

# **TJM ELECTRONIC ASSOCIATES**

## Custom automation, testing, and fixturing equipment



TJM Electronics, with locations in Arizona and Pennsylvania, specializes in contract manufacturing and custom automation, testing, and fixturing equipment. Our design team is a “complete package”, offering customer’s software design, hardware design, mechanical design, functional test system design and systems integration. With our broad range of expertise there is no job we can not do. From the simplest test fixture to the fully automated system, we can do it all. We have designed for various market segments such as Military, Telecommunications, Automotive and Semiconductor.

### Contact Information:

**TJM Electronics**  
**[www.tjmelectronics.com](http://www.tjmelectronics.com)**  
**(480) 446-3150**

# TJM Electronics offers the following services:

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- **AUTOMATED TESTING**

- RF Components and Systems
- Digital Components and Systems
- Mechanical Test and Measurement
- Test Data Logging and Analysis


- **AUTOMATED ASSEMBLY**

- Packaging Equipment
- Contact Insertion
- Sorting
- Pick and Place
- Fastener Placement and Torquing

- **MECHANICAL TOOLING**

- Machines
- Fixtures
- Gauges
- Custom Hand Tools

If what you require is not listed here, we can still help.  
TJM Electronics doesn't shy away from a challenge.



# These are just some of the technologies we can use to solve your manufacturing problems:

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## • SOFTWARE

- LabVIEW
- AGILENT VEE
- Visual Basic
- 3-D CAD
- MS OFFICE

## • MOTION CONTROL

- Brushless Servo
- Stepper Motors
- Pneumatics
- Linear Motors
- Air Over Hydraulic
- PLC (Programmable Logic Controllers)

## • SENSORS

- Thermocouples
- Strain Gauges
- Hall Effect
- IR
- Non-Contact Measurement

## • TEST EQUIPMENT

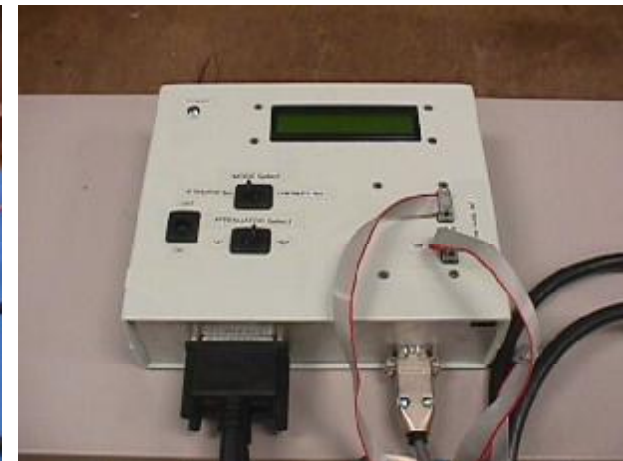
- Oscilloscopes
- Spectrum Analyzers
- Custom embedded controllers
- Multifunction Data Acquisition Systems
- PXI/VXI/SCXI bus-based solutions

# Small, portable, task-specific test equipment

Circuit breaker tray test fixture.  
Uses a microcontroller to test all the wiring for OPENS and SHORTS. Test data is displayed on a 2x20 vacuum fluorescent display (VFD). Tests two different models, which are user selectable. PCB was laid out to insure high quality and repeatability.

Attenuator and wiring test fixture.  
Uses a microcontroller to test wiring for OPENS and SHORTS. Test data is displayed on a 2x20 LCD. Unit also tests 2 attenuators on unit to verify operation. PCB was laid out to insure high quality and repeatability

Test fixture used to test stepper motor assemblies. Verified correct wiring as well as correct polarity of stepper coils. Measured distance traveled. System controlled by a microcontroller.

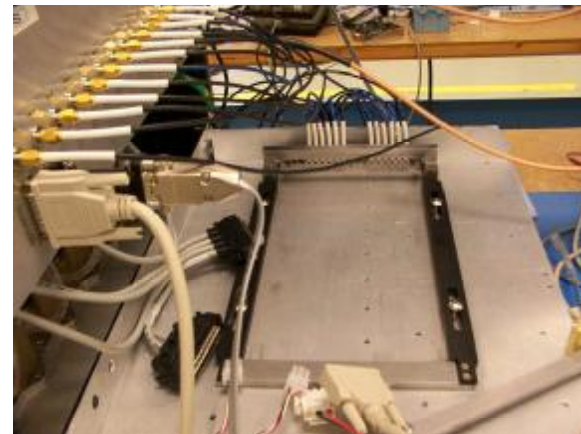


# Dedicated test workstations

Test fixture used to warm-up units for a 24 hour burn in period. Unit monitored DC and AC and reported if there was a problem (black out, brown out) at anytime during the 24 hour burn in period. Used microcontroller for system monitoring.

RF Switching matrix for testing an RF detector. Uses a microcontroller to communicate to a PC running AGILENT VEE. Test software controls a 48VDC power supply and signal generators via GPIB

Tray used for placing DUT on test fixture, slides DUT into place.

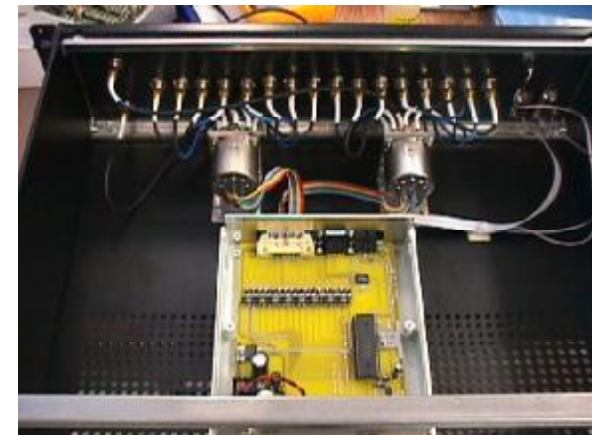


# Non-task specific, custom built test equipment

Multi band RF distribution system / power monitoring unit. Unit allows multiple band power amplifiers to be connected together without interfering with each other. Unit can switch up to 500W from DC to 1GHz. Unit uses a microcontroller to control state as well as monitor power.

RF switching matrix: 2 channels to 16 channels. DC to 2GHz @ 100W. Controlled via RS232 from test PC. Uses microcontroller to communicate with PC.

RF switching matrix final PCB design. PCB was laid out for repeatability and quality.



# Complete automation of complex, high precision assembly tasks

Automated semiconductor socket contact inserter. Uses Labview, stepper motors, brushless DC motors, pneumatics. Programmable, allows custom contact patterns via GUI interface. Modular fixturing allows support for a range of socket styles and sizes with minimal changeover time (~15 minutes).

Close up view of contact feeder, positioning jaw, and solder tail cutoff tool.

Rear view close-up of contact feeder, rotary loading tray.

