



## **USER MANUAL**

# **Mobeye<sup>®</sup> CM2410 GSM fire alarm communicator**

**Accessory for Ei Electronics fire detector**

## **Attention! Very important**

This user manual contains important guidelines for the installation and usage of the Mobeye® device in combination with an Ei Electronics fire detector.

Please read the manual thoroughly before you start using the device. It contains vital information on unit operation and installation. If you are installing this device the manual must be given to the householder.

In case of damage caused by disregarding the guidelines, the warranty becomes void.

The user must regularly check the proper functioning of the device. The manufacturer cannot be held liable for any damage or loss caused by any incorrect use or incorrect functioning of the Mobeye® device.

## **Safety guidelines**

- The permitted ambient temperature during operation may not be exceeded (not lower than 0°C and not higher than 40°C).
- The device is intended for use in dry and clean places with a residential function.
- Protect the device from moisture, heat and water splashing.
- The guidelines for the battery usage must be regarded.
- Do not expose the device to strong vibrations.
- Do not let it fall from height.
- Do not use in an environment where any inflammable gases, vapors or dust are present or could be present.
- Repair of the device may only be carried out by people, trained for Mobeye® repair.
- If the device must be repaired, only original replacement components may be used.

## **Use in accordance with the regulations**

The purpose of this device in accordance with the regulations is sending SMS text messages and making telephone calls after an alarm situation. Other uses are not permitted and may invalidate the warranty.

## **Product and battery recycling**

When disposing of this product, separate the product and the CR123 batteries from other waste streams to ensure that it can be recycled in an environmentally sound manner. For more information on collection and proper disposal, please contact your local government office or the retailer where you purchased this product.

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## 1. GENERAL DESCRIPTION

The Mobeye GSM fire alarm communicator CM2410 is a battery operated GSM module used to send out an alarm after the input is triggered by a EI Electronics smoke or heat detector.

The Mobeye Smoke Detector CM2400 is a combination of the Ei Electronics Ei605TYC and the Mobeye CM2410. For other combinations please see paragraph 3.1.

The Mobeye CM2410 has many options to influence the behaviour, which are described in chapter 5.

The default settings for standard use are:

- In case the input 1 of the alarm module is activated by the EI Electronics fire detector, the Mobeye GSM communicator sends an alarm SMS text message and calls the phone numbers as programmed by the user.
- In case the batteries need to be replaced, the Mobeye GSM communicator sends a 'battery low' SMS text message to the administrator (first telephone number).

Please refer to the manual of the EI Electronics detector for installation instructions and the description of the behaviour of the fire detector.

For additional alarm and monitoring functions the Mobeye CM2410 can be connected to the Mobeye Internet Portal, which is explained in chapter 8.

Manuals in other languages can be found on the website.

Deutsch: [www.mobeye.eu/de/dokumentation/anleitungen](http://www.mobeye.eu/de/dokumentation/anleitungen)

Nederlands: [www.mobeye.eu/nl/documentatie/handleidingen](http://www.mobeye.eu/nl/documentatie/handleidingen)

## 2. GETTING STARTED

To get started with the Mobeye CM2410 at least the following steps need to be taken in following order:

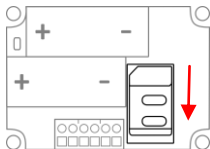
1. Place a SIM card (with PIN code 0000 or without PIN code)
2. Place the batteries
3. Enter the program mode
4. Program at least one telephone number
5. Mount the GSM module housing to the ceiling
6. Connect the EI Electronics detector and close the cover
7. Perform a test

These steps are further explained in this chapter.

### 2.1 INSERT A SIM CARD

Insert a SIM card into the module. Push the black cover outward slightly to open the holder. Before installing the SIM card should have PIN code "0000", or PIN code removed.

(A PIN code can be changed or removed by putting the SIM card in to any mobile phone and entering the 'security' menu).



NB: Make sure the SIM card is inserted before the batteries are inserted. In case of a SIM card change, please first remove the batteries (and remove any other external power supply).

### 2.2 INSERT THE BATTERIES

Insert the two batteries (CR123) in the module. Use the +/- indication for the correct placement.

## **2.3 ENTER THE PROGRAM MODE**

Directly after inserting the batteries, the Mobeye CM2410 switches to the program mode. First the GSM module establishes network connection. During this time the LED flashes green/red 2 sec. on/1 sec. off. Within 10-30 seconds the connection is established and the status LED starts flashing. The green LED will flash 1 sec. on/1 sec. off to indicate that the module is not configured (at least one telephone number should be programmed), or it will stay on continuously in case the first telephone number has been configured.

In the program mode the GSM module is open, ready to receive SMS commands. If no correct command was received for 3 minutes, a time-out occurs and the GSM module switches off in order to save the batteries. The unit returns to the low power operational mode.

The Mobeye CM2410 returns to the program mode by reinserting the batteries (all setting will be remained).

## **2.4 PROGRAM AT LEAST ONE TELEPHONE NUMBER**

The Mobeye CM2410 is able to send messages up to 5 telephone numbers. The first telephone number (TEL1) belongs to the administrator. Technical messages (such as *battery low*) are sent to this telephone number only. Without this number, the Mobeye CM2410 cannot function.

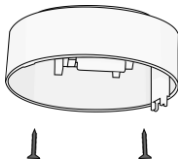
When the CM2410 is in initial (factory) status and in program mode, the first number is programmed by calling the telephone number of the Mobeye CM2410 using the administrators' phone. The unit will recognize this number and store it as TEL1. The administrator will receive a confirmation SMS text message including the security code. This code is needed to program the other settings in the unit.

NB: For this way of programming the number recognition in the administrator's phone must be 'on'. It is also possible to program the first number by sending an SMS text message to the unit from any telephone as described in paragraph 5.2.

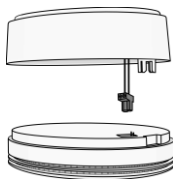
Three minutes after receiving a last programming command, the GSM module closes. The LED flashes green once per 3 seconds to indicate that the device is operational.

## 2.5 MOUNT THE GSM MODULE HOUSING TO THE CEILING

Mount the housing in which the module is fixed to the desired place to the ceiling, using the plugs and screws which can be found inside the Ei Electronics box. Please refer to the manual of the Ei Electronics detector for the ideal location and installation method.



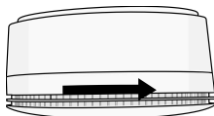
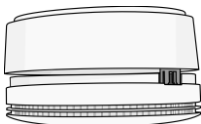
## 2.6 CONNECT THE EI DETECTOR AND CLOSE THE COVER



Remove the back cover from the Ei Electronics detector. The GSM communicator will be used as back cover. Press the green cabled connector to the pins of the Ei Electronics detector. Next to the pins the text 1 2 is written. Be sure that the (in most situations) grey connector in the Ei Electronics detector was removed.

**Hold the EI detector to prevent tension on the wires!**

Bring the Ei Electronics detector and the back cover with GSM module to each other at the correct position and turn the detector gently clockwise until it is closed and locked. In the Ei detector a red light will flash regularly.





## **2.7 PERFORM A TEST**

After the previous steps, the GSM fire detector is operational.

In order to execute a test, press the TEST & HUSH (or TEST & STUMM) button of the EI detector during a few seconds (this can take up to 5 seconds). The siren will sound and the GSM module will establish network connection in order to send the SMS messages and call the contact persons.

**Note:** make sure the cover is closed, so that the fire detector and the GSM module are locked.

## **2.8 CONFIRMATION OF THE ALARM MESSAGE**

When the system is triggered it will send alarm notifications. First an SMS text message is sent to all programmed alarm numbers, followed by a phone call. When you pick up the phone, you will hear beeps. It is possible to confirm the phone call by answering the phone and pressing any key. The other alarm numbers will not be called afterwards.

### 3. COMBINE OTHER EI DETECTORS AND A WIRELESS NETWORK

#### 3.1 OTHER COMBINATIONS OF EI ELECTRONICS DETECTORS

The CM2410 can be applied in various combinations:

- The CM2410 can be combined with the Ei605C and Ei605TYC smoke detectors, Ei603C and Ei603TYC heat detectors.

In a network: the mentioned detectors can be combined in a cabled or wireless network, while only one is equipped with the GSM module. The other detectors in the network can be any detector in the 600- and 650-series, including the Ei650C.

- When the CM2410 will be applied as stand-alone unit, without other detectors in a network, it can also be combined with the Ei650C, Ei650iC, Ei650W or Ei650iW.

**Explanation:** the CM2410 as back cover for the Ei650C, Ei650iC, Ei650W or Ei650iW shall not be combined in a wireless network, since these detectors will not give a signal over the cabled connector after receiving an RF signal.

#### 3.2 SEVERAL DETECTORS IN A WIRELESS NETWORK

Although the Ei Electronics fire detector is a stand-alone unit, it is also possible to form a wireless network with several smoke and heat detectors. For this purpose each Ei Electronics detector needs to be equipped with an RF module. This module can be integrated in the Ei Electronics detector. Before the detectors are operational, the detectors need to be enrolled, in order to know each other.

Please refer to the Ei Electronics manuals for the steps to follow.

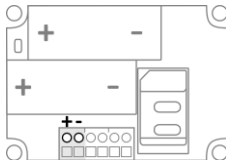
#### 4. USE OF EXTERNAL POWER SUPPLY

Although the Mobeye CM2410 is designed to run on batteries, it is possible to use an external power supply. In this mode the module is always in connection with the GSM network and therefore always in program mode. In case the power fails, the batteries take over the functioning and the first telephone number (TEL1) is informed by an SMS text message. The module continues operating albeit in the low power mode. This means the GSM module switches off and only establishes network connection in case it needs to send out an alarm, test message or low battery alert.

Connect the external power adapter (or any other regulated 12VDC power supply) to the power input of the connector (press on the green pins for connecting the wires):

- V+ to “+”
- Ground (black lead) to “-”

If Mobeye accessory 10027 is used:  
V+ is the black lead with white stripe.



## **5. CONFIGURATION**

To program the Mobeye CM2410, the GSM module must have network connection. In case only batteries are used, first switch the unit to the program mode. Next send SMS commands for the configuration.

All settings are stored and will be kept in the unit, even in case the power supplies are removed.

### **5.1 PROGRAM MODE**

Directly after inserting the batteries, the Mobeye CM2410 switches to the program mode. First the GSM module establishes network connection. During this time the LED flashes green/red 2 sec. on/1 sec. off. Within 10-30 seconds the connection is established and the status LED starts flashing green 1 sec. on/1 sec. off (or stays on continuously in case the first telephone number has been configured).

In the program mode the GSM module is open, ready to receive SMS commands. If no correct command was received for 3 minutes, a time-out occurs and the GSM module switches off in order to save the batteries. The unit returns to the low power operational mode.

The Mobeye CM2410 returns to the program mode by reinserting the batteries (all setting will be remained).

### **5.2 THE (SECURITY) CODE**

For configuration activities the (security) code of the Mobeye CM2410 must be used. The initial (security) code is '1111'.

### 5.3 PROGRAMMING THE SETTINGS BY SMS

To program the settings by SMS text message:

1. Be sure the CM2410 is in program mode (please refer to 5.1).
2. Send an SMS text message with the (security) code and the command.
3. The green LED blinks 3x green to indicate the successful configuration. In case of an incorrect command the LED flashes 5x red.

SMS messages have the following content: **CODE COMMAND:OPTION**

- Do not forget the space character between (security) code and command.
- The commands are case insensitive.
- Several commands may be combined in one SMS message (with a maximum of 160 characters) by placing a # between the commands.

**CODE COMMAND:OPTION#COMMAND:OPTION#COMMAND:OPTION**

See section 5.4 for a full list of SMS commands.
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## 5.4 LIST OF SMS COMMANDS FOR CONFIGURATION

Setting	SMS Command	Options	Default value
Change security code	INSTCODE:	0000...9999	1111
Telephone number for alarm messages	TEL1: .... TEL5:		Empty
Delete telephone number	DEL1 .... DEL5		
Identification text	NAME:	20 characters	Mobeye
Call on/off	CALL:	ON, OFF	ON
SMS on/off	SMS:	ON, OFF	ON
Alarm text input 1	TEXT1:	20 characters	Fire alarm!
Actual time	TIME:	hhmm	Empty
Actual date	DATE:	yyyymmdd	Empty
Interval 'test SMS'	TEST:	0...30 (days)	0
Time test message	TESTTIME:	hhmm	

### Examples:

Set phone number 1:      1111 TEL1:+49712345678

Delete phone number 1:   1111 del1

Be aware of the space between "1111" and the command. The commands are case insensitive.

## 6. POSSIBLE SETTINGS

### 6.1 PHONE NUMBERS

The Mobeye CM2410 is able to send alarm messages to up to 5 phone numbers. The first telephone number (TEL1) belongs to the administrator. Only this number receives all system messages. The other phone numbers (including the administrator) only get the alarm messages.

#### To set or change telephone numbers:

SMS command 1<sup>st</sup> telephone number:

example:

**TEL1:**

1111 TEL1:07123456789

... similar for TEL2:, TEL3:, TEL4: and TEL5:

For foreign numbers, start with + followed by the country code (and depending on the country leave out the zero for the local area code).

example:

1111 TEL1:+447123456789

#### To delete telephone numbers:

SMS command delete 1<sup>st</sup> telephone number: **DEL1**

example: 1111 DEL1

... similar for DEL2, DEL3, DEL4 and DEL5

### 6.2 IDENTIFICATION TEXT

It is possible to add a standard identification text (NAME) to all messages sent out by the Mobeye CM2410. The alarm messages are a combination of the name and the alarm text. A user defined identification has a length of maximum 20 characters. The default identification text is 'Mobeye'.

SMS command identification text:

example:

**NAME:**

1111 NAME:Upstairs

### 6.3 ALARM TEXTS

A unique alarm text can be programmed into the Mobeye CM2410. The user defined text has a maximum length of 20 characters.

The default alarm text is Fire alarm!

SMS command to change the text: **TEXT1:**  
example: 1111 TEXT2:Fire alarm, get help

### 6.4 SMS ON/OFF

By default, the Mobeye CM2410 sends alarm notifications via text message and calls (you will hear a beep signal) to the preset contact persons. By turning off the SMS, the unit will only call after a triggered input.

SMS command enable / disable SMS: **SMS:ON** or **SMS:OFF**  
example: 1111 SMS:OFF

### 6.5 CALL ON/OFF

By default, the Mobeye CM2410 sends alarm notifications via text message and calls the preset contact persons. By turning off the CALL, the unit will only send an SMS text message as alarm notification. It is not possible to switch off both the SMS and the call.

SMS command enable / disable call: **CALL:ON** or **CALL:OFF**  
example: 1111 CALL:ON

### 6.6 SET TIME AND DATE

In the settings list the internal clock time is listed. Some telecom providers offer the correct time in the network, which the Mobeye CM2410 synchronizes during start-up and after sending test messages. It is possible to set the time manually. To view the time, request a settings list by sending the command 1111 SET?.

**To set the actual date:**  
SMS command actual date: **DATE:**

**To set the actual time:**  
SMS command actual time: **TIME:**



## 6.7 TEST MESSAGE

The Mobeye CM2410 can send regular test SMS messages (*keep alive*) to the administrator (first phone number), to ensure the proper functioning of the unit. The timing of the test message is determined by the time of programming. The test time can also be programmed.

The interval between the test messages can be set between 0 days (no test message) and 30 days. The default test interval is set to 0 (no test message).

SMS command interval test message: **TEST:**

example: 1111 TEST:21

## 6.8 SYSTEM RESET

To reset the Mobeye CM2410 to its factory settings:

1. Be sure the GSM module is in program mode (see 5.1).
2. Send following SMS text message to the telephone number in the unit (without CODE)

SMS command Reset:

**RESET**

3. The green LED blinks 3x to indicate a successful command. In case of an incorrect command the LED flashes 5x green.

After a successful reset, the LED will blink green to indicate that the module is not configured. The security code is back to factory settings as well.

## 7. REQUEST LIST OF THE SETTINGS, STATUS AND SIGNAL STRENGTH

Several lists and status reports can be retrieved by sending an SMS text message, from any telephone. Before sending the request, make sure the unit is in the program mode (please refer to 5.1).

Upon sending the command, the Mobeye CM2410 returns an SMS text message to the originator of the request. The commands are case insensitive.

### STATUS REQUEST

The status can be requested by sending following SMS text message. The status includes the status of the power and batteries.

SMS command status request:	<b>STATUS?</b>
example:	1111 STATUS?

### LIST OF SETTINGS

The settings can be requested by sending following SMS text message:

SMS command list settings:	<b>SET?</b>
SMS command alarm text:	<b>TEXT?</b>
example:	1111 SET?

### LIST OF PHONE NUMBERS

The list of telephone numbers can be requested by sending following SMS text message:

SMS command list of phone numbers:	<b>CALL?</b>
example:	1111 CALL?

### GSM SIGNAL STRENGTH

The signal strength of the used mobile network can be requested. If the network is weak, it is advised to use a SIM card of another network provider. The GSM signal strength can be requested by sending following SMS text message:

SMS command request GSM signal:	<b>NETWORK?</b>
example:	1111 NETWORK?

## 8. MOBEYE INTERNET PORTAL

The Mobeye CM2410 sends GSM messages to the preset contact persons. It is also possible to connect the system to the Mobeye Internet Portal. In this secured internet environment the Mobeye CM2410 system(s) can be administered.

The portal offers various functions:

- 1) the portal forwards alarm messages to contact persons (SMS and/or mail), which are set in the portal. The receivers of alarm messages may be different from the receivers of technical messages. Alarm phone calls will still be done directly from the CM2410.
- 2) the name and location can be set in the portal. This name is used in SMS and mail messages.
- 3) the device settings can be programmed through the internet portal or via SMS command.
- 4) once connected to the internet portal, test messages (*'keep alive'*) will be sent to the portal. The portal will check the receipt of test messages ('keep alive'); when the message was not received on time, it sends an exception message.

Look at [www.mobeye.eu/portal](http://www.mobeye.eu/portal) for more information.

## 9. TECHNICAL MESSAGES AND STATUS FEEDBACK

### Technical messages

In the event of technical issues the administrator (TEL1) receives an SMS message. Possible technical messages are:

Message	Reason
Low batteries, external power supply OK	Power is available, batteries need to be replaced.
No external power supply, batteries OK	No external power supply, batteries take care of the operation in low power mode.
Low batteries, no external power supply	No external power supply, batteries need to be replaced.
External power supply OK, batteries OK	The external power is restored (or the adapter is plugged in a socket), batteries do not need to be replaced.
(delayed message)	If (delayed message) is added to the SMS text messages, the message couldn't be sent earlier, due to a SIM card failure or GSM network failure.

When receiving one of the above mentioned technical messages, please take appropriate action as soon as possible. During the battery replacement, the SIM card does not have to be removed.

## Status feedback

LED pattern	Status	Required action
Blinking green, 1 second on / 1 second off	Module not configured	Configure at least one telephone number.
1 green flash every 3 seconds	Module is switched on, powered by batteries	No action required.
Green LED stays on continuously	Module is in program mode and/or powered by an external source	No action required.
Blinking green/red	Module establishes network connection	Wait until the network connection is established .
2 flashes red, every 3 seconds	No GSM connection	Try the SIM card in any mobile telephone; replace SIM card using other telecom provider; try the module at another location.
3 flashes red, every 3 seconds	No valid SIM card or wrong PIN	Try the SIM card in any mobile telephone; remove PIN code; check credit; replace SIM card.
Blinking 3 times green	Successful programming action	No action required.
Blinking 5 times red	Faulty programming action	Check SMS command.
4 red flashes every 3 seconds	Low batteries	Replace both batteries.

## Technical specifications

GSM	: Quad band EGSM, 850/900/1800/1900 MHz
Batteries	: 2* CR123 (lithium)
Battery life in normal mode	: >1 year
Power consumption low power	: ca. 50 $\mu$ A stand-by / max. ca. 500 mA
Ext. power connection	: 12 VDC (+/- 2 VDC) / min. 500 mA (optional)
Power consumption 12V	: ca. 50 mA stand-by / max. ca. 500 mA
Ambient temperature	: 0 °C until +40 °C

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## Declaration of Conformity

Herewith we, Mobeye, declare that the products

**Mobeye CM21 telemetry module**

And the derived products

CM2000, CM2100, CM2200, CM2300, CM2300-FS, CM2400, CM2410, CM2500  
CM2600, CML2015, CML2025, CML2055, CML2255, CML2275, CML2285

are in compliance with the essential requirements of the following European standards / EU Directives:

**Directive 73/23/EEC** (low voltage directive)

**Directive IEC/EN 50130** Electromagnetic compatibility

**Directive 1995/5/EC R&TTE** (Radio & Telecommunications Terminal Equipment)

The conformity with the essential requirements of 1995/5/EC has been verified against:

ETSI EN 301 489-1 V1.5.1  
ETSI EN 301 489-7 V1.2.1  
ETSI EN 301 511 V9.0.2  
CENELEC EN 60950:2001

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