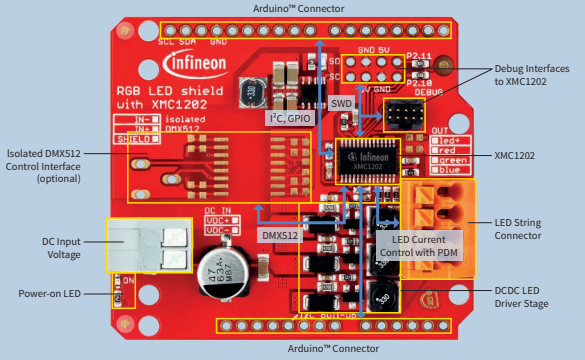
Quick Start Guide

RGB LED Lighting Shield with XMC1202 for Arduino

The RGB LED Lighting Shield from Infineon Technologies is one of the first intelligent evaluation boards compatible to both Arduino and Infineon's XMC1100 BOOT KIT.

The Lighting shield allows the adoption of different LED light engines to ensure fast prototyping and to make inexpensive evaluation easy. The RGB LED Lighting Shield offers 3 independent output channels for flicker-free control of multicolor LED light engines. The shield itself is controlled by a programmable XMC 32-bit ARM® powered MCU with embedded Brightness Color Control Unit (BCCU, XMC1200 MCU series).

The BCCU hardware engine provides an extremely low-cost but very high-quality LED lighting solution. This automated and easy to configure hardware engine ensures smooth, eye-friendly dimming and color mixing for different topologies in an expandable design (with DALI/DMX or Radar for example).



Getting Started

STEP 1 **Choose a high-power light engine**

- Maximum three channels (e.g. RGB)
- Minimum 300mA LED current rating
- Maximum 48V forward voltage per LED channel

NOTE: If the current rating is < 300mA you can easily configure your RGB LED Lighting Shield using the instructions in the board manual.

STEP 2 **Choose a DC adapter**

- Input voltage to the RGB LED shield: 12V ~ 48V DC
- Maximum 48V forward voltage per LED channel

NOTE: DC input voltage to the RGB LED shield should be higher than the forward voltage of the light engine

STEP 3 **Solder pin headers on the RGB LED Lighting Shield**

STEP 4 **Connect the RGB LED Lighting Shield to**

- Arduino Uno R3
- XMC1100 Boot Kit

NOTE:
Find source code at:
www.infineon.com/arduino

STEP 5 **Program Arduino Uno R3 or XMC1100 Boot Kit**

- Example sketches and projects: www.infineon.com/arduino
  - Upload RGBLED_2_SAFE.ino to Arduino Uno R3
  - Upload RGBLED_2_Safe_XMC11.zip to XMC1100 Boot Kit

STEP 6 **Connect the DC adapter to the RGB LED Lighting Shield**

STEP 7 **Turn on the power**

Useful Links

www.infineon.com/arduino
www.infineon.com/dave
www.infineon.com/xmc
www.infineon.com/xmc1000

RoHS

Features

- Compatible with Arduino Uno R3 and XMC1100 Boot Kit from Infineon
- Fully configurable for different light engines
- Can be easily adapted/programmed to various light engines and any input voltage (within operating conditions)
- Wide DC input voltage range
- Simple I^2C interface

Benefits

- Fast prototyping of LED lighting
- Flicker-free light thanks to high-speed pulse-density modulation
- Easy-to-use dynamic dimming and color control
- DC-DC LED current control with high efficiency
- Small size thanks to high-frequency current control (high power density)
- Backdoor access to on-board microcontroller (advanced users only)

Applications

- LED Lighting

Features

Type	Description	Ordering Code (OPN)
XMC1202-T028X0016	32MHz ARM® Cortex™-M0 with Brightness Color Control Unit (BCCU), 16kB Flash, 16kB RAM, rich analog mixed signal, Timer/PWM and communication peripherals in TSSOP-28 package.	XMC1202T028X0016AAXUMA1
BSR606N	OptiMOS™-3 Small-Signal-Transistor, N-channel with max 60mΩ $R_{DS(on)}$ at V_{GS} = 10V. Qualified according to AEC Q101, logic level (4.5V rated).	BSR606NH6327XTSA1

Dear Customer,

Evaluation Boards are provided “as is”. Infineon Technologies disclaims any and all warranties, express or implied, including but not limited to any warranties of non-compliance with any specification, non infringement of third party rights and implied warranties of fitness for any purpose or for merchantability.

Evaluation Boards are not commercial products and are solely intended to be used for evaluation and testing purposes. They shall not to be used for reliability testing or production. The boards may not comply with CE or similar standards (including without limitation the EMC Directive 2004/EC/108 and the EMC Act) and may not fulfill other requirements of the country in which they are operated by the Customer. The Customer shall ensure that each Evaluation Board is handled in a way which is compliant with all relevant requirements and standards in the country in which it is operated.

The Evaluation Board is intended for use only by qualified and skilled technical staff for laboratory usage and shall be used and managed according to the terms and conditions set forth in the related documentation provided with the Evaluation Board.

The Customer accepts the entire risk arising out of the use of the Evaluation Board for any purpose for which the Evaluation Board is not intended, including but not limited to any further processing or distribution of the Evaluation Board. Infineon will not accept any liability or product warranty for these Evaluation Boards. The Customer undertakes to indemnify and hold Infineon Technologies harmless from any third party claims in connection with or arising out of the use and/or handling of the Evaluation Boards by the Customer.

In case of any questions, please contact your local sales partner.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAN ICES-3 (B)/NMB-3(B)

Order Number: KIT_LED_XMC1202_AS_01