

Links and info related to creating PWM and other ways to control LED colors.

Bit Angle Modulation (BAM) vs. PWM:

- <http://forum.sparkfun.com/viewtopic.php?f=6&t=3210&start=15>

Mirror Imaged Bit Angle Modulation (MIBAM):

- <http://www.picbasic.co.uk/forum/showthread.php?t=10564>

Muita pwm algoritmejä:

<http://www.google.com/url?sa=t&source=web&cd=1&ved=0CB0QFjAA&url=http%3A%2F%2Fwww.mosaic-industries.com%2FResources%2Fpdf%2Fmi-an-056optimalpwmalgorithm.pdf&rct=j&q=better%20pwm%20algorithm&ei=uL5rTszbE8XEsWbtzc3JBA&usg=AFQjCNG70qF9QTR0UJtZKhxj4BQcUUkiAg&cad=rja>

Driver IC:s & Ardu-code:

- PCA9635 <https://github.com/rambo/pca9635> (I2C)
 - using 3 to drive RGB <https://github.com/rambo/pca9635RGB> (a lot of optimizations to be done when I get that far [like writing all changes in single transactions as these ICs support mode where they change outputs synchronously on I2C STOP])
 - <http://fi.rsdelivers.com/product/nxp/pca9635pw-112/led-driver-23-55v-pca9635pw/0510897.aspx>

RGB Ledejä:

- <http://myworld.ebay.com/buynow360/?trksid=p4340.l2559>
 - \$25 / 100 diffuse common anode RGB LEDs, jne

//// suovulan temppi:

Gammaramp 2.5 [256] ja [1024]

<http://pastebin.com/C0EBBiYx>

Ledejä esim:

<http://www.ebay.com/itm/20-Pcs-High-Power-Warm-White-1W-Led-Lamp-Beads-80-90-Lm-/120840008460>

2 ohm vastus, ~4V power supply

ja <http://www.satisled.com/>

// Software PWM

```
ISR(TIMER1_OVF_vect) {          // interrupt service routine that wraps a user defined function supplied by
attachInterrupt
```

```

//Timer1.isrCallback();
}

void setup() {

  pinMode(13, OUTPUT);

  // Set Timer1, TCNT1, to 16 MHz
  // This will break Arduino's analogWrite to pins X and Y
  cli(); // disable interrupt
  TCCR1A = 0; // No PWM is used. So set this to zero.
  TCCR1B = 0 << CS12 | 0 << CS11 | 1 << CS10; // Input clock is set to clk_io/1 (No
prescaling)
  TIMSK1 = 1 << TOIE1; // Bit 0 – TOIE1: Timer/Counter1, Overflow Interrupt Enable
  TCNT1 = 0x0000; // Reset timer counter
  sei(); // enable interrupts

}

int pwmRampDelta = 1;
uint16_t pwmRampValue = 1;
uint16_t pwmRampValueMax = 1024; // 0..65535

void loop() {

  pwmRampValue += pwmRampDelta;
  if (pwmRampValue == 0 || pwmRampValue == pwmRampValueMax) {
    pwmRampDelta = -pwmRampDelta;
  }

  uint16_t ticks = TCNT1;

  if (pwmRampValue < ticks) {
    digitalWrite(13, HIGH);
  } else {
    digitalWrite(13, LOW);
  }

}

```