

# Tidal Engineering Corporation Engineering and Manufacturing Services

**Award Winning Embedded Test and Measurement  
and Data Acquisition Products for OEMs**  
**"Best in Test" 1999, 2001, 2005 and 2012**

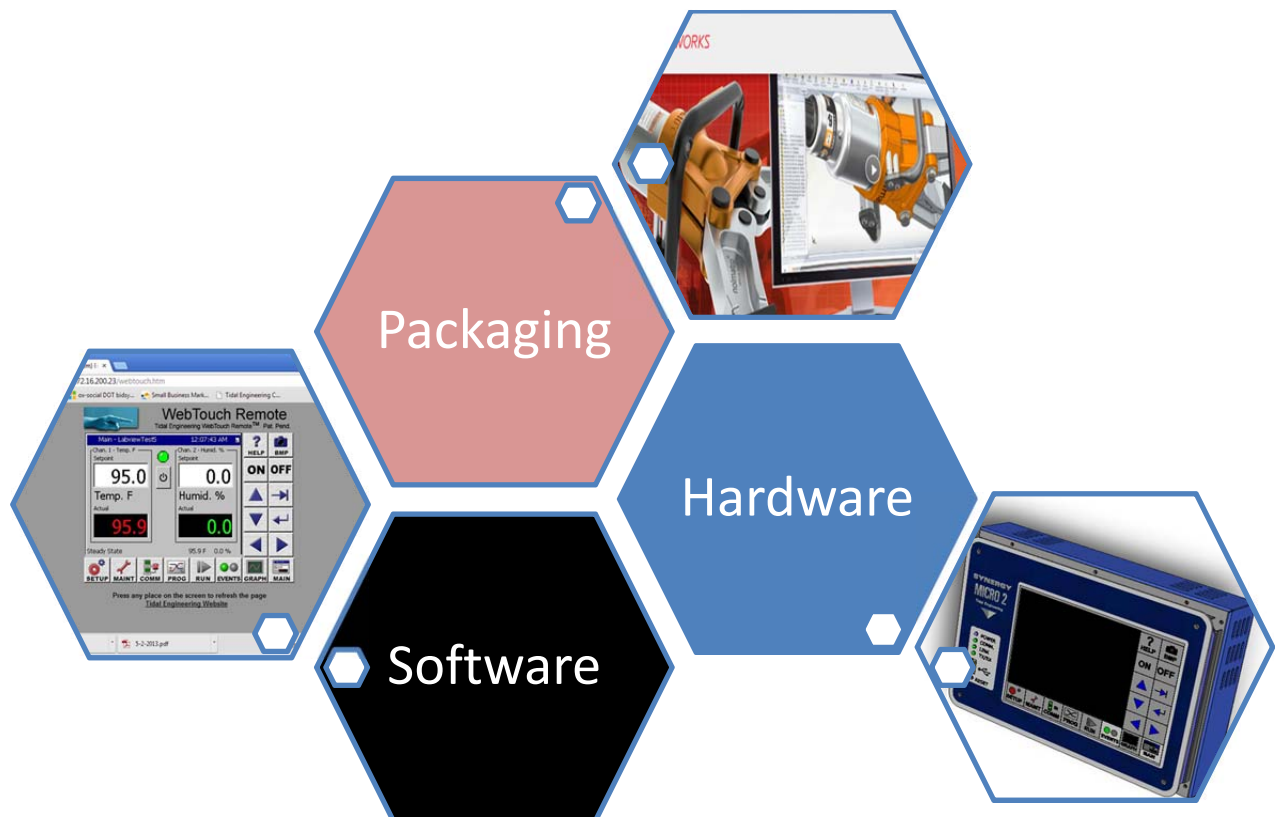


# Introduction

Tidal Engineering Corporation, known for its Synergy line of environmental test chamber controllers/loggers and software has been providing design and manufacturing services to Defense and Electronics companies since 1992.

Tidal Engineering is recognized for technical expertise in such areas as Embedded IEEE 488, and turnkey SCADA (Supervisory Control and Data Acquisition) systems and has been involved in significant programs over the years including the design and qualification of the Programmable DC Power Supply for the ISS (International Space Station) development program, F22 and JSF AC to DC ground power carts, embedded controllers for RF instruments and test equipment. Capabilities Include:

- Hardware and electronics design
- Software and Firmware design
- Industrial design and packaging
- Application software and GUI design
- Mechanical design and Thermal Analysis
- Pre-Production Design Validation and Regulatory Certification
- Networking Protocols; HTTP , FTP , SMTP (Simple Mail Transport Protocol)
- FPGA design
- Rapid Instrument Development

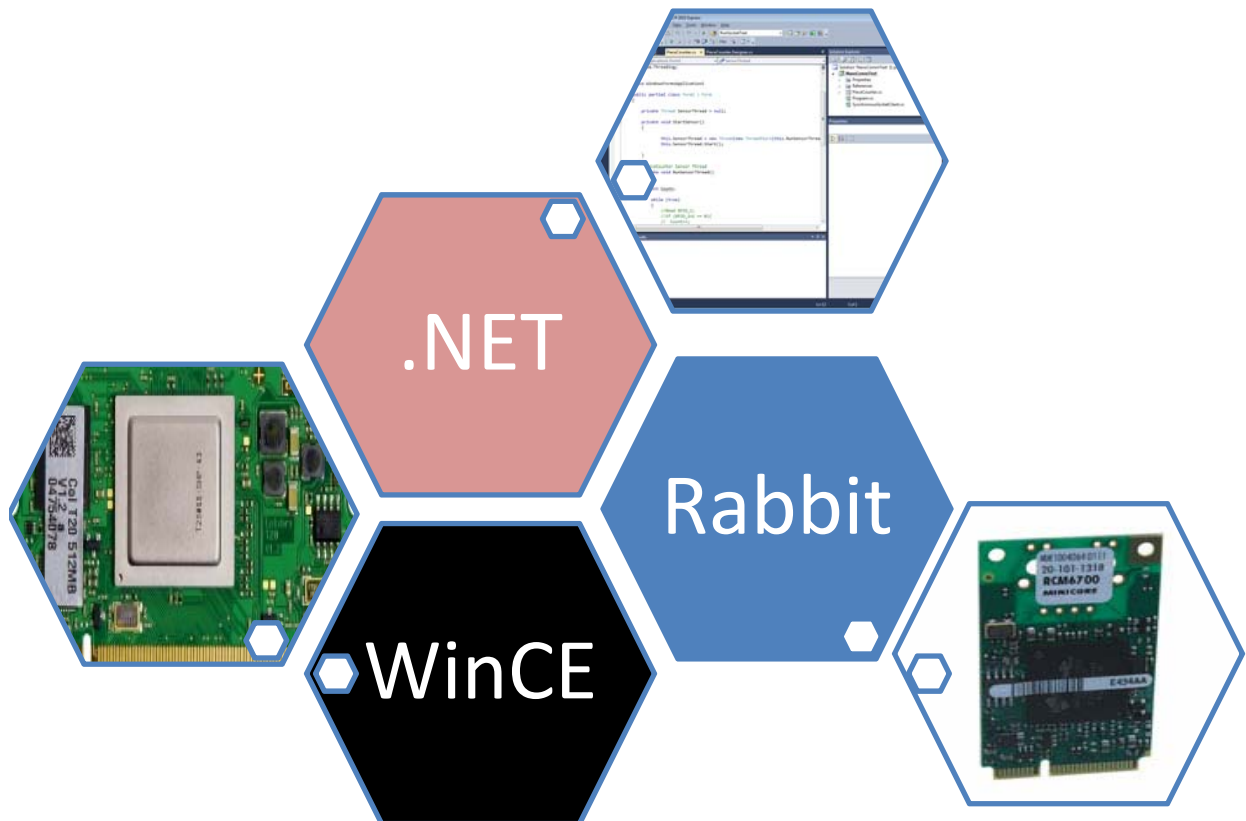


# Software/Firmware Design

Microprocessor/Microcontroller firmware and RTOS development is one of Tidal Engineering's cornerstone service offerings. Our breadth and depth of capabilities and tools enables an unbiased approach to device and OS selection. Firmware designs can be integrated with client hardware or along with hardware designs by Tidal Engineering.

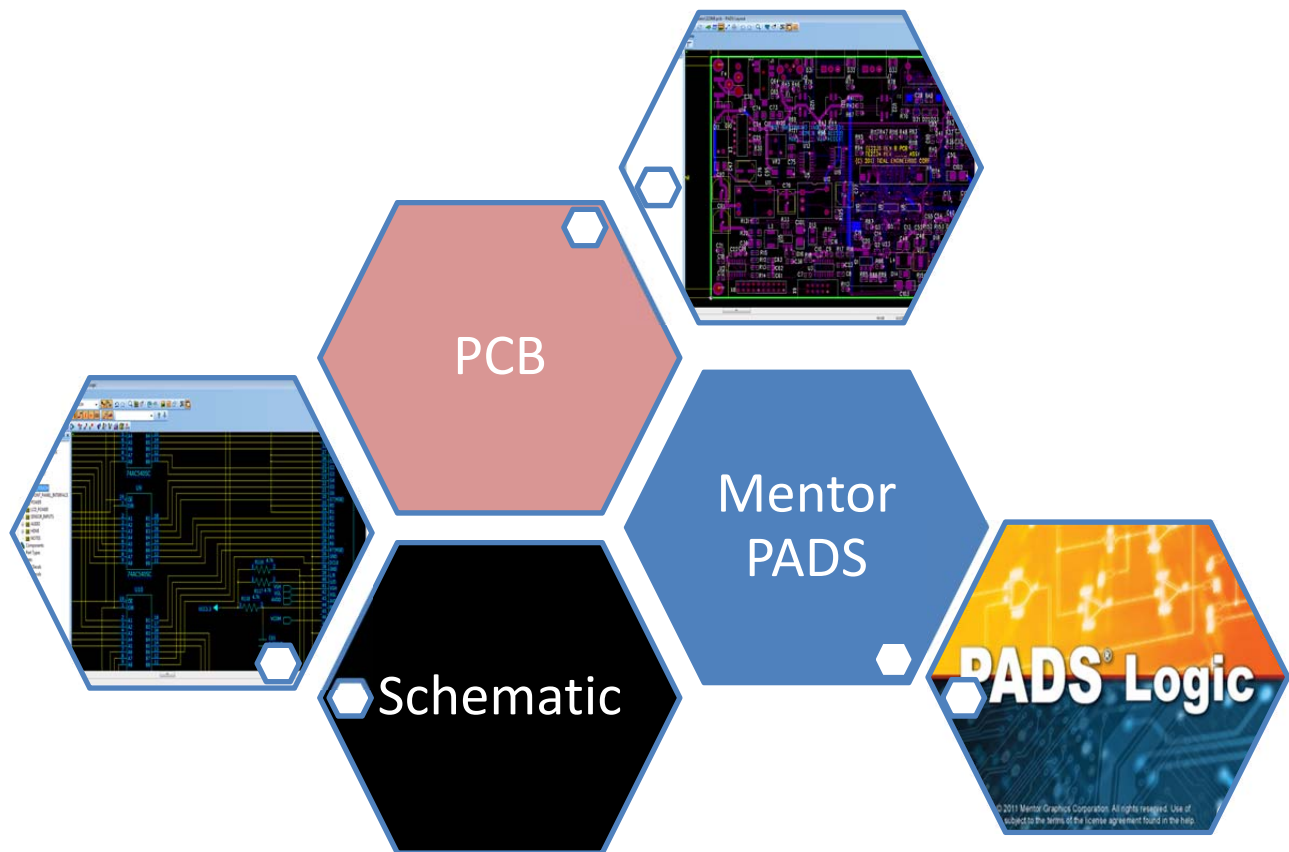
Technologies include:

- Marvell™ PXA, Microchip™ PIC, 8051, Rabbit™ and Colibri CPU Modules
- C/C++, C#, .NET, Assembly
- Digi™ (Rabbit Semiconductor™) Smart Cores™
- Windows CE™ Operating Systems and Applications, eVC++
- Think N Do™ Automation Software
- LabVIEW™



# Printed Circuit Board Design

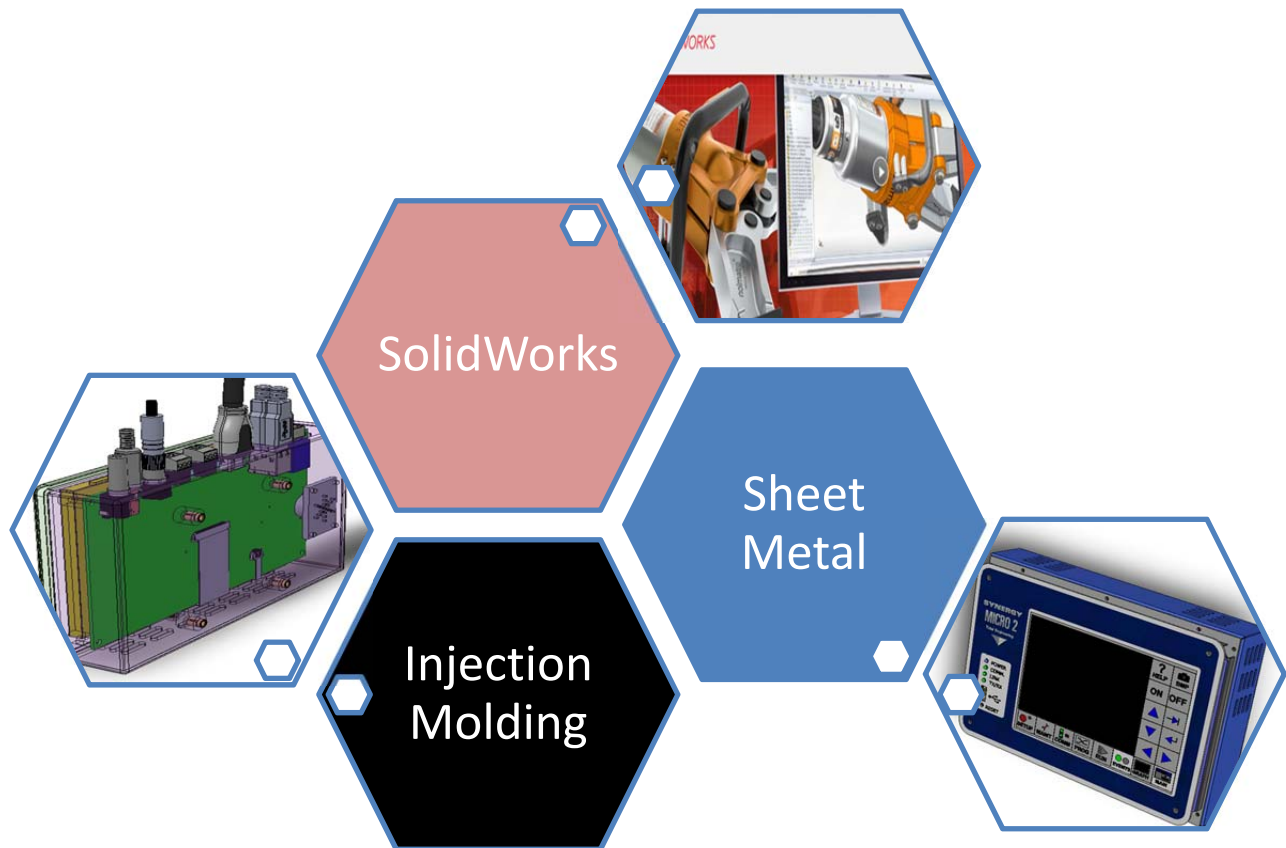
- Mixed-signal boards requiring noise/power isolation
- RoHS/WEEE compliant Lead (Pb)-Free designs
- EOL and cost-reduction redesigns
- Quick-turn/short-fuse projects
- DFM for high-yield, low-cost production



# Packaging Design

Tidal Engineering develops sophisticated enclosures and mechanical packaging with the powerful SolidWorks 3D CAD tool in both Sheet-Metal and Plastic.

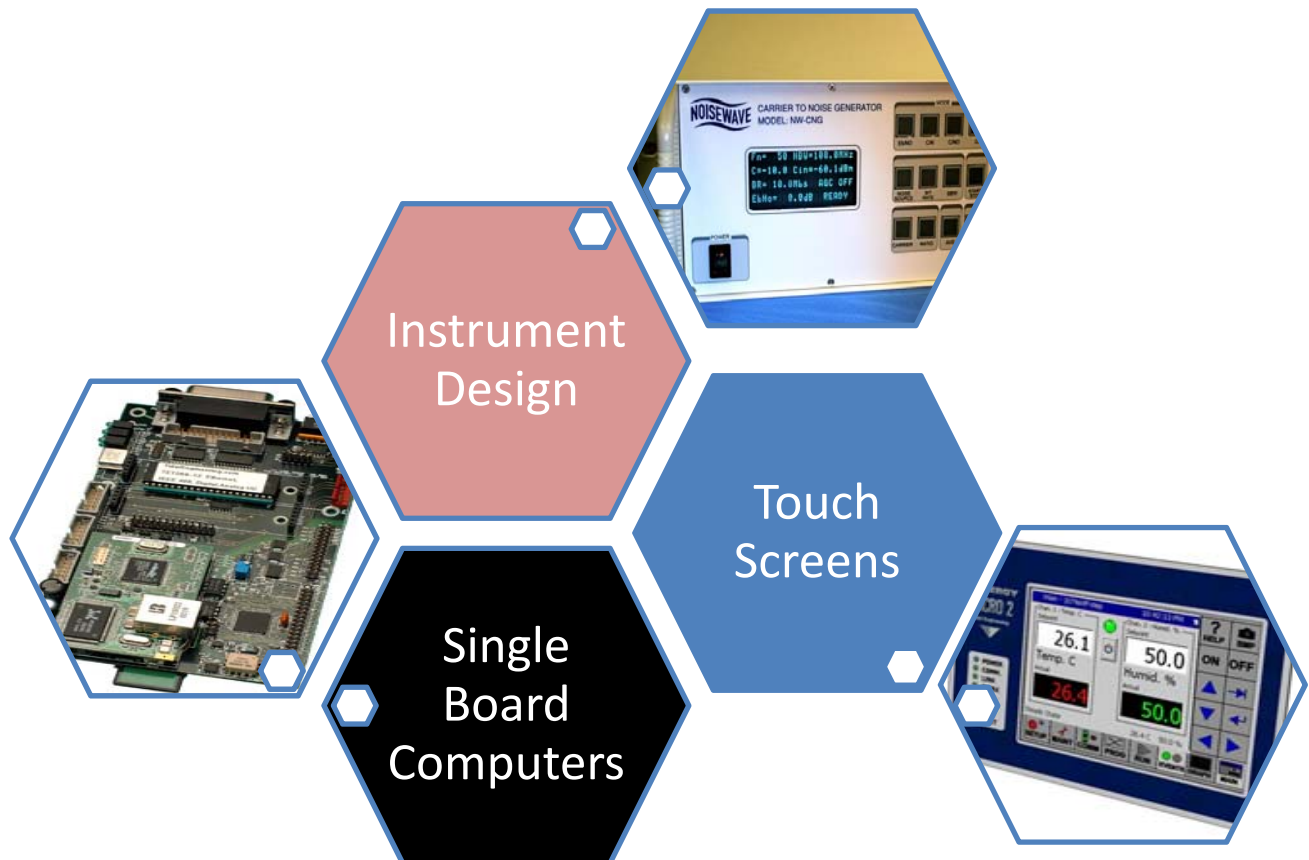
- Sheet metal Designs
- Injection Molding
- AutoCAD™
- SolidWorks™



# Test and Measurement Instruments

Tidal Engineering offers **RapID** Instrument Development capabilities using off-the-shelf Single Board Computers, Keypads, LCD Displays/Touchscreens, I/O building blocks, and Software tools and frameworks for cost effective small and medium volume applications.

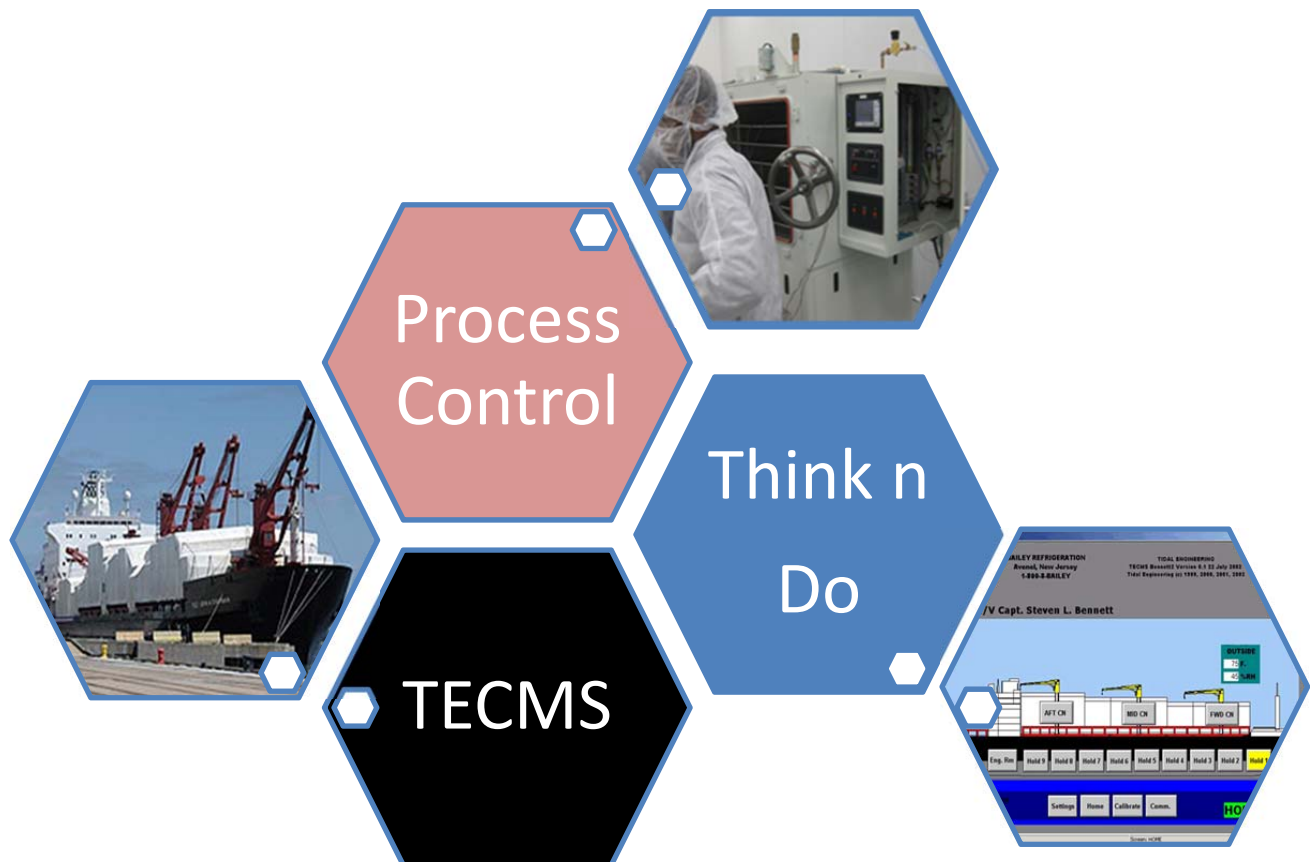
- SBC488E Single Board Computer based Rapid Instrument Development Platform
- GPIB/IEEE 488 Communications, RS-232, RS-485, Ethernet
- Keypad and Touch Screen Interfaces
- Signal Conditioning
- Networking
- Mixed-signal boards requiring noise/power isolation
- Temperature Sensing: Thermocouples, RTDs
- Analog Signal Conditioning
- Power Electronics
- Rabbit and Windows CE instrument software frameworks



# Control Systems Design

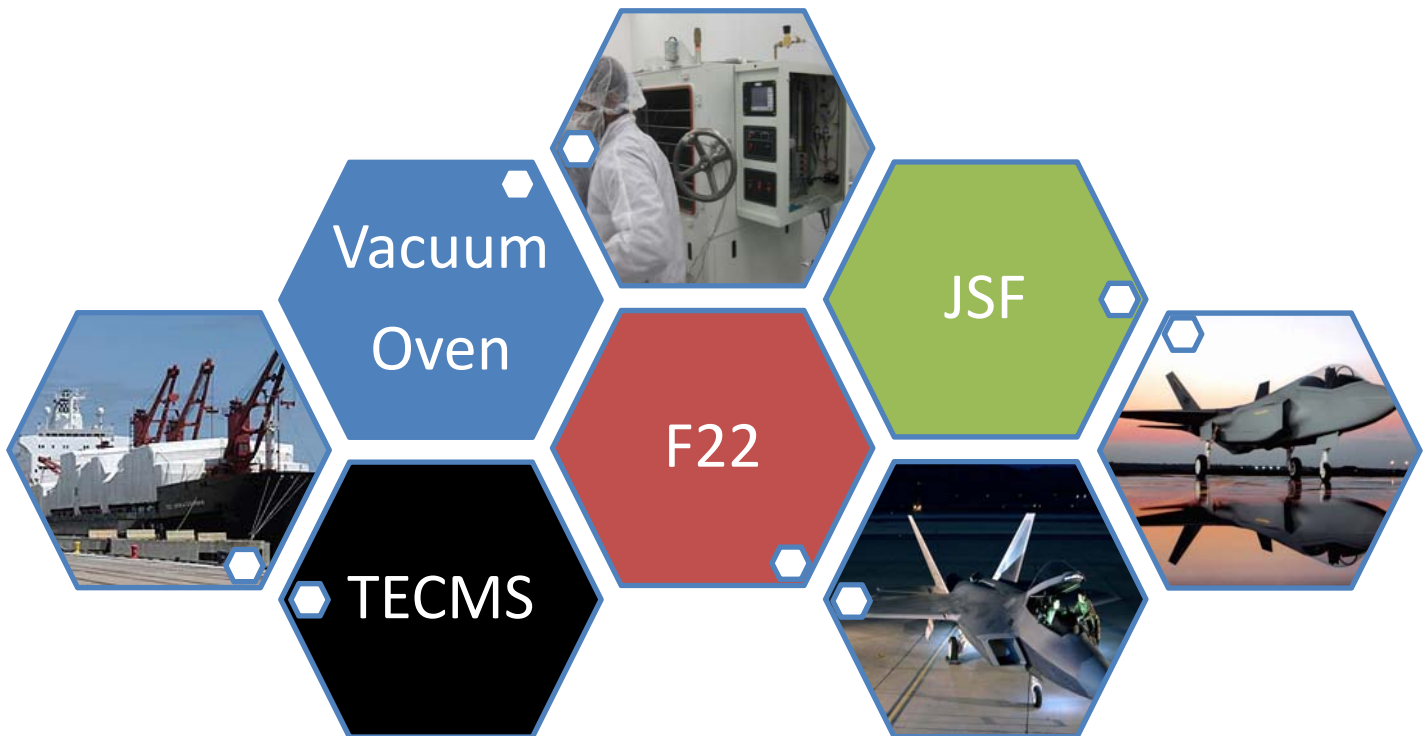
Tidal Engineering develops control, automation, and data acquisitions systems for shipboard and land based systems including Military Sea-lift Command (MSC) Pre-positioning ships and environmental test chamber and process oven control systems. Technologies include:

- PID Control Algorithms
- Signal Conditioning
- Mixed-signal boards requiring noise/power isolation
- Temperature Sensing: Thermocouples, RTDs
- Analog Signal Conditioning
- Power Electronics



# Project Highlights

- Fast (microsecond) FPGA Controlled RF Attenuator System
- RF Carrier/Noise Generator Instrument Controller
- RF Noise Instrument Controller
- 7" ARM Based Windows CE Touch Screen
- UV Hand Sanitizer Control System
- JSF Ground Power Converter and Controller
- Synergy Micro 2 Touch Screen Controller/ Logger
- Synergy Nano Touch Screen Controller/ Logger
- Synergy Quattro Touch Screen Controller/ Logger
- TCweb Web based Multi-Channel Thermocouple- Monitor/Logger
- Air-Launched Stinger Missile Caging System
- TECMS Container ship Temperature/Humidity Controller
- 60KW DC Power Supply for International Space Station Test Programs
- F22 External Power Converter 400 Hz to 270VDC, 70 KW





# Awards and Recognition

- **Test of Time 2012** Synergy Controller Environmental Test Chamber Controller Family  
Tidal Engineering's Synergy Controller family were finalists for the 2012 Test of Time Award! This prestigious award honors a product that continues to provide state-of-the-art performance at least five years after its introduction and to represent a significant advancement in the test, measurement and inspection field
- **Best in Test 2005** Synergy488 Environmental Chamber Communications Gateway  
Tidal's award winning gateway application hardware and firmware is engineered specifically for applications requiring the precise measurement and control of temperature and/or humidity on most popular environmental test controllers.
- **Best in Test 2001** VersaTenn V Environmental Chamber Controller  
Developed by Tidal Engineering and integrated into Tenney Environmental test chambers, the VersaTenn V (VTV) provides the power to run temperature and humidity cycling and altitude tests using the Familiar Windows<sup>(TM)</sup> interface.
- **Best in Test 1999** MT488RC Remote Control Mini Tester  
Infrared Remote control Mini-Tester. From trade show demonstrations and product presentations to just tooling around the shop, this device adds versatility and greater control to your test environment. Users include people involved in dangerous testing including high voltage (>20kv), explosives and high EMI environments.



# Tidal Engineering Contact

Headquartered in Randolph, NJ, Tidal Engineering Corporation has been designing and building award-winning embedded hardware and software for test and measurement and data acquisition applications since 1992. The company is recognized for technical expertise in such areas as Embedded IEEE 488 and turnkey SCADA (Supervisory Control and Data Acquisition) systems and provides rapid design development by utilizing existing component and software building blocks and systems.

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