

# MARK TECH: 666

● [NEWS FDA approves computer chip for humans](#)

● [NEWS Subdermal Biochip Implant for Cashless Transactions](#)



The **mark** is a microchip assembly which will be implanted under the skin of the right hand. Later on, the mark will be implanted under the forehead, so people who have no right hand could also have the mark. The microchip assembly, called radio frequency identification (RFID) is already used in animals. In dogs, the RFID is placed between the shoulder blades, and in birds it is implanted under the wing. Now there is one for humans called [VeriChip™](#).

Applied Digital Solutions wants to market this chip to be used by doctors and hospitals to keep track of medical records.

## Section 1

### How/When it Started

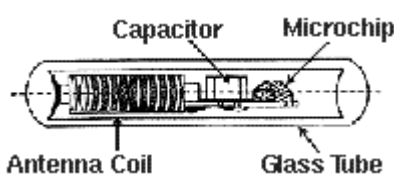
Thurston County Animal Shelter in Washington was the first shelter to begin using the microchips. They began the chip implantation program in 1991. By scanning the area of the microchip insertion, shelters can tell immediately who the owner is of the stray pet they are scanning. The chip sends back a reference number which can be checked in several national databases.

The ID number reveals who the pet's owner is, where the owner lives, the vet performing the service, and the shelter where the animal was implanted with the microchip device. The easiness of identification allows for immediate return of the animal to its owner, eliminating the need for a standard 2 day holding period. Using RFIDs reduces the shelter expenses for holding stray pets.

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## Section 2

### How it Works



The RFID implant/VeriChip consists of a microchip, an antenna coil, and a capacitor all enclosed within a sealed glass tube.

Surrounding this assembly there is an anti-migration cap to

impede migration of the implants within the body of the animal. The patented BioBond anti-migration cap is a porous polypropylene polymer sheath attached to RFID microchip implants. The use of the BioBond cap results in increased retention by promoting the development of fibroblasts and collagen fibers around the implant, thus inhibiting movement of the RFID within the tissue where the device was placed.

Each chip is individually inscribed with a unique identification number during the manufacturing process to ensure that no two RFIDs have the same code number. Each microchip is programmed to store an alphanumeric identification code. The inscribed number identifies the chip by its manufacturer, while the programmed alphanumeric code identifies the animal or human.



When a scanner is passed over the chip, it sends out low level radio waves which penetrate the inert glass seal and strike the antenna. This creates a small amount of electric current which is stored by the capacitor. The capacitor sends the current to the microchip, which uses the current to access its stored alpha-numeric code. The microchip then sends the code to the antenna, where it will be picked up and read by the scanner. An LCD on the scanning device will then show the ID code. When the number is displayed by the scanner it will

be transmitted to an FDA compliant secure data storage site by authorized personnel via telephone or Internet (if used in the USA).

People are being conditioned to accept scanners. [Thumb scanners](#) are used to identify customers, so that they do not have to carry a credit card or money. Already in grocery stores like Kroger in Texas, and Thirftway in Seattle, thumb scanners are offered as a convenient alternative to customers. This is to prepare people for the eventual scanning of the mark.

## Section 3

### Microchip Manufacturers

There are three major microchip systems in the US.

1. Destron-Fearing Company makes the HomeAgain chip system which is marketed by Schering-Plough Animal Health.

The registration and recovery service is provided by the American Kennel Club. Destron-Fearing also has been known to collaborate with another microchip company AVID.

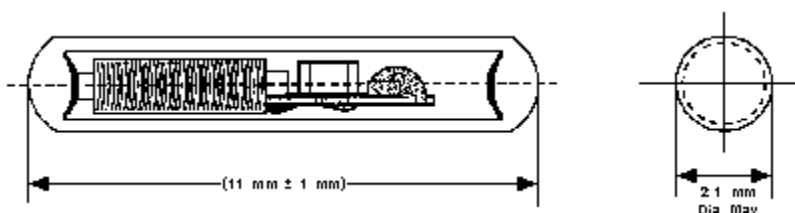
2. AVID (American Veterinary Identification Devices), and also AVIDCanada make PETtrac. AVID was originally marketed by Identichip Services Recovery System, although now they are almost always partnered with Destron-Fearing.

3. Trovan markets the InfoPET System. They have switched to working with Biomark Inc to track wildlife and fish.

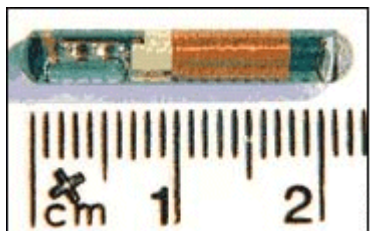
Trovan also markets chips for tracking personal objects.

## Section 4

### Size of the RFID Device



The microchip assembly has the size of "a grain of rice". It varies between 1 to 2 cm in length, and about 1/4 cm in diameter (less than one inch in length and 1/8 of an inch in width).

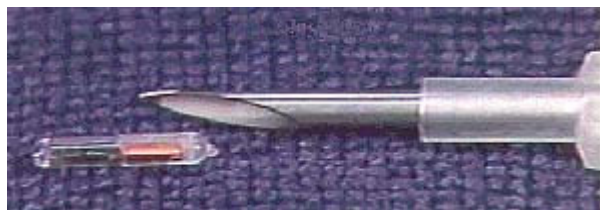


By reducing the size of the components of the RFID it has become possible to insert this device inside the animal or person carrying the implant. The benefits for wildlife is that it cannot be lost. The benefits for future human users is that it will not be able to be disposed quickly by kidnappers as the case with bracelets will be.

## Section 5

### Syringes

The syringes that are actually in use for animal implantation in veterinary offices use either liquid or air to push the implant into the site under the skin.



## Section 6

### Readers

To be able to read information from the microchip, there are already hand held readers and pocket readers.



*Pocket Reader EX<sup>®</sup>*



*Pocket Reader<sup>™</sup>*

As a scanner is passed over the chip, it sends out low level radio waves which penetrate the inert glass seal and strike the antenna. This creates a small amount of electric current which is stored by the capacitor. The capacitor sends the current to the microchip, which uses the current to access its stored alpha- numeric code. The microchip then sends the code to the antenna, where it will be picked up and read by the scanner. An LCD on the scanning device will then show the ID code.

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## Section 7

### Human Implantable Devices

To make it palatable for the consumer, the idea of implants has gradually developed. In the same way, the mark of the beast will evolve from a bracelet type device to an implanted device in the hand, and finally to an implanted device in the forehead/brain.

Here are some examples of current implanted devices.

#### **1. Cardiovascular pacers    2. Brainstem implants**



[Medtronic Kappa® Pulse](#)



nucleus 24 Auditory Brainstem Implant (ABI)

### 3. MEMS (Micro Electro-Mechanical System)

The micro-electro mechanical systems device (MEMS) is an implantable micro-sensor that can send data to a hand-held receiver outside the body, alerting doctors to a potential medical crisis, without using any wires or batteries.

Doctors can check the condition of a patient's heart by holding the receiver near the patient. Patients can even monitor their condition at home.

Initial data on the MEMS was presented in January of 2002 at the 14th annual International Symposium on Endovascular Therapy in Miami Beach, Florida.

The MEMS can monitor blood pressure levels in patients with heart failure or with abdominal aortic aneurysm, an abnormal widening of the aorta. If it works, it could provide doctors with an easier way to catch serious problems.

This device is implanted directly in the area under study, such as in an aortic aneurism. The reader device outside the body is the monitor.

By using more implantable medical devices the public becomes desensitized to the idea of more sophisticated technology being implanted inside the body.

### 4. Brain Pacemaker

The Brain Pacemaker on the right stimulates the brain and helps prevent seizures. This type of pacemaker works by stimulating the vagus nerve. It consists of a pulse transmitter, which looks like a pocket watch, along with proper wiring. It is implanted in the patient's chest and then connected by wire to the left vagus nerve, which runs down the neck and connects the brain stem with the heart, lung and stomach. The pacemaker periodically gives electrical stimulation to the brain to avoid the onset of seizures.

They now want to study this type of implant and examine its use on depressed patients.



The "Brain Pacemaker" helps prevent epileptic seizures.

About 20% of depressive disorders do not respond to either antidepressants or psychotherapies. Scientists plan to use the pacemaker in this group of patients.

## 5. Transcranial Magnetic Stimulation

Another method being considered to treat depression is Transcranial Magnetic Stimulation (TMS).

The patient sits down on a chair and has an octagonal coil of between 10 to 15 centimeters diameter placed on their head.

The coil then carries a current several times per second and generates rapidly pulsating magnetic fields, which stimulate the left forebrain - an area linked to depression

Other types of implants approved by the FDA which are inserted inside the body of the patients are: insulin pumps, drug delivery pumps, pain control systems, and nerve stimulators.



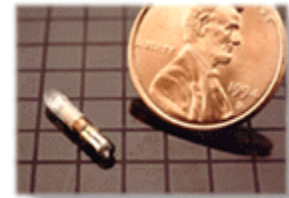
The brain can be stimulated by electric currents

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## Section 8

### RFID/VeriChip in Humans

The use of microchips in animals -- now a legal requirement for anyone wanting to ship a cat or dog abroad -- seems fairly harmless. Extending the use to the human population is the next step.



An x-ray of a hand with the implant is included so the reader could compare the human anatomy. The **RED** arrow is pointing to the implant which we believe will be inserted under the skin of the palm by a syringe device specially made for this type of implantation.



The availability of implants for use in the human population of the US is no longer the preserve of fiction. One US-based company, Digital Angel, a subsidiary of Applied Digital Solutions (ADS), has already developed the technology for a tracking implanted device to be used in the human population. The makers dwell on the benevolent uses of the device -- such as allowing doctors to monitor medical conditions. Opposition from religious groups, and necessity of FDA approval has delayed the use of the embedded chips.

In December 2001, Digital Angel came out with the VeriChip™. In February 2002 it also applied for the trademarks "get chipped" and "[Chipsons](#)" regarding the Florida family, the

Jacobs', the first family to be implanted. In June of 2002, ADS was to receive approval for human use of the VeriChip. The chips are being sold in South America where they do not need FDA approval.

■ **NEWS** Digital Angel Corp. [merges](#) with BI Inc.

Head of Privacy International, Simon Davies, believes chips could be employed as tracking devices. "The pattern for these things is they start as medical uses, then becomes used in the military or in prisons. Then become voluntary, then compulsory," he says.

Chips are already required in patients who have hip replacements and other prosthetic devices.

The continuation of acts of terrorism in the US, especially after the incidents on September 11, 2001 has removed most opposition to implantation. ADS chief technology officer Keith Bolton said "Right now we have over 2,000 kids who have e-mailed, wanting to have the chip implanted," he said. "They think it's cool."

■ **NEWS** In October 13, 2004, the FDA finally approved the chip for use in human patients.

## Section 9

### Digital Angel

**Digital Angel systems consist of a unique combination of sensor, location and Web-enabled wireless technologies to provide transmission of critical sensory and biosensory data and location information in real time."**

#### New Products



The bracelets pictured above are marketed by the company Digital Angel. They started with these bracelets due to the negative reception to the implantations from religious groups aware of the fulfillment of prophecy.

This company offers its products mainly to the following users:

The first generation of Digital Angel Products has been designed especially for:



**Seniors** suffering from Alzheimer's and other conditions resulting in diminished cognitive skills, causing them to wander from time to time



**Children** who may get lost or visit friends without letting you know



**Pets** that may leave your property, or worse, be taken.

"Digital Angel's pulse sensors are based on infrared radiation naturally emitted from the wearer's own bloodstream. Our engineers are also developing sensors to allow measurement of a great many factors, which operate by utilizing selected wavelengths of light - with no skin breakage whatsoever."

"EKG and EEG sensors will be available shortly. So will Digital Angel's solid-state Heat Cells - another unique, proprietary component to our technology - which will power Digital Angel products by utilizing body heat to produce electricity.

Solid-state accelerometers and gyroscopes, in addition to providing inertial tracking, also enable Digital Angel products to sense posture and gait of the wearer. This ability is important, for example, to users who are at risk for falling.

Digital Angel incorporates other sensors in products depending on the desired function. Sensors currently available measure: body temperature, ambient temperature, pulse, blood pressure, sound, vibration, parts proximity, and pressure. EKG and EEG sensors will be available shortly.

Inertial tracking technology - Sudden Fall Sensor - enables Digital Angel systems to sense the current posture of the wearer as well as his or her gait. This is of utmost importance to users who are at risk for falling."

## System Overview

"The strength of our products flows from Digital Angel's unique, convergent application of these technologies and from our leadership in miniaturization.

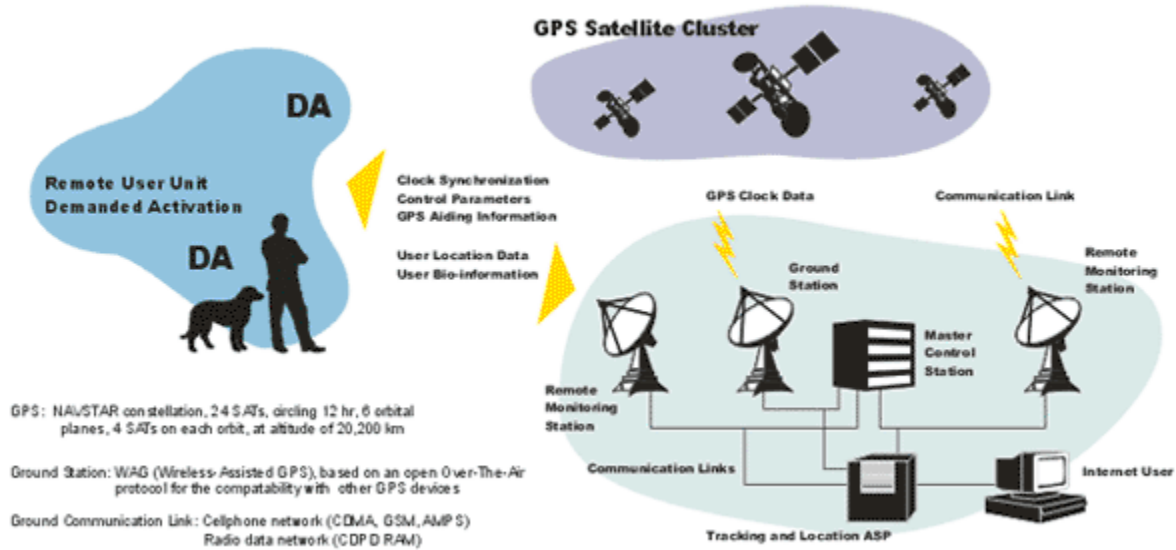
What's more, the entire system is designed with network independence to accommodate various networks and carriers.

Digital Angel Delivery System collects the data received from the Digital Angel devices, identifies the source of data and routes it to the appropriate middle tier components.



The system has the capacity to integrate all aspects of the communications chain connecting a Digital Angel to subscribers, whether they are members of the individual's family and/or care-givers."

## Digital Angel™ System Architecture



"The Digital Angel Delivery System works by combining highly complex software responsible for data collection and delivery with the advanced infrastructure needed to operate it.

The precise geographic location of the wearer of the Digital Angel device can be pinpointed in real time by the caregiver or parent by logging onto the Digital Angel website, using a secure password".

"Here's what the Digital Angel Delivery System looks like on a subscriber's Web-based computer:

As shown, the Digital Angel Delivery System can manage medical applications by gathering bio-readings such as pulse and temperature, and communicating the data, along with location information, to a ground station or call center."



"Transmission to Subscribers

All the information can then be made available via a secure website, for monitoring by a caregiver. This is our ultimate objective: to offer Digital Angel users a convenient and practical way to retrieve critical location and biological information.

Information can be disseminated via Web browsers, wireless devices such as PDAs, cell phones and pagers, e-mail, WIN32, embedded devices and others. This is accomplished by creating a "virtual agent" for each supported device.

Digital Angel employs appropriate internal modem technology according to the prevalent wireless infrastructure in the primary area of use. For example, in Europe and Asia this is GPRS, GSM, and paging. In the United States, there is a wider choice, but virtually all provide nation-wide coverage: CDPD, CDMA, TDMA, AMPS, two-way paging, and radio modem.

There are no cell towers airborne, or at sea. Digital Angel is arranging with transportation companies to incorporate appropriate relay devices in their aircraft or seagoing vessels for direct satellite transmission, originating from the miniature modem worn by the customer."

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## Section 10

### Present Use of the VeriChip™

In South America and Europe, the VeriChip produced by [ADSXE](#) is being marketed to identify kidnapped children or adults. Colombia has 3,000 kidnappings per year, the kidnap capital of the world.

The problem of kidnappings continues to get worse and worse. For example, the city of São Paulo, Brazil home to 17 million, had 251 kidnappings in 2001 compared to 39 in 2000, and 13 in 1999.

Cunha Lima, a Brazilian legislator who has served in public office for more than 22 years, said he is excited by the VeriChip's capabilities as a kidnapping deterrent. "I believe this technology will contribute to the public safety and security of Brazilians," he said. "I believe this technology will act to deter the shocking rise of kidnapping in our cities and particularly the abhorrent kidnapping of the children of businessmen."

The makers of the VeriChip promote their product as a universal identification device: "We are promoting [VeriChip](#) as a universal means of identification. We expect it to be used in a variety of applications including transportation security, residential and commercial building access, military and government security."

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## Section 11

## Other Links:

<http://www.sundayherald.com/print21807>

<http://www.bvalphaserver.com/article.php?sid=1941>

<http://www.cnn.com/2002/HEALTH/01/22/microchip.heart/index.html>

<http://www.animal-id.com.au/mchips.html>

<http://news.zdnet.co.uk/story/0,,s2083914,00.html>

<http://www.medtronic.com/brady/clinician/medtronicpacing/clinmedt.html>

<http://www.cochlear.com>

<http://www.cnn.com/HEALTH/9908/25/brain.pacemaker/>

[http://news.bbc.co.uk/1/hi/english/health/newsid\\_1418000/1418091.stm](http://news.bbc.co.uk/1/hi/english/health/newsid_1418000/1418091.stm)

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Other companies will follow Digital Angel's steps. The chips will become accepted worldwide. The technology, as the reader can see, is already developed. All it needs is public acceptance.

We Christians know that the return of Jesus/Yeshua our Messiah for the rapture/rescue must be really close. May we all turn to God in our hour of trial and pray for His rescue from the things that are about to develop on this earth.

Do not forget to read [Time for the Rescue](#) and may God bless you all with the spirit of understanding.

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