

**Breadboard Demo** Semester: \_\_\_\_\_

Team No. 67 Reviewer: \_\_\_\_\_

Demo should include a circuit with a microprocessor on a devboard or PCB that is connected to a project subsystem. The microprocessor should have a downloaded program in its memory. The program should control the subsystem or receive data from it. The data should be displayed on a pc or other display. The project team should be able to describe the circuit and justify design choices. They should be able to explain how the circuit fits in to the project.

Full Credit: The circuit works and is of adequate complexity. A good explanation its features is given by team.

Point Reductions

|  |     |
|--|-----|
| Circuit fails to work:                   | -2  |
| Circuit lacks complexity:                | -2  |
| Circuit seems inappropriate for project: | -2  |
| Explanation lacks clarity:               | -2  |
| No circuit                               | -10 |
| No show                                  | -20 |

Breadboard Demo Grade: 20

# Breadboard Demo Checklist

Project No.

## Microprocessor

|           |   |
|-----------|---|
| ATMega    |   |
| STM32     |   |
| ESP32     | ✓ |
| Other     |   |
| Dev board |   |
| PCB       |   |

## Comm. Protocol

|      |   |
|------|---|
| I2C  |   |
| SPI  |   |
| UART | ✓ |

## Wireless

|             |  |
|-------------|--|
| 433/900 MHz |  |
| Bluetooth   |  |
| Wi-fi       |  |

## Power Subsystem

### Source

|                |  |
|----------------|--|
| Lab PS         |  |
| Battery        |  |
| Comm. DC PS    |  |
| 110 VAC/Variac |  |

## Regulator

|           |   |
|-----------|---|
| Linear    |   |
| Switching |   |
| Voltages  | ✓ |
| Currents  |   |

ULN 203

## Subsystem 1

## Subsystem 2

| Function              | Subsystem 1 | Subsystem 2 |
|-----------------------|-------------|-------------|
| Motor                 | ✓           |             |
| Actuator              |             | ✓           |
| Light or sound source |             |             |
| LED                   |             |             |
| Speaker               |             |             |
| Sensor                |             |             |
| IR                    |             |             |
| lidar                 |             |             |
| radar                 |             |             |
| Ultrasonic            |             |             |
| Comments              |             |             |