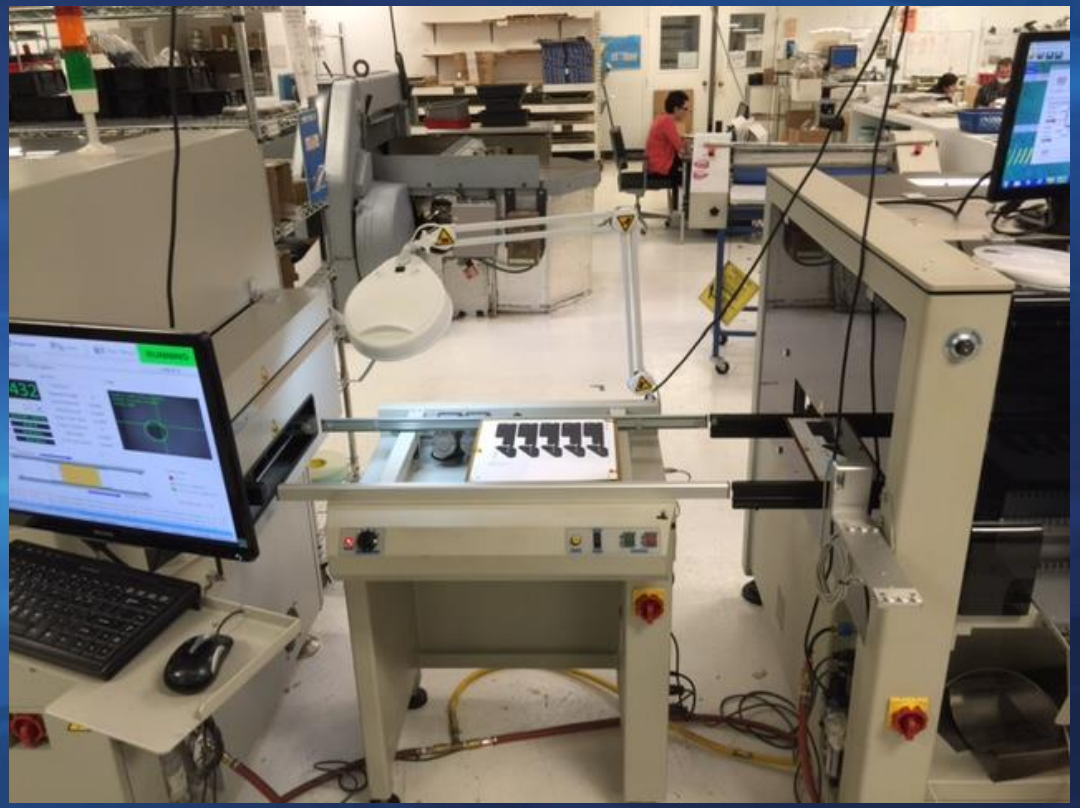
Flexible Circuits
as an Alternative to Traditional Printed Circuit Boards
for MEMS and Nano Devices

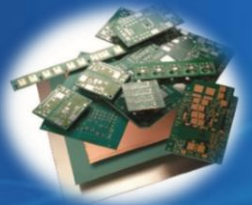
Aaron Smith

spectrasymbol

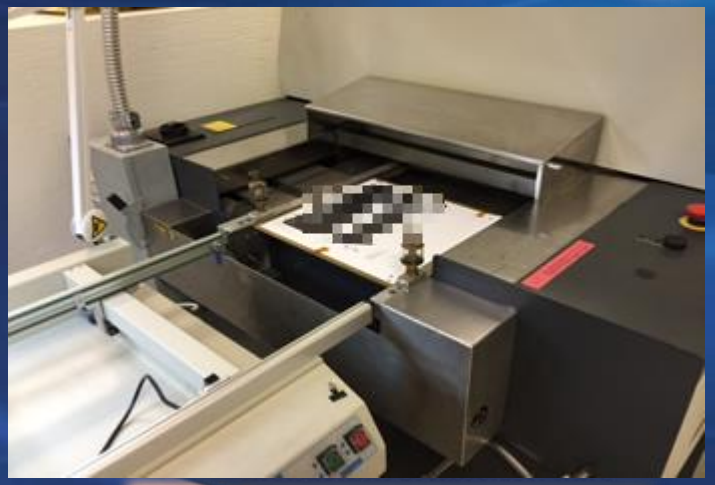


Unique Capability: Flexible Circuits in a Rigid World

http://www.electronics-cooling.com/



- Printed Circuit Boards (PCB) have been a staple of the electronics industry for decades.



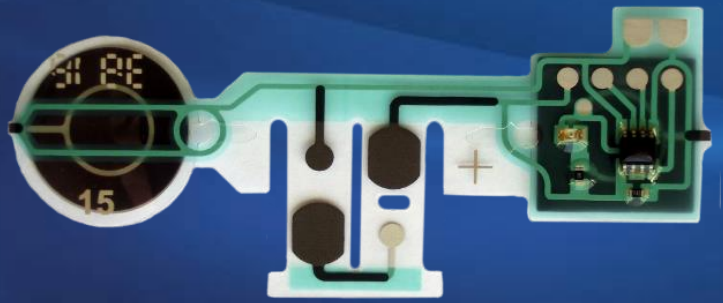
- Spectra Symbol introduces flexibility with SMT on PET for MEMS and Nano devices:
  - Medical Patches
  - Wearable Devices
  - Sensors
  - Disposable Devices
  - Small Spaces / Tight Turns
  - Bluetooth Integration

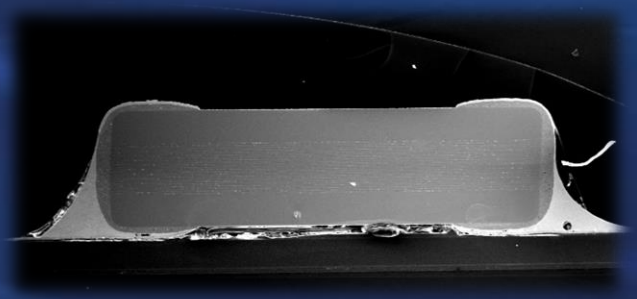
Flexible Circuitry Connecting Your Micro and Nano Technology with the World

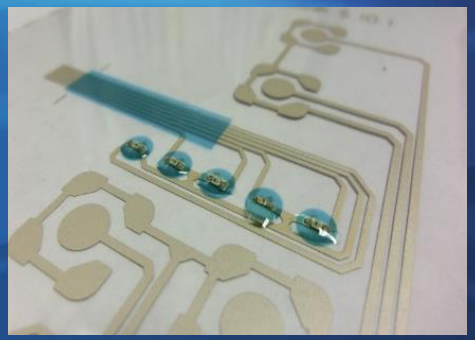
NASA, AS17-148-22727

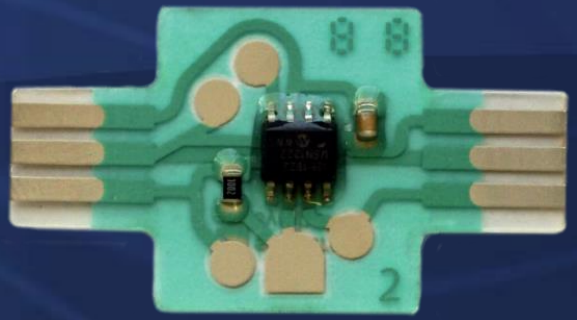
- The world is not flat - Now your circuitry isn't either.

Add batteries, resistors, capacitors, LEDs, or other microchips needed for electrical function.









Audience Participation

- Have you seen Surface Mount Technology on Polyester from other suppliers?
- In what type of applications was it used?
- What is needed to incorporate your Micro and Nano Technology with flexible circuits?
- Who has the smallest/best batteries?
- Which Utah companies could benefit from this technology?

Materials & Processes

Thin Film Polyester

- 3 mil - 5 mil for SMT
- 37 years experience
- Kapton substrate
- FR4 substrate

Components

- Epoxy or Solder
- Encapsulant
- Size: 0402
- Battery, Cap, Diode, LED, etc.

Inks

- Silver
- Carbon
- Dielectric Films
- Silver / Silver Chloride Pads
- Solder Paste
- Graphic Printing

Other

- Radius of Curvature – Pencil Diameter
- Lot Code Tracking – To Meet Requirements for Medical, Automotive, etc.
- Serialized Characterization Data as Needed

Manufacturing Capability

Expertise: 37 Years of Manufacturing History

- Products: SMT on PET, Potentiometers, Membrane Switch, Liquid Level Sensors
- SMT speeds up to a board every 20 seconds
- Contact Information:
  - 3101 West 2100 South
  - Phone: 801-972-6995
  - Christine Drage