

# Colors Shield

-Magic RGB LED matrix driver shield

## Overview



Colors shield is a magic RGB LED dot-matrix driver shield for Arduino or IFlat-32. Colors shield pairs the M54564 with a single DM163 constant current driver. By using the DM163, the Colors shield gains three 8+6-bit channels of hardware PWM control of the LED's freeing up the MCU from having to implement it in software. This gives the ATmega more CPU bandwidth for performing other tasks.

## Features

- 8bits colors support with 6bits correction for each color in every dots
- Hardware 16MHz PWM support
- Without any external circuits, play and shine!
- 24 constant current channels of 100mA each
- 8 super source driver channels of 500mA each

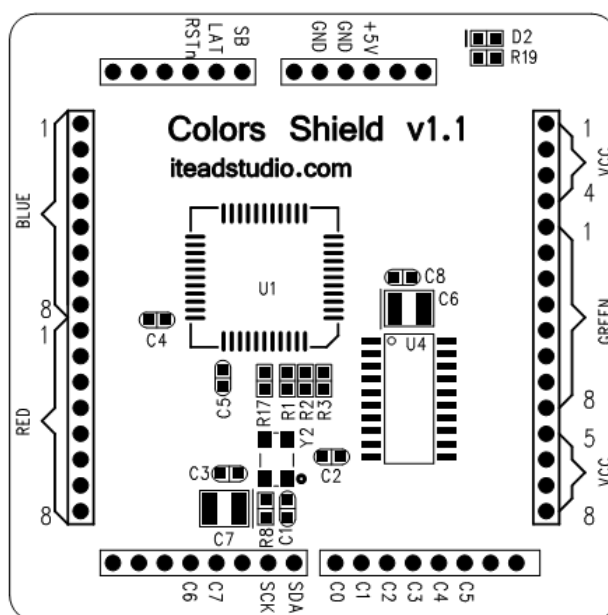
## Specifications

PCB size	60mm X 60mm X 1.6mm
Indicators	PWR State
Power supply	5V DC
IO	13
RoSH	Yes

## Electrical Characteristics

Specification		Min	Type	Max	Unit
Power Voltage		4.5	5	5.5	VDC
Input Voltage	Target Voltage = 3.3V	3	3.3	3.6	V
	Target Voltage = 5V	4.5	5	5.5	
Input Voltage VL:		-0.3	0	0.5	V
Current Consumption (Except LED matrix)		-	20	40	mA
Drive current (Every channel)				500	mA
Drive current (Every dot)				58	mA

## Hardware



Pad Name	Type	Description
SDA	I	Serial input for grayscale data
SCK	I	Synchronous clock input for serial data transfer. The input data of SDA is transferred at rising edges of SCK.
SB	I	If SB is H, shift-in data would be stored in the 8-bit BANK 1. If SB is L, shift-in data would be stored in the 6-bit BANK 0.
LAT	I	When LAT converts from H to L, grayscale data in both shift register banks are latched.
RSTn	I	The shield is initialized when RSTn low. There is an internal pull-up in this pin. This pin couldn't be floating. Before using the shield, it must be reset first.
C0	I	Channel 0 enable input, High level active
C1	I	Channel 1 enable input, High level active
C2	I	Channel 2 enable input, High level active
C3	I	Channel 3 enable input, High level active
C4	I	Channel 4 enable input, High level active
C5	I	Channel 5 enable input, High level active
C6	I	Channel 6 enable input, High level active
C7	I	Channel 7 enable input, High level active
+5V	Power	Power supply for Color shield, input range is from +3.3V to 5V.
GND	GND	

## License



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## Revision History

Rev.	Description	Release date
v1.0	Initial version	03/09/2011