

## ! - PRODUCT CHANGE NOTICE - !

DATE: 07/31/2023

PCN #: 230731-1

### *MDI3x00 module & product family - Flash ROM Change*

Dear valued Opticon customer,

The purpose of this communication is to inform you of an upcoming change to the following products listed below. This change is part of our effort and commitment to continuous improvement of our products and processes.

#### PCN Overview

PCN Issue Date:	7/31/2023
Effective Date of Change:	1 to 3 months from now
Expected First Ship Date:	TBD
Last Date to buy pre-change	TBD
Change Type:	Component Change (IC) & Firmware Change
New change Identified by:	Serial Numbers will be noted when the Flash ROM is changed
Reference Documents:	See specification differences in this document.

#### Products Affected

- **MDI-3000** Bar Code Scan Engine (2-piece Module)
- **MDI-3100** Bar Code Scan Engine (1-piece Module)
- **MDI-3200** Bar Code Scan Engine (2-piece Module)
- **MDI-3300** Bar Code Scan Engine (1-piece Module)
- **OPI-3601** Bar Code Hand Scanner
- **NLV-3101** Bar Code Fixed Mount Scanner
- **L-50X** Bar Code Hand Scanner
- **OPN-3002i/n** –Companion Scanner
- **OPN-3200** – Hand Scanner

*Note: Affects all standard and customization products for the base products listed above. And for all interface types (USB/RS232) and all optics ranges (SR, MR, HD, UD).*

## Reason for Change

- The current flash ROM contained on the MDI-3x00 modules, has been listed as end-of-life (EOL). For this reason, we will replace it with an alternative.
- In this case, the internal firmware (FW) must also be changed in advance or at the same time. Firmware now needs to recognize both versions of flash ROM types.

## Description & Extent of Change

Opticon plans to replace the Flash ROM with a new part (manufacturer and part number is unknown currently). This will require an update to the MDI-3x00 series Operating System (O.S.) firmware soon to support the detection of the new Flash ROM. This new firmware change is a mandatory upgrade so it may detect between older flash ROM and the new style of Flash ROM. Custom scanners & modules from Opticon, Inc. USA that had previously LOCKED firmware (will not change), will now require a change in the firmware to detect both versions of Flash ROM. After this change, the firmware can then be LOCKED again if required.

**NOTE: Downgrading Protection Enforced:** Once this new firmware is updated, the scan engine will not support a previous version of firmware. The version of firmware is noted by the last two digits of the firmware number (i.e. BA01J38 = version 38). Sending command <ESC>Z1<CR> serially -or- scanning the code below will retrieve this firmware number.



Report Installed Firmware:

## CHANGE TABLE:

		Before change	After change
1	Flash ROM (Mainly for program storage)	EN39SL160AL-70 (ESMT)	SST39WF1601-70 (Microchip Technology)
2	Firmware	BA01J34 *	BA01J38 *

*\* This is the version for the Opticon “standard” product. Custom products may have different version numbers.*

## SPECIFICATIONS - COMPARISON TABLE:

		(unit)	Current Flash ROM	Alternative Flash ROM
Type			EN39SL160AL-70	SST39WF1601-70
Manufacture			ESMT	Microchip Technology
Package			48-ball WFBGA (4 x 6mm)	48-ball WFBGA (4 x 6mm)
Capacity			1M x 16 bit	1M x 16 bit
Manufacture ID			7Fh	BFh
Device ID			274Bh	274B
DC Characteristics	Operating Range	Vcc	1.65 ~ 1.95 V	1.65 ~ 1.95 V
	Active read current	Icc1	5 mA Typ.	10 mA Max.
	program/erase current	Icc3	15 mA Typ.	25 mA Max.
	standby current	Icc2	0.2 uA Typ.	under 5 uA Typ., 40 uA Max.
	Input Low Voltage	Vil	-0.5 ~ 0.3xVcc	0.2xVcc Max.
	Input High Voltage	Vih	0.7xVcc ~ Vcc + 0.3	0.8xVcc Min.
	Output Low Voltage	Vol	0.1 V Max.	0.1 V Max.
Output High Voltage	Voh	Vcc - 0.1 V Min.	Vcc - 0.1 V Min.	
AC Characteristics	Read cycle time	Trc	70 ns Min.	70 ns Min.
	Output Enable to Output Delay	Toe	30 ns Max.	35 ns Max.
	Chip Enable to Output High-Z	Tdf	20 ns Min.	40 ns Min.
	Output Hold time	Toh	0 ns Min.	0 ns Min.
	Address hold time	Tah	45 ns Min.	50 ns Min.
	Address setup time	Tas	0 ns Min.	0 ns Min.
	Data setup time	Tds	30 ns Min.	50 ns Min.
	Data hold time	Tdh	0 ns Min.	0 ns Min.
	Data setup time	Tds	35 ns Min.	50 ns Min.
	Data hold time	Tdh	20 ns Min.	30 ns Min.
Endurance	cycles		100,000 Min.	100,000 Typ.
Data Retention	years		Greater than 20 (@125deg.)	Greater than 100

## EVALUATION RESULTS:

Classification	Item	Judge	Criterion
Alternative device checking	Confirmation of new Flash ROM characteristics	OK	
General operation	High-temperature operation test	OK	Readings, communications, FW-updating, Startup, etc.
	Low-temperature operation test	OK	
Electrical Specifications	Current consumption	OK	To meet product spec.

### Effect of Change on “Form”, “Fit”, or “Function”

There will be no change to “Form”, “Fit”, nor “Function”. However, the firmware will report its new

*If you have any questions, please contact your sales representative or Opticon Technical Support at (800) 636-0090 ext 2127 or (425) 651-2127.*