



MDI3xxx module

**HANDS FREE READING OPERATIONS  
& CONFIGURATION SCAN CODES**

Rev D. 05/10/19



MDI4xxx module

There are some options for ‘hands-free’ reading (AKA: Presentation Mode) for Opticon’s MDI3xxx / MDI4xxx series of modules or finished products like the OPI-xxxx or NLV-xxxx family of bar-code readers.

The most common option is to use the “auto-trigger” functionality. In this automatic triggering mode, the White Illumination (for MDI4xxx based products) or Green LED bar (for MDI3xxx based products) is ON and acts as a targeting light for the user. Any barcode brought into the illuminating light will trigger a scan cycle and the Green Bar (For MDI4xxx products) or RED illumination (for MDI3xxx products) will come on and attempt to decode symbols. There is a sleep mode timer in which the auto-trigger illumination will turn off, but it will continue to check the sensor image for any movement within its field of view. This is a great approach for a Kiosk type application.

The other approach is to scan continuously. You can use the S7 (trigger disabled) command where it no longer looks for and external trigger command or button, but continues reading all the time (“continuous reading”) and the command S8 will re-enabled the external trigger ability and stop reading until a command to trigger or external trigger signal is sent.

This document contains several configuration QR codes, however, like in the case of the timed settings, the codes given will not cover all possible settings. If the user wishes to have Opticon create a bar code with the custom setting, or if you would like training on how to create your own configuration bar code, please contact Opticon Technical Support at: [Support@Opticonusa.com](mailto:Support@Opticonusa.com).

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## 1. Auto-triggering Mode

The Auto Trigger detects the read target, presses the trigger and begins reading, all automatically.

Enable/Disable for Auto Trigger is set-enabled. Please save settings when utilizing Cradle Detection during the Reader 'Power On' phase. If removed from the cradle the device will switch to Manual Trigger.

Item	Command	Command Description	Default Settings
Auto Trigger	+F	Disables Auto Trigger	○
	+I	Enables Auto Trigger	

Example Serial command to enable Auto Trigger function: <ESC>+I<CR>

## SCAN CODES

### Enable Auto-trigger mode: +I

Scan the symbol below to Enable the Auto-trigger Function



@MENU\_OPTO@ZZ@+I@ZZ@OTPO\_UNEM@

### Disable Auto-trigger mode: +F

Scan the symbol below to Disable the Auto-trigger Function [Manual Trigger – default]



@MENU\_OPTO@ZZ@+F@ZZ@OTPO\_UNEM@

## 2. Detection Modes

The Reader comes equipped with 3 distinct detection processes. These processes are interchangeable depending on the intended use.

### 1) Green: Aiming Detection

The target will be detected upon entering the Reader's field of view when the green AIM bar is ON and an object transects this illumination. Due to room illumination intensity having a large effect on the target's detectability, it is recommended to use the Green Aiming function for only indoor applications (not recommended outdoors under bright sunlight). This is the default Mode for the MDI3xxx products.

### 2) Main Illumination Detection

The target will be detected upon entering the Reader's field of view when the Main illumination is ON and an object transects this illumination. (White light for the MDI4xxx based products & Red light for MDI3xxx based products). This function is usable even under bright conditions. This is the default setting for the MDI4xxx products.

### 3) No Light Detection

This action allows detection under conditions with no illumination emanating from the module. The detection response will decrease as external ambient light decreases. Because an amount of light in the surrounding area is needed to perform detection functions, the reader is unable to perform in dark areas. This function is best used under bright ambient conditions such as outdoor kiosks.

Item	Command	Command Description	Default Settings
Detection Mode	DDG	Green Aiming Detection	Default for 3xxx
	DDH	Main Illumination Detection	Default for 4xxx
	DDI	No Light Detection	

Example Serial command to turn off light detection : `<ESC>[DDI<CR>`

### DDG: Detection Mode = AIM Illumination



### DDH: Detection Mode = Main Illumination:



### DDI: Detection Mode = No Illumination:



### 3. Detection Sensitivity

The Detection Sensitivity may be adjusted. It may be necessary to adjust the settings for sensitivity, due to it changing depending on the illumination of the area. A general outline for the detection distance from the Reader's front is displayed below.

Item	Command	Command Description	Default Settings
Detection Sensitivity	XMF	Detection Sensitivity (10%): Sensitive	
	<b>XMH</b>	<b>Detection Sensitivity (30%): Normal</b>	○
	XMJ	Detection Sensitivity (50%): Less sensitive	

Example Serial command to set autotrigger to Sensitive: <ESC>[XMF<CR>

## SCAN CODES

Sensitive = 10% 'XMF'



Normal Sensitivity = 30% 'XMH'



Less Sensitive = 50% 'XMJ' (default)



## 4. Multiple Read Reset Time

When utilizing the auto trigger, it is possible to set a duration gap wherein the same code is not read multiple times. The default is 700mS. So the label must be removed for 700mS before it will allow another decode of the same data. This may be appropriate for a retail sales where there may be a scan of the same product UPC code. However, in the case of medication where items are unique, then it would not be appropriate to scan the same item twice in a row. So to disable decoding the same label twice, set the double read timeout to "0" zero. But once the reader reads a different code then the above function will reset (i.e. the previous data could be read again).

Item	Command	Command Description	Default Settings
Multiple Read/ Double Code Read Reset Time	D3R Qa Qb Qc Qd	Multiple Read Reset Time/Double Code Read (1000a+100b+10c+d) [x10mSec]	700millisecond (0-9999)

Example Serial command to set Double Code Read to 0 (no double read possible): `<ESC>[D3R00000000<CR>`



## SCAN CODES

Double Read reset timeout = 1000mS:



Double Read reset timeout = 700mS:



Double Read reset timeout = 500mS:



Double Read reset timeout = 300mS:



## 5. Auto Trigger Sleep Mode

If the target is unreadable for an extended period of time, the auto trigger will switch into Sleep Mode. If ambient motion is detected while in Sleep Mode the illumination will light and enter into a trigger mode if the motion is still present. Auto-trigger Sleep Mode may be disabled by entering the value "0" and then the auto-trigger illumination (according to the "detection mode set") will remain always ON.

Item	command	Command Description	Default Settings (Effective Range)
Auto Trigger Sleep Mode	EBW Qa Qb Qc Qd	Sleep Mode Duration Settings (1000a+100b+10c+d) [x1sec]	<b>300 sec<sup>1</sup></b> (0-9999) <b>60sec<sup>2</sup></b>

Example Serial command to set Sleep Mode to 0seconds : `<ESC>[EBWQ00000000<CR>`



## SCAN CODES

Auto-trigger sleep timeout = 5min (300s):



Auto-trigger sleep timeout = 1min (60s):



Auto-trigger sleep timeout = 1/2min (30s):



Auto-trigger sleep timeout = 1/4min (15s):



<sup>1</sup> Default time for NLV-3101 / MDI3xxx products

<sup>2</sup> Default time for NLV5201 / MDI4xxx products

## 6. Auto Trigger Sleep Interval Gap

### For MDI3xxx module based readers:

While the Auto-trigger mode is asleep, the module will wake-up at intervals to test for motion. it is possible to set this wake-up detection gap interval.

**NOTE:** This function is not used on the MDI4xxx module based products (it will have no effect), since it is always detecting for motion even if the illumination is off.

Item	Command	Command Description	Default Settings (Effective Range)
Detection Gap	EBX Qa Qb Qc	Detection Gap Duration Settings (100a+10b+c) [10millisecond]	500millisecond (1-999)

Default: `<ESC>[EBXQ05Q0<CR>`

Example Serial command to set wake-up (detect) every 2 seconds: `<ESC>[EBXQ2Q0Q0<CR>`

## SCAN CODES

Auto-trigger sleep interval = 7 Sec (700x10ms):



Auto-trigger sleep interval = 5 Sec (500x10ms):



Auto-trigger sleep interval = 3 Sec (300x10ms):



Auto-trigger sleep interval = 1 Sec (100x10ms):



## 7. Trigger Mode (Enable/Disable) : [Constant Reading Mode]

The Triggering capability can be enable [default mode] or disabled.

When the trigger is “disabled”, the reader no longer waits for a triggered input, but continuously enters the reading mode and keeps the illumination (and AIM bar) ON all the time; attempting to decode any barcode placed in its field of view. Disabling the “trigger mode” will effectively take priority over any auto-trigger setting modes.

When the trigger mode is “enabled”, the reader then waits for either a trigger serial command (command: Z) or an external trigger input signal or the physical trigger button on the reader. If any auto-trigger modes were previously set, they will now become available again.

Item	Command	Command Description	Default Settings
Trigger Mode	S8	Enables the Trigger Capability	○
	S7	Disables the Trigger [Constant Read Mode]	

Example Serial command to disable Auto Trigger function: <ESC>S7<CR>

### Scan Codes

Disable Trigger (Continuous Reading = ON) <S7>

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@MENU\_OPTO@ZZ@S7@ZZ@OTPO\_UNEM@

Enable Trigger (Default = wait for a trigger signal) <S8>

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@MENU\_OPTO@ZZ@S8@ZZ@OTPO\_UNEM@