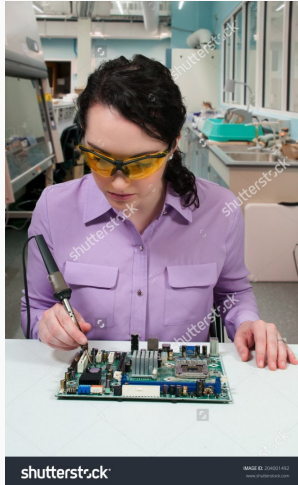


E4E Soldering Workshop

December 4, 2023

Engineers for Exploration, UC San Diego

Obligatory Meme



ENGINEERS
FOR
EXPLORATION

Applicable Standards

- IPC J-STD-001
- NASA Workmanship Standards
- E4E Soldering Standards (Not yet published)

What is soldering?

Review of Thermodynamics

Fundamentals of Soldering

1. Clean
2. Tin
3. Heat
4. Flow
5. Repeat

Types of Soldering

- Wire to Wire (low and high power)
- Wire/Through Hole to Connector/Board (low power)
- Wire to Board (high power)
- Surface Mount (exposed lead, no lead)
- Wire to Device (low power)
- Rework/Desoldering Through Hole
- Rework/Desoldering Surface Mount

Initial Training Scope

- Wire to Wire (low power)
- Wire/Through Hole to Connector/Board (low power)
- Wire to Device (leaded coarse pitch)

Exercise #1

Build a 22 AWG wire ring 1" in diameter

Exercise #2

Solder D1, D2 on EK1950

Exercise #3

Solder leads to JP1 on EK1950