

```
/// Code -- 2nd Arduino -- controls the light in the turntable 'shack' and the pulsing light when the turntable is moving.
```

```
// Define connections :
```

```
const int Pin2 = 2; // Pin to light turntable warning LED.  
const int Pin3 = 3; // Pin to light Shack LED.  
const int Pin4 = 4; // Input from hand controller to toggle shack light on/off (White)  
const int Pin5 = 5; // Input form Pin 7 of other Arduino. Pulse Light Signal for warning turntable light.  
const int Pin8 = 8; // Read forward Polarity signal from hand controller. (Green)  
const int Pin9 = 9; // Read reverse polarity signal from hand controller. (Orange)  
const int Pin10 = 10; //Pin to turn master relay on/off (Pin10 & Pin 11 should be in same state)  
const int Pin11 = 11; //Pin to turn master relay on/off (Pin10 & Pin 11 should be in same state)  
const int Pin12 = 12; //Pin to polarity relay to change track polarity (Pin12 & Pin 14 should be in same state)  
const int Pin13 = 13; //Pin to polarity relay to change track polarity (Pin12 & Pin 14 should be in same state)
```

```
// variables will change:
```

```
int stateButton; // Reads the bottom left hand controller button to see if shack light is on or off.  
int previous = LOW; // Used in the code to turn shack light on/off.  
long time = 0; // Used in the code to turn shack light on/off.  
long debounce = 200; // Used in the code to turn shack light on/off.  
int stateLED = LOW; // Used in the code to turn shack light on/off.  
int FwdButton = 0; // Reads the polarity toggle switch on the hand controller button to see if table track polarity is 'forward'.  
int RevButton = 0; // Reads the polarity toggle switch on the hand controller button to see if table track polarity is 'reversed'.  
int Pulse1 = 0; // Used in the code to pulse the flashing warning light on the turntable.  
int steadyLight = 0; // Used in the code to pulse the flashing warning light on the turntable and code to turn shack light on/off.  
int State = 0; // Use to see if the master relay needs to be used or not.
```

```
void setup() {
```

```
  Serial.begin(9600);  
  pinMode(Pin2, OUTPUT); // Pin to light turntable warning LED.  
  pinMode(Pin3, OUTPUT); // Pin to light Shack LED.  
  pinMode(Pin4, INPUT); // Input from hand controller to toggle shack light on/off  
  pinMode(Pin5, INPUT); // Input form Pin7 of other Arduino. Pulse Light Signal for warning turntable light.  
  pinMode(Pin8, OUTPUT); // Read forward polarity signal from hand controller.  
  pinMode(Pin9, OUTPUT); // Read reverse polarity signal from hand controller.  
  pinMode(Pin10, OUTPUT); //Pin to turn master relay on/off (Pin10 & Pin 11 should be in same state)  
  pinMode(Pin11, OUTPUT); //Pin to turn master relay on/off (Pin10 & Pin 11 should be in same state)  
  pinMode(Pin12, OUTPUT); //Pin to polarity relay to change track polarity (Pin12 & Pin 13 should be in same state)  
  pinMode(Pin13, OUTPUT); //Pin to polarity relay to change track polarity (Pin12 & Pin 13 should be in same state)
```

```
  FwdButton = LOW;  
  RevButton = LOW;  
  steadyLight = 0;  
  State = 0;  
}
```

```
void loop() {
```

```
  /// My Code to change the Polarity of the turntable track.
```

```

FwdButton = digitalRead(Pin8); // Read forward Polarity pin8
RevButton = digitalRead(Pin9); // Read Reverse Polarity pin9

if (FwdButton == HIGH || RevButton == HIGH) { // Check to see if turntable track should be turned on.

if (State == 0) { // If this is the first time through cycle
digitalWrite (Pin10, HIGH); // Turn Master Relay off (turns power to second relay off)
digitalWrite (Pin11, HIGH); // Turn Master Relay off (turns power to second relay off)
delay (200);
}
if (RevButton == HIGH) { // If High reverse polarity to turntable track
digitalWrite (Pin12, LOW);
digitalWrite (Pin13, LOW);

digitalWrite (Pin10,LOW);
digitalWrite (Pin11, LOW);
}
else {
digitalWrite (Pin12, HIGH); // Set turntable track to forward polarity.
digitalWrite (Pin13, HIGH); // Set turntable track to forward polarity.
}
digitalWrite (Pin10, LOW);
digitalWrite (Pin11, LOW);
State = 1; // Set State so Master relay doesn't come back on in this cycle.
}

if (FwdButton == LOW && RevButton == LOW) {
digitalWrite (Pin10, HIGH);
digitalWrite (Pin11, HIGH);
State = 0; // Reset 'State' so master relay comes on next cycle.
}

// Code is mine and pulses the 2nd LED if the turntable is turning.

Pulse1 = digitalRead (Pin5);
if (Pulse1 == HIGH) // Turn on Flashing LED
{
digitalWrite (Pin3,LOW);
digitalWrite (Pin2,HIGH);
delay(400);
digitalWrite (Pin2,LOW);
delay (200);
steadyLight = 1;
}
else {
digitalWrite (Pin2,LOW);
digitalWrite (Pin3,LOW);
steadyLight = 0;
}

```

```
}
```

```
/// Code below here is from internet https://www.electroschematics.com/turn-on-led-button-arduino/ -- Thanks to P. Marian
```

```
/// Code turns the 1st LED on or off that is in the 'shack' on the turntable if it isn't turning. While turning this light goes off and the 2nd LED pulses on/off.
```

```
if (steadyLight == 0) {  
  stateButton = digitalRead(Pin4); //Reads the bottom left hand controller button to see if shack light is on or off.  
  if(stateButton == HIGH && previous == LOW && millis() - time > debounce) {  
    if(stateLED == HIGH){  
      stateLED = LOW;  
    } else {  
      stateLED = HIGH;  
    }  
    time = millis();  
  }  
  digitalWrite(Pin3, stateLED);  
  previous == stateButton;  
}  
else {delay(10);}  
}
```