## Product Document

PD001007

# Illuminator Evaluation Kit

## Kit Overview

v2-00 • 2021-Jan-22

# Content Guide

# 1 Introduction

The illuminator evaluation kit EVALKIT_Illuminator intends to provide a flexible hardware interface to drive laser diodes in different application contexts using 2D based imaging systems as well as 3D time-of-flight systems.

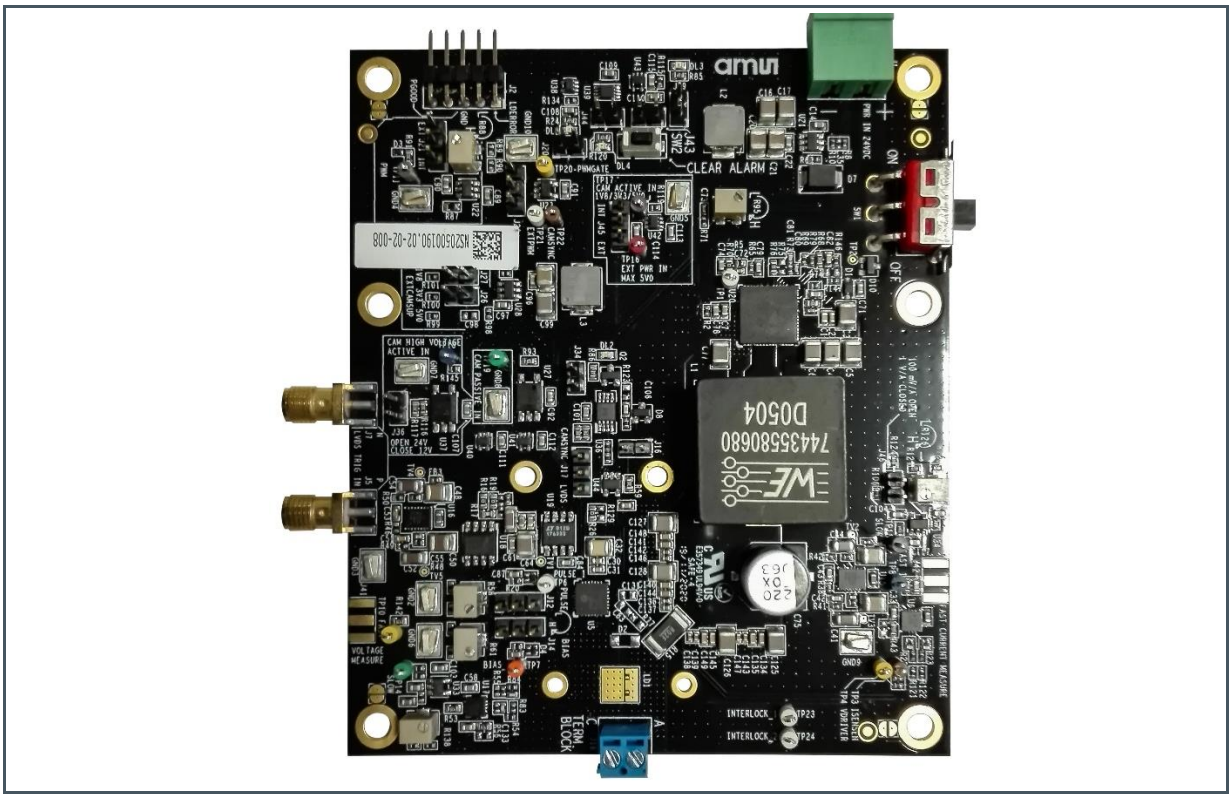
With the kit, the user is able to drive most of **ams**' illuminator modules to allow the user to evaluate easily the performances of the product.

It is the user's responsibility to take care of the eye safety compliance at system level.

## 1.1 Ordering Information

| Ordering Code | Description |
|---|---|
| EVALKIT_Illuminator | Illuminator evaluation kit |

**Figure 1:**
**Picture of the Evaluation Kit**



# 2 General Description and Features

With the board, multiple driving conditions can be done to meet 2D cameras and time-of-flight systems. Its high flexibility enables the following main features:

- Possibility to define a threshold current that is typical of each laser and that can speed up the optical switch on/off of the laser
- Possibility to configure different laser voltages depending on the laser characteristics. In order to support this, the Vout of the DC/DC regulator can be configured using a trimmer
- Possibility to assemble different illuminator modules with different pad size. This is handled by defining the pad on the board as the overlapping of the pads of different illuminators' footprints. The use of socket can help to enhance the flexibility of the pad size
- Possibility to use illuminator modules' starboards or other external module PCB mounts.

**Figure 2:**
**Added Value of Using EVALKIT_Illuminator**

| Benefits | Features |
|---|---|
| Enable different illuminator connections | Screw terminal block to allow external module starboard or PCB adaptor connection and suitable for long pulse width<br>Mounting pads: solder or socket mount possibility for easy replacement and to allow high speed applications |
| Support High current | Up to 10A (pulsed with and without additional bias current) |
| Support 2D camera | Camera flash inputs supporting different electrical interfaces<br>Different voltages allowed (1.8 V / 3.3 V / 5 V / 12 V / 24 V)<br>On-board 100 kHz PWM oscillator with duty cycle control |
| Support 100 MHz ToF | High frequency driver<br>Use of differential signals |
| Facilitate the automation of tests | Support external configuration systems |
| Enable the ease of use | Easy way to measure the current and voltage of the system<br>No external software required for control<br>Colored tests loops to allow an easy location of tests points |

# 3 Revision Information

| Changes from previous version to current revision v2-00 | Page |
|---|---|
| Updated document format | |
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- Page and figure numbers for the previous version may differ from page and figure numbers in the current revision.
- Correction of typographical errors is not explicitly mentioned.