

Wireless Interrogative Technology

▲ Introduction

Physiological Remote Implantable Sensing Monitors Inc. (AKA PRISM Telemetry Inc.) is introducing world's smallest and longest operating miniature implant. PRISM's Wireless Interrogative Technology (WIT), offers physiological sensing implants for a wide variety of applications in preclinical research, physiology testing, toxicology and pharmacology. This patented proprietary technology simplifies the measurement of internal pressure and temperature in animal research, particularly small animals and long studies.



▲ RF Enabled Technology

PRISM's Radio Frequency (RF) enabled telemetry was developed to monitor the hemodynamic parameters in physiological systems. It offers researchers a battery-free, wireless, telemetric instrumentation and real time data acquisition system to advance physiology science. After implantation, it allows safe and non invasive monitoring of the subjects on demand or consciously. WIT technology has applications in academic research, pharmaceutical development, medical device development, contract animal research organizations, government lab sand biotechnology companies.

▲ PRISM Telemetry Products

A miniature, wireless, battery-free, implant coupled with a handheld reader for biological and physiological measurement applications. Optimized for studies that require small models or long term implantation

▲ PRISM Key Features

Long Implant Life

- 10 years (fully functional implanted)

Ultra Low Implant Weight

- 0.26 gram

Miniature Implant Size

- 0.14 CC volume
- 13 mm long and 3.7 mm in diameter

High Fidelity Data

- 1 mm Hg Accuracy
- 0.2 mm Hg Resolution
- 250 Samples/Second
- Temperature Measure and Compensation

Long Term Stability

- Drift < 2 mmHg/Year

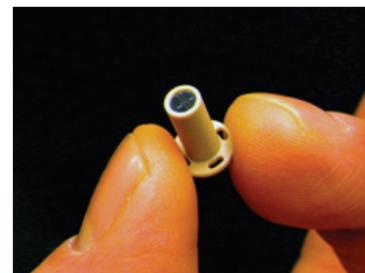
Biocompatible and Low Thrombogenic

- Blood
- Cerebrospinal Fluid (CSF)

Intelligent Wireless RF Power

- Dynamically radiates with minimum power
- No RF power over exposure or temperature rise
- Telecommunication of more than 6"

Compatible with a variety of procedures and devices, including ultrasound, X-ray, MRI, defibrillators, pacemakers, ICD, etc.

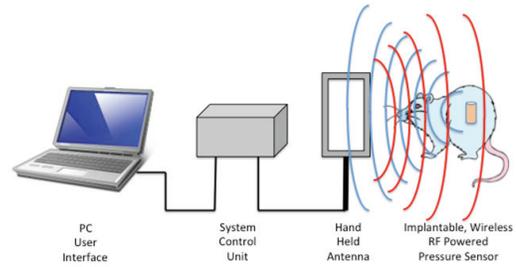


PRISM TELEMETRY

▲ PRISM Telemetry Applications

PRISM enabled solutions allow scientists and researchers to more efficiently meet their research goals. This pressure monitoring solution can be used in applications such as:

- Acquire realtime and continuous wireless physiological parameters in species ranging from mice to primates.
- Monitor physiological parameters for cardiac pressures (such as Left Atria (LA), Right Atria (RA), Left Ventricular (LV), Right Ventricular (RV), and Pulmonary Arterial (PA)), intracranial pressure, bladder pressure, kidney pressure, ocular pressure as well as tumor interstitial pressure in cancer tissues.
- Acquire physiological parameters for multiple subjects in one cage as well as multiple organs in one subject.



▲ Functionality of WIT Components

Implantable Wireless RF Powered Pressure Sensor

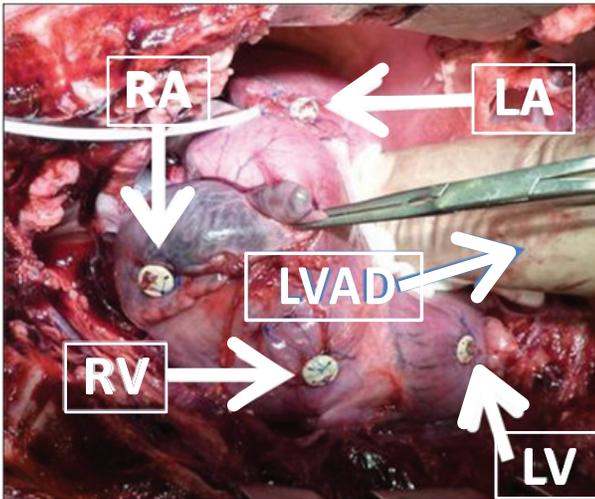
- Transmits measured parameters, ID, and internal self-diagnosis signals.

Hand Held Antenna

- Sends RF signal to power the implant
- Receives the pressure signal from the Implant

System Control Unit

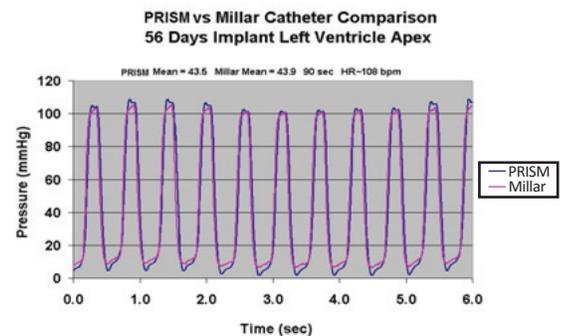
- Provides RF power signal to and receives RF pressure signal from the Antenna
- Interfaces to various reference sensors
- Converts the sensor signals into digital values
- Sends the sensor data with a time stamp to the Host PC
- Receives commands and data from the Host PC



PRISM implants in 4 heart chambers (RA, RV, LA, LV) of one subject working in the presence of a functioning LVAD (Left Ventricle Assist Device).

▲ Comparison of PRISM Implant vs. References

Extensive testing has been performed comparing the pressure measurement results of the WIT system to traditional Lumen competitive technologies. The following chart illustrates the smooth performance of the WIT system for fast wave pressure sensing



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▲ WIT System Operation

The PRISM WIT system is simple and easy to use. After the implant is placed in the organ, the system operation is straight forward. Bio-pressure measured by the implant is interrogated using a handheld antenna with RF telemetry. The WIT operation scheme is illustrated in the next diagram.

The WIT system functionality is divided into the following categories:

- Wireless powering of the implant
- Wireless data capturing from the implant
- Writing the implant data into Host PC
- Continuously adjust the transmitted RF power to the minimum required value in order to assure both the integrity of the data and to minimize the exposed RF radiation.
- Continuously monitor the health of the implant, including checking the unique implant ID to prevent any operator errors.

PRISM TELEMETRY

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