

# Product Development & Engineering Support



**VENTURE**

# Who is Venture Wireless Technologies

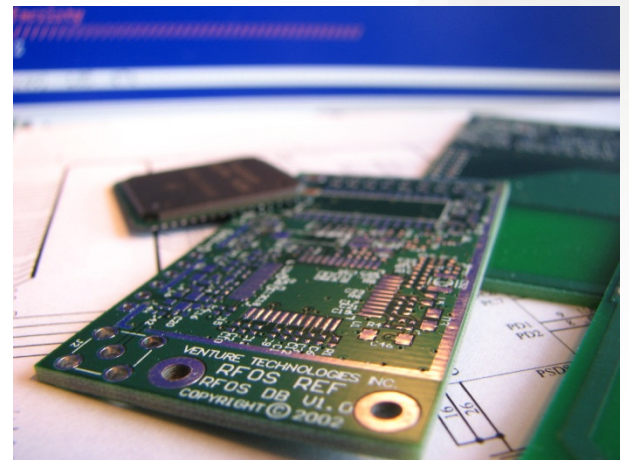
A product development company ...

With over 30 years of experience ...

Providing technology based solutions ...

Across a wide range of  
engineering disciplines ...

That meet your needs.



## About Us

- Core team: analog & digital electronics, RF, embedded software, low power design, mechanical.
- Extended team & network: industrial design, antenna design, modeling, FEA, energy harvesting, fluidics.

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# Venture Markets/Products

## Industrial / Scientific

Ozone detection pH and other electrochemical instruments  
IR temperature measurement  
H<sub>2</sub> detector  
Tank farm wireless level sensors  
LED lighting power supply & wireless controllers

## Medical Devices

Infusion pump  
Defibrillator  
Glucose meter  
Laser skin treatment system  
Wireless hospital hygiene monitor

## Life Sciences

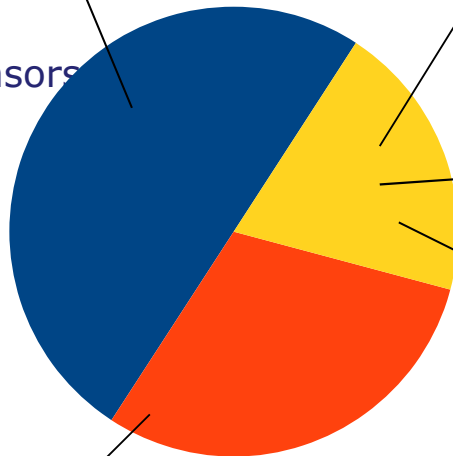
Automated Western Blot test  
Precision incubator  
Electronic pipette

## Government / Military

Pressure controller for military aircraft  
Tank warrior communications  
Robot battery system  
Intelligent vehicle scanner

## Consumer

Wireless dog leash  
Wireless toy applications  
Remote audio for Lexus/Toyota DVD player  
Audio FM transmitter  
Wireless HVAC controllers



iRobot PackBot

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## Core Expertise

System Level Design & Architecture

Analog and Digital Hardware Engineering

Software Engineering and Architecture

Radio and RF systems

Sensing, Optical and Electro-Mechanical Devices

Portable Battery Operated Products

Mechanical and Industrial Design

Fluid Handling

Automation and Robotic System design

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# Development Model

## **Small focused team of senior technical experts**

- Organize & custom fit the team to optimize the development effort.
- Full-Time Program / Project Management

## **Utilize the extended team of 50+ technical experts and scientists as required**

- Leverage the fact that the team has worked together over an extended period of time



# What can Venture do for you

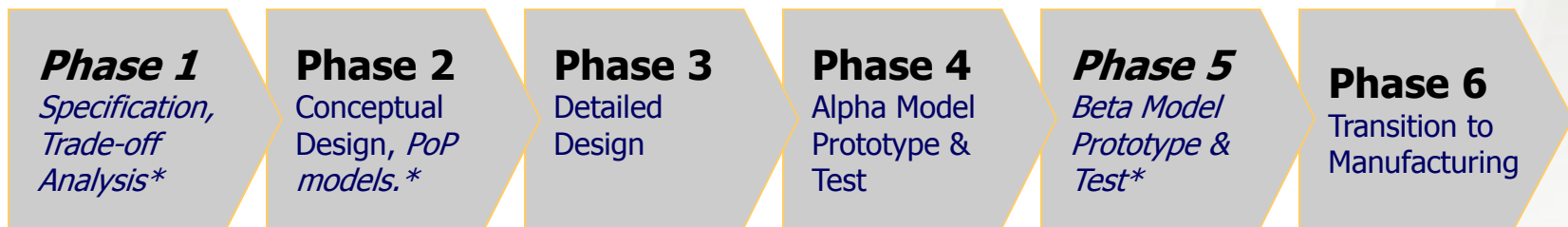


- ✓ Add technical bandwidth to your primary skills.
- ✓ Augment your existing capabilities with complementary skills.
- ✓ Add resources without increasing headcount.
- ✓ Avoid expense of hiring specialized skills.
- ✓ Eliminate risk of keeping staff fully utilized.
- ✓ Build an ad hoc multi-disciplinary project staff.
- ✓ Turn your concept into production-ready drawings.

# Project based solutions

Our ability to deliver consistent, reliable solutions is based on a time-proven project management methodology that manages risks, unknowns, timelines and budgets, and is driven by customer needs:

## Venture's Solution Methodology



\* as needed



# Project Management Expertise

Core team of experienced project managers.

- Manage resources and timeline.
- Communicate and coordinate between customer, suppliers and third parties.

Ability to scale project management

Small projects

Large Programs \$1 mil +

Large projects with design control

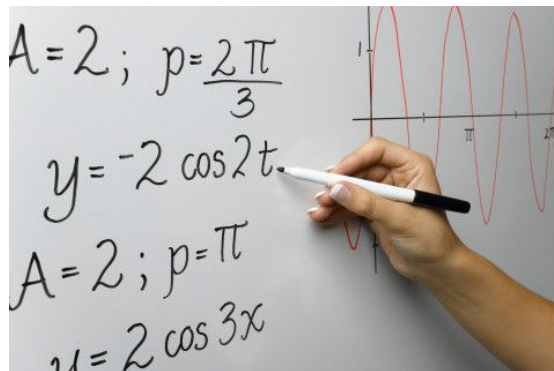
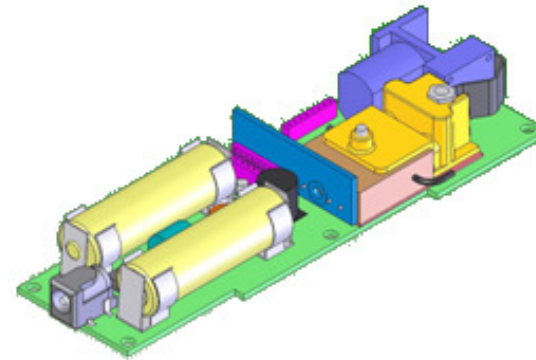
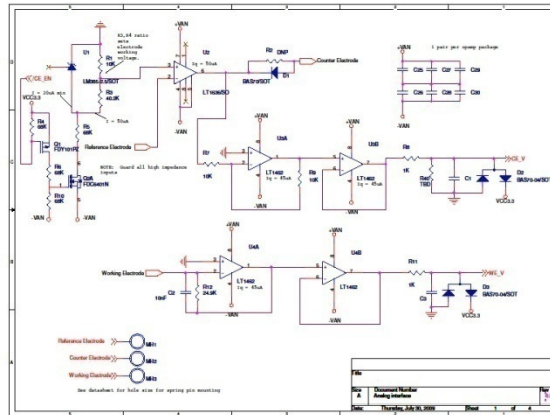
# Targeted solutions

**Venture can provide you with technical experts to support your engineering team.**



- Technical expertise when you need it.
- No overhead when you don't.
- A long term relationship with the same team of experts.

# Technology Commercialization



Venture is experienced in taking new technologies from an idea to a commercial product.



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# Case Study: NIR Micro-Spectroscopy

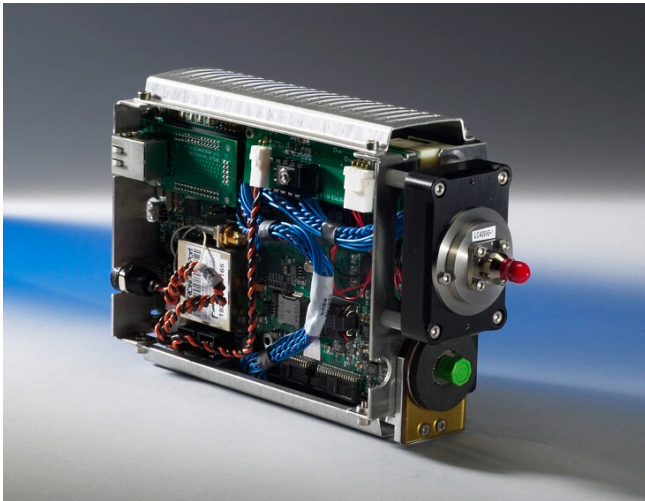
Analog Devices Blackfin

Axsun's IntegraSpec™

Friendly user interface

Quick accurate results

Long battery life



# Hand Sanitization Monitoring System

- Reduce communicable diseases spread by hand
- Verify compliance with hand sanitization policy
- Worldwide
- 3+ year battery lifetime
- 1000 handwash stations / installation



Handwash  
Station

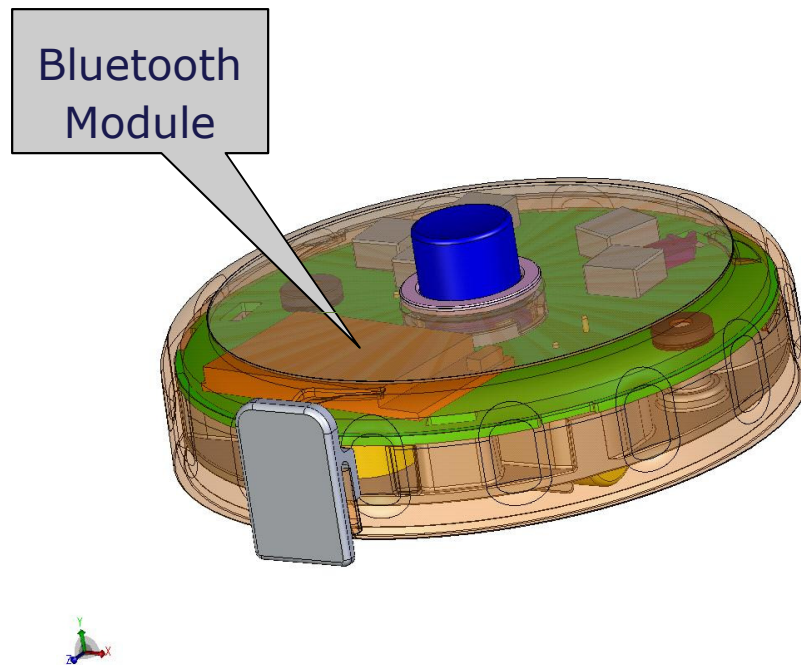


Remote  
Server

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# Case Study: Wearable Sensor



## Wearable Vital Signs sensor

Bluetooth communication to handheld monitor

### Design Challenges

Very low power bluetooth.

Low noise analog circuit.

High speed data acquisition.



# Case Study: Portable Blood Analysis



*Johnson & Johnson*

**Venture provided:**

**Mechanical Design**

**Optical System**

**Electrical Design**

**Software Design**

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# Case Study: Electrochemical Analyzers

## Foxboro Systems Electrochemical Analyzers

- Complete product family development
- Architect a Proof of Concept
- Aggressive Development Effort
- Updated & Expanded Product Family
- Cost Effective Project & Optimal Unit Cost



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# Case Study: Infrared Temperature Sensor

## Temperature measurement for foundries

Replaced analog with digital design.

Simplified calibration.

Noise rejection allowed unit to work in smoky environments, opening new markets.



# Walleye

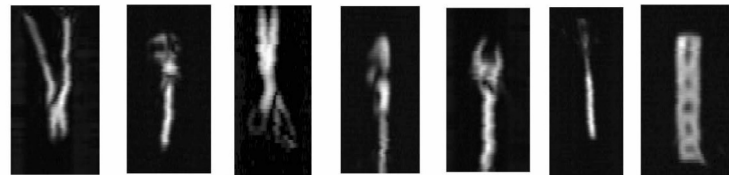
- A handheld microwave camera that lets you see through walls
- Walleye Technologies worked with Venture to develop an initial functional prototype
- TIME magazine puts invention on list of "Top 50 Inventions for 2009"



Visible



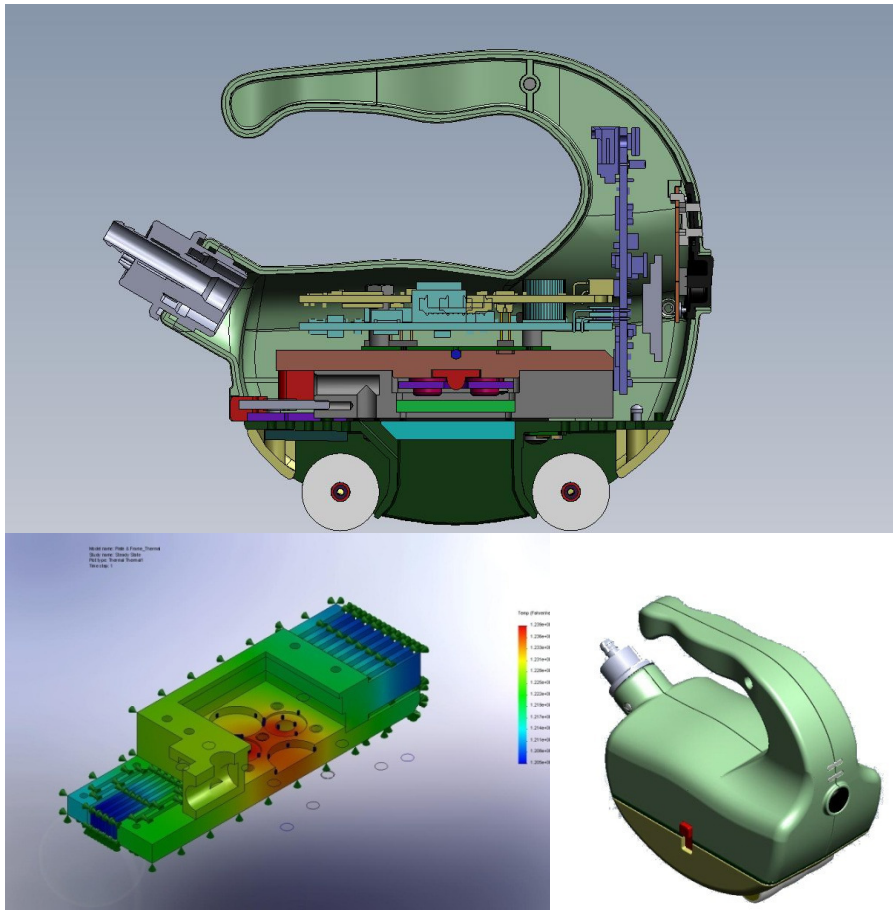
Microwave



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# Elémé Medical



## Multi-Watt Cosmetic Laser.

### Design Challenges

- Thermal management
- Laser power management
- Laser safety controls

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# Thermo- Fisher Pipetters

Thermo  
SCIENTIFIC

MATRIX



## 1. Micro Pipetter

### ▶ Venture provided:

- ▶ Mechanical Design
- ▶ Industrial Design
- ▶ Electrical Design
- ▶ Software Design

## 2. Matrix

### ▶ Venture provided:

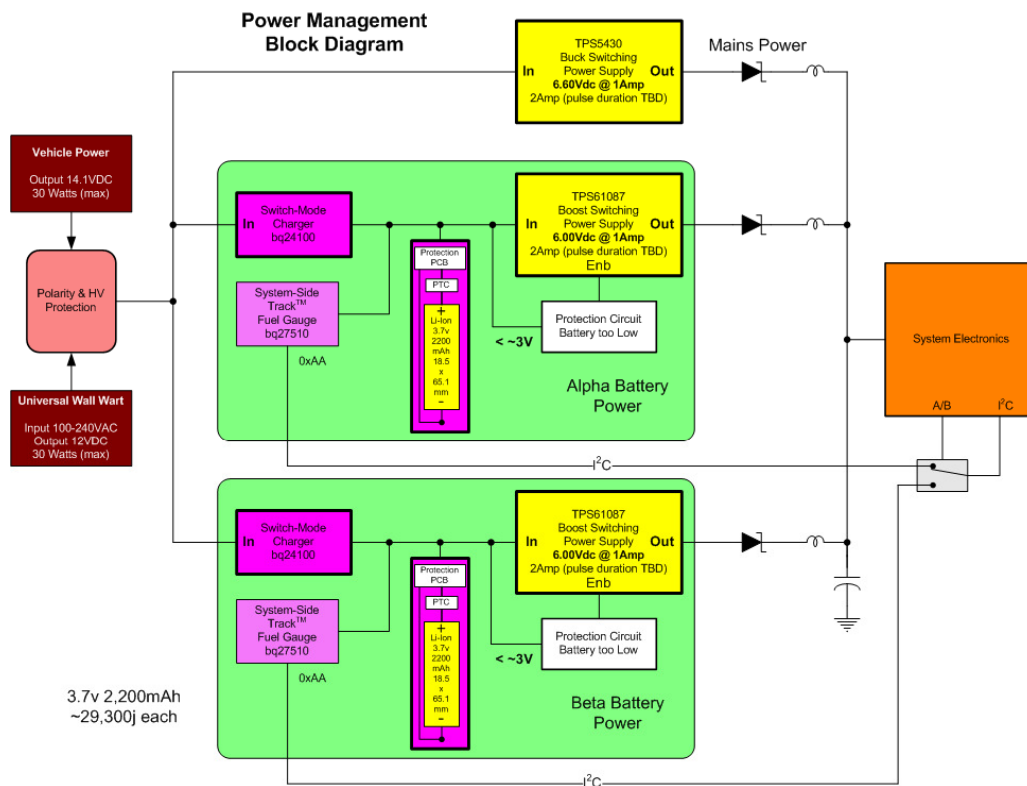
- ▶ Electrical Design
- ▶ Software Design
- ▶ Speech Recognition
- ▶ Manufacturing support



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# Case Study: Infusion Pump Power Supply



Infusion pump Power Supply.

Design Challenges

Multi-voltage input.

Redundant batteries.

High efficiency to maximize battery life.

# Venture's RFOS Features

- ▶ Up to 250K baud data rate
- ▶ Reliable communication
- ▶ Many years battery life
  - Energy harvesting options
- ▶ Data packet integrity
- ▶ Data bursts buffering
- ▶ Full duplex
- ▶ ms response times
- ▶ Range up to 1 mile
- ▶ Spread spectrum (FHSS or DSSS)
- ▶ 902-928 Mhz, 433 Mhz and 2.4 Ghz ISM bands
- ▶ Various network topologies
  - 2 units (cable replacement)
  - Star network
  - Store and Forward Mesh networks
  - Hybrid mesh-star
- ▶ FCC Part 15.247 compliant



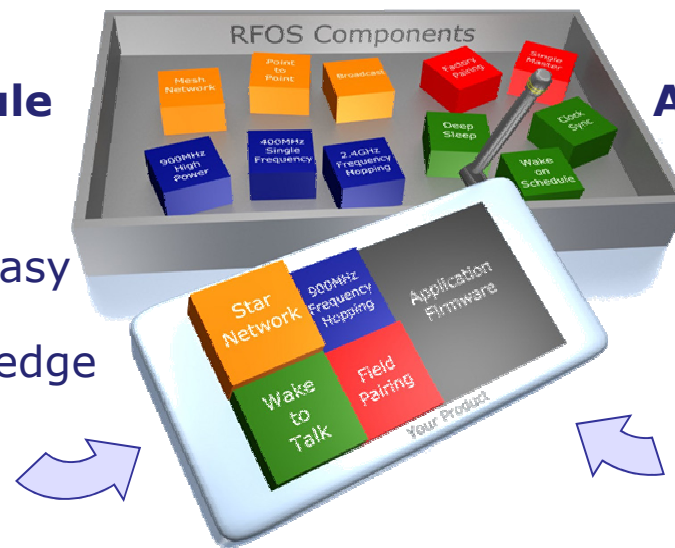
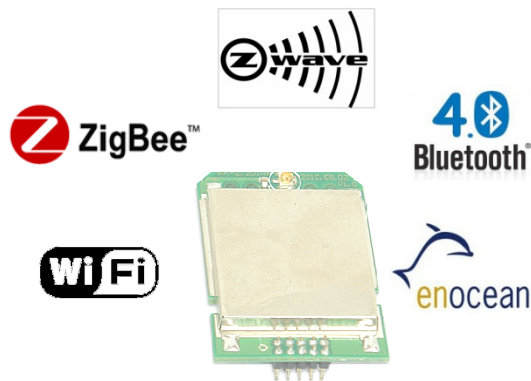
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# Why use RFOS?

## Module vs Custom? – RFOS: best of both worlds

### Advantages of Module

- Easy and less costly to develop
- FCC certification is easy (or already done)
- Requires little knowledge of RF system



### Advantages of Full Custom

- Lower BoM cost
- Optimize product for cost, size, shape
- Maximum performance – radio, power
- Fully integrated into product design – lower component count, less PCB real estate



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# Working with Venture

In addition to technical expertise, Venture can help you manage regulatory testing and certification.



# Contact Us!

Venture Wireless Technologies, Inc

14 Dudley Street

Reading, MA 01867

Phone: 978-314-7158

[csebor@venturetechnologies.com](mailto:csebor@venturetechnologies.com)

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