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Type No.	**DMC-50747NF-AK** **LCD MODULE TECHNICAL NOTE**
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Revision	**0.0**
Date	**2004/06/06**

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References:

(a) DMC-50747NF-AK LCD Module Technical Specification First Edition 9 July 2001.

(b) DMC-50747-series Drawing UE-310783 dated 27 June, 2001

(c) Seiko Epson Document MF423-11 LCD Driver IC S1D12000-series Technical Manual.

1. PURPOSE

1.1. This errata specification provides additional information and corrections for interfacing and programming the Optrex DMC-50747NF-AK display.

2. DMC-50747 POWER SUPPLY

2.1. It is preferred the display is run as a 3.0 V device. The display is operable with logic levels of up to 5.5 V.

2.2. Section 2.2 DC characteristics states the reader should refer to Section 3.1 for the Vlcd value. Vlcd is based upon the difference between Vdd and the Vout voltage which must be externally supplied.

For a 3.3 V system, supply, please supply at least -2.4 V to -4.0 V at the Vout pin to meet the Vdd-Vout range of 5.6 V to 7.3 V over the operating temperature range.

For a 5.0 V system, supply, please supply at least -0.7 V to –2.3 V to Vout.

A source for inverting DC to DC converters can be found at www.linear.com.

2.3. The display does not use the internal DC to DC inverting boost circuit for the LCD drive voltage. Note 1 in Section 2.2 regarding triple boost should not be construed to imply the drive voltages are generated onboard.

The display uses a Seiko Epson S1D12303 LCD controller-driver. The programming of this device is not covered in the Dot Matrix Character LCD ModuleUser's Manual available at www.optrex.com. To program the display, please download reference (c) at:

http://www.eea.epson.com/go/Prod_Admin/Categories/EEA/IC/ASSP/Display_IC/LCD_Drivers_ROM/displayCategory

3. DMC-50747 ERRATA SPECIFICATIONS

3.1. The Section 4.2 Example of Power Supply is not correct. Please refer to Figure 1 for the correct hookup. By varying the potentiometer, LCD contrast can be controlled. Please note that this setup is shown at the bottom of page 4-20 of reference (c) for the instance of 'External Power Supply.'

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Figure 1 -- Block Diagram of Power Supply

4.2.Block Diagram Example of Power Supply

It is recommended to apply a potentiometer for the contrast adjust due to the tolerance of the driving voltage and its temperature dependence.
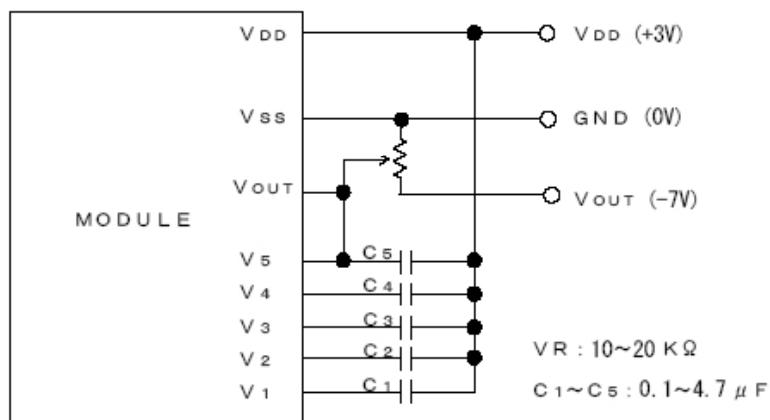
Both the boosting circuit and the voltage control circuit are not used in this module.
Therefore, connect V_5 pin with V_{OUT} pin and supply the LCD driving voltage from the outside.

4. DMC-50747 PROGRAMMING

4.1.   Since the internal DC to DC converter is not used, the S1D12303 POWER CONTROL command must configure the device to turn OFF the DC to DC converter. Since the boost circuit is not used the voltage regulator should also be turned OFF. The voltage follower should be ON to provide contrast control. Contrast is controlled by the ELECTRONIC VOLUME SET command.

5. CONCLUSIONS

5.1.   Optrex intends continuous updates to this document to ensure it is accurate and current. Optrex welcomes comments that improve the document or correct errors. Direct questions and comments to skelley@optrexusa.com.

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DOCUMENT APPROVALS

Written
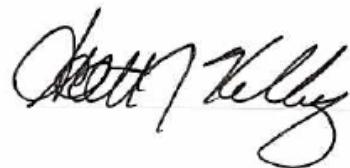
(signature) OSB Scott Kelley   6/7/2004

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Field Applications Engineer

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N/A   Date
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REVISION HISTORY

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0.0	6/7/2004	INITIAL ISSUE	Scott Kelley 6/7/2004

EFFECTIVE PAGES

Page(s)	Revision
1 - 4	0.0

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