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| **Melexis EVK75027** |
| **Application Note 1: Hidden Functions** |
| Version 1 |

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**Melexis EVK75027** – Application Note 1: Hidden Functions

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# General Information

This guide applies to the Melexis EVK75027 from BECOM Systems and the MLX75027 ToF sensor.

It contains a short description of firmware functionality that is not communicated to customers in the Software User Manual because of its confidentiality.

**The document applies to product V0.11.x**

## Symbols Used

This guide makes use of a few symbols and conventions:

|  |  |
| --- | --- |
|  | **Warning** |
| Indicates a situation which, if not avoided, could result in minor or moderate injury and/or property damage or damage to the device. |
| ­ |  |
|  | **Caution** |
| Indicates a situation which, if not avoided, may result in minor damage to the device, in malfunction of the device or in data loss. |
|  |  |
|  | **Note** |
| Notes provide information on special issues related to the device or provide information that will make operation of the device easier. |
|  |  |
|  | **Procedures** |
| A procedure always starts with a headline   1. The number indicates the step number of a certain procedure you are expected to follow.  Steps are numbered sequentially.   This sign ⮞ indicates an expected result of your action. |
|  |  |
|  | **References** |
| This symbol ⮱ indicates a cross reference to a different chapter of this manual or  to an external document. |

# Feature Description

## Saving registers as Factory Default

In order to save the register map as factory default please execute the following steps:

1. Register ***CmdEnablePasswd*** 0x0022: Write value 0x9C65
2. Register ***CmdExec*** 0x0033: Write value 0x19D6

## Direct access to MLX75027 registers

The control interface allows direct access to the MLX75027 ’s registers. Register addresses are shifted by 0x8000 to be addressable alongside the control interface registers:

|  |  |  |
| --- | --- | --- |
| Register name | MLX75027 Register Address | Control Interface Register Address |
| REG\_MLX75027\_0000 | 0x0000 | 0x8000 |
| REG\_MLX75027\_0001 | 0x0001 | 0x8001 |
|  | … | … |
| REG\_MLX75027\_532F | 0x532F | 0xD32F |

Table 1: Register mapping from MLX75027 to Control Interface

Sensor registers can not be saved alongside the camera registers. See chapter 6 for information on how to change sensor register settings permanently.

## MLX75027 initialization register map

At startup, the MLX75027 sensor is initialized with a sequence of register writes read from the camera’s nonvolatile memory.

A default initialization file named init\_027\_v001.csv (the number value in v001 refers to the file version and might increase in the future) is located at /mnt/settings/.

An override file named override\_027.csv can be placed at /mnt/user/ to change values from the default initialization file or to add additional values.

Both files must follow the following file structure and must use Unix/Linux style line endings.

|  |  |  |
| --- | --- | --- |
| Line Number | Example Value | Description |
| 0 | 0x1234 | Type identifier: 0x1234 for an initialization file, 0x4321 for an override file |
| 1 | 0x1 | File header version |
| 2 | 0x1 | File version (ignored) |
| 3 | This is an example | Custom string for file description |
| 4 | --- | Mandatory separator |
| 5 (...) | 0x1006; 0x08 | Register: (sensor) address; value |

Table 2: Initialization file structure

|  |  |
| --- | --- |
|  | **Caution** |
| Please consult the MLX75027 sensor datasheet prior to changing any sensor registers. Improper use of this feature may result in incorrect data or even permanent damage to the Melexis EVK75027. |

# Document Revision History

|  |  |  |
| --- | --- | --- |
| Version | Date | Document Revision |
| 1 | 2019 03 13 | Initial version of the document |

Table 3: Document revision history

1. List of Figures and Table

**Figures**

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