROVAN ID-160A Microtransponder

The TROVAN ID-160A ISONORM Microtransponder is designed for applications where a small, unobtrusive ID tag is called for. This configuration is suitable for large-scale animal applications (for example fish hatcheries) requiring smallest-size transponders and/or extended exposure to fluids. The ID-160A ISONORM Microtransponder is ISO 11785 compliant and ISO 11784 compatible, for use in identification applications which do not require ID code security.

## TRANSPONDER

### DIMENSIONS

Length:	11.5 mm (0.44 in.)
Diameter:	2.12 mm (0.083 in.)

### WEIGHT

0.09 g (0.002 oz)

### IDENTIFICATION CODE

128 bits, customisable

### ENCAPSULATION

Biocompatible glass

### SCAN ANGLE

Spherical

### STORAGE TEMPERATURE (tested exposure 1 hour)

-40°C to +140°C (-40°F to 284°F)

### OPERATING TEMPERATURE

-20°C to +75°C (-4°F to 167°F)

### OPERATING FREQUENCY

134.2 kHz

### ENVIRONMENT

IP68

### MECHANICAL PRESSURE

Axial max. 10N  
Radial max. 40N

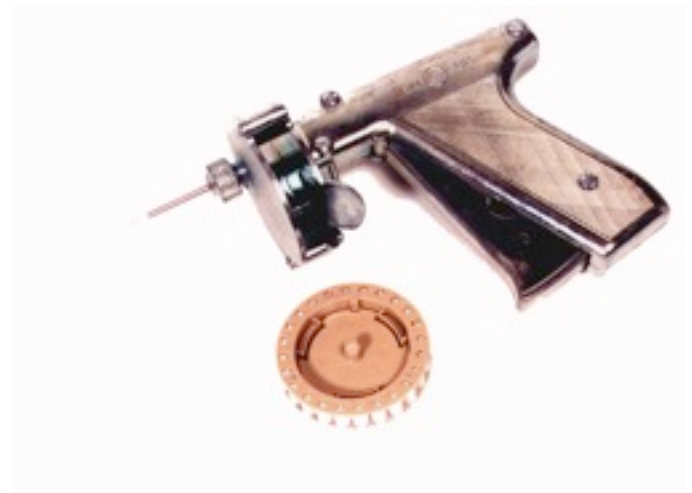
### VIBRATION

Random -20 to 2,000 Hz/10 g/1 hr. p. axis  
Sine -20 to 2,000 Hz/5 g/1 hr. p. axis



## OPTIONAL ADDITIONAL EQUIPMENT

**IM-200** Multi-implanter gun with  
**CAR-200** 25-transponder cartridge



**IM-1xxIN** Single shot implanter



# TROVAN BL-162 Intraruminal Bolus

The BL-162 ISONORM Intraruminal Bolus Transponder is designed for use in livestock identification applications. It is made of high-quality ceramic and features an FDX-B transponder that is pre-programmed with a 15-digit ID code. The BL-162 ISONORM Intraruminal Bolus Transponder is ISO 11784/ ISO 11785 compliant. There is a 50 g configuration for small ruminants such as goats and sheep, and a 72 g configuration for large ruminants such as cattle and bullocks. The system features FDX-B Transponders compliant with ISO 11784 and ISO 11785 for use in animal identification applications which do not require ID code security.

## TRANSPONDER

### DIMENSIONS

#### **BL 162/50**

Length: 68 mm  
Diameter: 17 mm

#### **BL 162/70**

Length: 66.5 mm  
Diameter: 21 mm

### WEIGHT

#### **BL 162/50**

50 g  $\pm$  1 g

#### **BL 162/70**

70 g  $\pm$  1 g

### IDENTIFICATION CODE

128 bits, factory pre-programmed

### ENCAPSULATION

Biocompatible glass

### SCAN ANGLE

Spherical

### STORAGE TEMPERATURE (tested exposure 1 hour)

-40°C to +140°C (-40°F to 284°F)

### OPERATING TEMPERATURE

-20°C to +75°C (-4°F to 167°F)

### OPERATING FREQUENCY

134.2 kHz

### ENVIRONMENT

IP68

### MECHANICAL PRESSURE

Axial max. 10N

Radial max. 40N

### VIBRATION

Random -20 to 2,000 Hz/10 g/1 hr. p. axis

Sine -20 to 2,000 Hz/5 g/1 hr. p. axis



# TROVAN ID-1000D and ID-1062D, Anti-Tamper Electronic Eartags for Livestock

The TROVAN ID 1000D Anti-Tamper Electronic Eartag for Livestock is a mushroom-shaped universal stud with a transponder embedded in tough nylon. It features a tamper-evident button shaped to fit deep in the ear between the ribs. The stud is resistant to stretching, tearing and cutting. The mushroom shape of the stud helps resist snagging by strings, feeders and fencing. The stud and tamper-evident button can be applied using a number of standard tagging pliers, using a special pin that will be provided with each bag of eartags. Each tag carries a globally unique TROVAN UNIQUE ID code (ISO 11785 Annex A compliant).

## DIMENSIONS

Flag dia.:	43 mm (1.69 in.)
Stud length:	15 mm (0.59 in.)
Button cross section (narrow side):	18 mm (0.7 in.)
Button cross section (long side):	28 mm (1.1 in.)
Distance between flag base and top of stud:	8 mm (0.31 in.)

## IDENTIFICATION CODE

64 bits, factory pre-programmed

## ENCAPSULATION

Nylon, ultrasonically welded

## SCAN ANGLE

Spherical

## OPERATING TEMPERATURE

-20°C to +60°C (-4°F to 140°F)

## OPERATING FREQUENCY

128 kHz

## ENVIRONMENT

IP68

The TROVAN ID 1062D Anti-Tamper Electronic Eartag for Livestock is a mushroom-shaped universal stud with a transponder embedded in tough nylon. It features a tamper-evident button shaped to fit deep in the ear, and to free-rotate when closed with the stud. The stud is resistant to stretching, tearing and cutting. The mushroom shape of the stud helps resist snagging by strings, feeders and fencing. The stud and tamper-evident button can be applied using standard tagging pliers and a special pin that will be provided with each bag. Each tag features a read-writable IC that can be coded with an ISO 11784/85 compliant ID number (15-digits, numeric).

## DIMENSIONS

Flag dia.:	43 mm (1.69 in.)
Stud length:	15 mm (0.59 in.)
Button cross section (narrow side):	18 mm (0.7 in.)
Button cross section (long side):	28 mm (1.1 in.)
Distance between flag base and top of stud:	8 mm (0.31 in.)

## IDENTIFICATION CODE

128 bits, read-writable

## ENCAPSULATION

Nylon, ultrasonically welded

## SCAN ANGLE

Spherical

## COLOR

Yellow or white

## OPERATING TEMPERATURE

-20°C to +60°C (-4°F to 140°F)

## OPERATING FREQUENCY

134.2 kHz

## ENVIRONMENT

IP68





# TROVAN ARE H12 Wand Reader

The TROVAN ARE H12 ISO 11784/85 Wand Reader is designed specifically to operate in the most demanding environments, such as livestock ID. It is fully ISO 11784/85 compliant, and reads both FDX-B and HDX type transponders. Its wand type antenna extension provides the operator with additional reach. The ARE H12 reader case is manufactured with heavy duty ABS to ensure ruggedness.

## DIMENSIONS

Width 100 mm (3.9 in.)  
 Length 620 mm (24.4 in.)  
 Height 100 mm (3.9 in.)

## WEIGHT

approx. 750 g (1.65 lbs).

## BATTERY/POWER REQUIREMENTS

12 VDC, 1.1A rechargeable  
 NIMH battery pack

## SUPPLY CURRENT

Antenna activated 173 mA  
 Antenna deactivated 26 mA

## DISPLAY

LCD (2 lines x 16 characters)

## MEMORY

5,000 readings with time and date stamps

## INTERFACE

USB, Bluetooth (optional)

## ENVIRONMENT

IP 67

## MATERIAL

ABS

## OPERATING TEMPERATURE

0°C to +50°C (32°F to +122°F)

## STORAGE TEMPERATURE

-10°C to +50°C (50°F to 122°F)

## EXCITATION FREQUENCY

134.2kHz

## SYSTEMS SUPPORTED

ISO 11784/85 FDX-B, HDX compatible

