



# DK3300-ELCD

## DK3300-ELCD Development Kit

DATA BRIEFING

### FEATURES SUMMARY

- CONTAINS ALL THE ITEMS NEEDED TO EXPLORE THE TURBO uPSD3300 MCU:
  - DK3300-ELCD Development Board (populated with the uPSD3334D and enhanced graphic LCD)
  - Keil ULINK USB-JTAG Adapter
  - Raisonance R-LINK-ST USB-JTAG Adapter
  - Raisonance RKIT CD
  - RS-232 Cable and USB Cables
  - 110/220V Universal Power Supply
  - DK3300-ELCD ST CD
  - Quick Start Guide
- AVAILABLE FOR ONLINE ORDERING
- SUPPORTS 3rd PARTY DEVELOPMENT TOOLS

Figure 1. Development Kit Contents



Table 1. Ordering Information

| Part Number             | Voltage                 | Price (in US\$) |
|-------------------------|-------------------------|-----------------|
| DK3300 <sup>(1,2)</sup> | Universal (100V - 240V) | 199.00          |
| DK3300-ELCD             | Universal (100V - 240V) | 199.00          |

Note: 1. NND = Not for New Design

2. This product is still valid; it just has the regular LCD. Schematics and sample code for this kit is available at [www.st.com/psm/](http://www.st.com/psm/).

**TABLE OF CONTENTS**

**FEATURES SUMMARY** ..... 1

    Figure 1. Development Kit Contents ..... 1

    Table 1. Ordering Information ..... 1

**SUMMARY DESCRIPTION** ..... 3

**DK3300-ELCD CD Contents** ..... 3

**Raisonance CD Contents** ..... 3

**DK3300-ELCD demonstrations** ..... 3

**Documentation** ..... 3

**3rd Party Development Tools** ..... 3

    Table 2. Additional Resources for DK3300-ELCD Components ..... 3

**PART NUMBERING** ..... 4

    Table 3. Ordering Information Scheme ..... 4

**APPENDIX A.DK3300-ELCD SCHEMATICS** ..... 5

    Figure 2. Top Level ..... 5

    Figure 3. MCU ..... 6

    Figure 4. Power ..... 7

    Figure 5. Peripherals ..... 8

    Figure 6. Connectors ..... 9

**APPENDIX B.DK3300-ELCD Board** ..... 10

    Figure 7. DK3300-ELCD Board Connections ..... 10

**APPENDIX C.DK3300-ELCD JUMPERS** ..... 11

    Table 4. DK3300-ELCD Jumpers Selection and Defaults ..... 11

**REVISION HISTORY** ..... 12

    Table 5. Document Revision History ..... 12

## SUMMARY DESCRIPTION

The DK3300-ELCD is a development kit for the uPSD3300 family (see Table 2) which is a series of 8051 class microcontrollers (MCUs) that contain a fast Turbo 8032 core with a large Dual Bank Flash memory, a large SRAM, many peripherals, programmable logic, and a JTAG Debug/In System Programming (ISP) port.

### DK3300-ELCD CD Contents

Featured applications include those listed below for third-party development, however, the uPSD is compatible with any compiler supporting standard 8051 architecture.

- Keil uVision2: code-size-limited version

### Raisonance CD Contents

- PSDsoft Express
- Raisonance Rkit Development Suite: code-size-limited version
- Includes full-featured debugger (unlimited)

### DK3300-ELCD demonstrations

- Example code file (1) – BANKING.zip
- Example code file (2) – EEPROM\_EMUL.zip
- Example code file (3) – I2C.zip
- Example code file (4) – NEW\_DK3300\_PROJECT.zip
- Device drivers for PWM, I<sup>2</sup>C, and so forth - dk33\_dd.zip
- PWM example code - PWM\_ADC.zip
- SPI example code – SPI.zip

### Documentation

- DK3300-ELCD User Manual (Quick Start Guide)

### 3rd Party Development Tools

- Keil uVision2 (Integrated Development Environment)
- ULINK USB-JTAG Adapter
- Raisonance Rkit Development Suite
- R-LINK-ST USB-JTAG Adapter

**Table 2. Additional Resources for DK3300-ELCD Components**

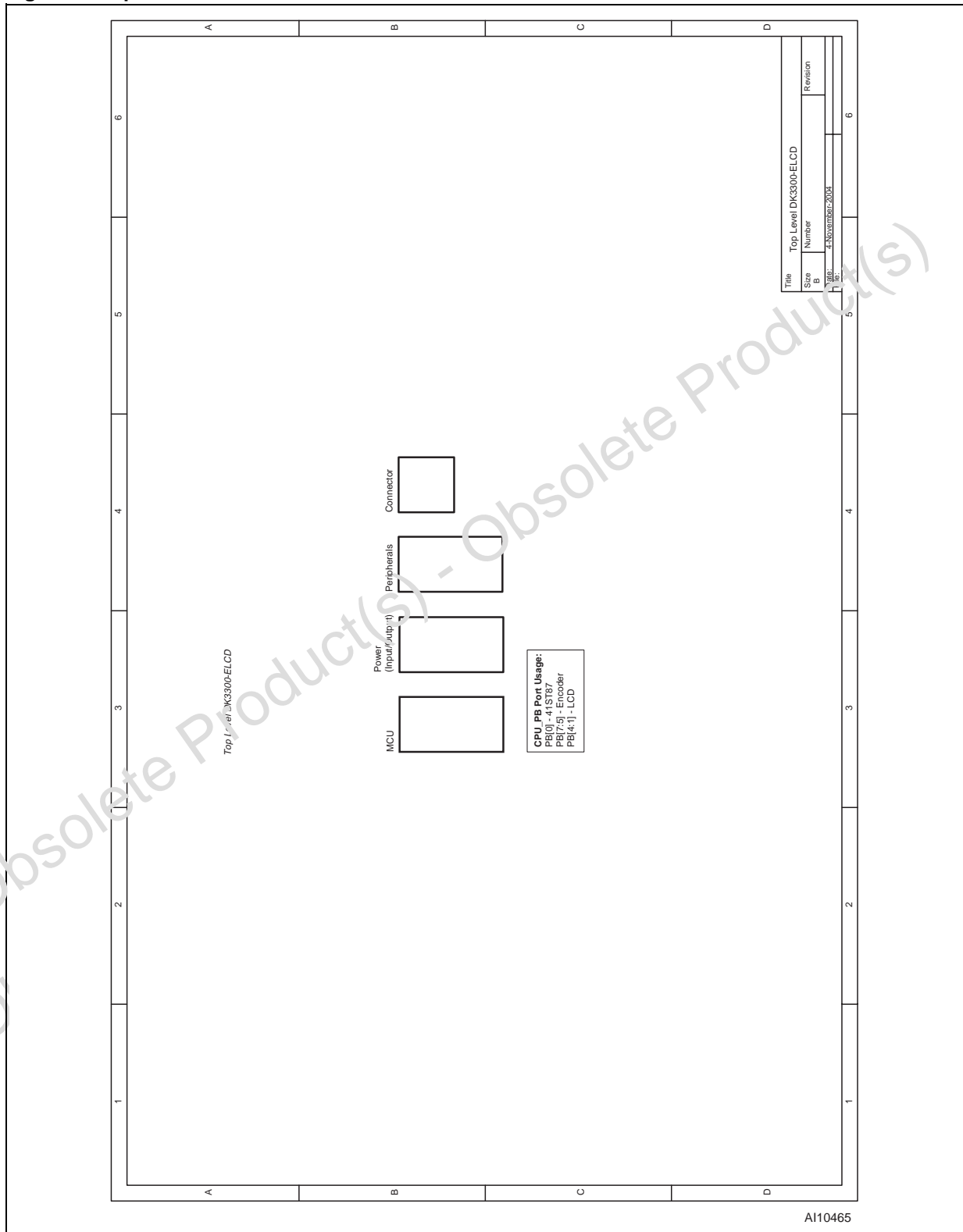
| Component                                                 | Link                                                                                                                                                                                            |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| uPSD3300 Product web page                                 | <a href="http://www.st.com/stonline/products/families/memories/psm/upsd3300.htm">http://www.st.com/stonline/products/families/memories/psm/upsd3300.htm</a>                                     |
| DK3300-ELCD Quick Start Guide                             | <a href="http://www.st.com/stonline/books/pdf/docs/10394.pdf">http://www.st.com/stonline/books/pdf/docs/10394.pdf</a>                                                                           |
| PSDsoft Express                                           | <a href="http://www.st.com/stonline/products/families/memories/psm/soft_c2.htm">http://www.st.com/stonline/products/families/memories/psm/soft_c2.htm</a>                                       |
| DK3300-ELCD Development Board (schematics) <sup>(1)</sup> | <a href="http://psmdev.st.com/DK3300-ELCD_schematics.zip">http://psmdev.st.com/DK3300-ELCD_schematics.zip</a>                                                                                   |
| uPSD3334D (populates the DK3300-ELCD Development Board)   | <a href="http://www.st.com/stonline/products/families/memories/psm/upsd33tb.htm">http://www.st.com/stonline/products/families/memories/psm/upsd33tb.htm</a>                                     |
| Keil ULINK USB-JTAG Adapter                               | <a href="http://www.keil.com/c51/">http://www.keil.com/c51/</a>                                                                                                                                 |
| Raisonance R-LINK-ST USB-JTAG Adapter                     | <a href="http://www.raisonance.com/">http://www.raisonance.com/</a>                                                                                                                             |
| Banking Example Code <sup>(1)</sup>                       | <a href="http://www.st.com/stonline/products/families/memories/psm/support/BANKING.zip">http://www.st.com/stonline/products/families/memories/psm/support/BANKING.zip</a>                       |
| EEPROM Emulation Example Code <sup>(1)</sup>              | <a href="http://www.st.com/stonline/products/families/memories/psm/support/EEPROM_EMUL.zip">http://www.st.com/stonline/products/families/memories/psm/support/EEPROM_EMUL.zip</a>               |
| I <sup>2</sup> C Example Code <sup>(1)</sup>              | <a href="http://www.st.com/stonline/products/families/memories/psm/support/I2C.zip">http://www.st.com/stonline/products/families/memories/psm/support/I2C.zip</a>                               |
| New DK3300 project Example Code <sup>(1)</sup>            | <a href="http://www.st.com/stonline/products/families/memories/psm/support/NEW_DK3300_PROJECT.zip">http://www.st.com/stonline/products/families/memories/psm/support/NEW_DK3300_PROJECT.zip</a> |
| Device Drivers <sup>(1)</sup>                             | <a href="http://www.st.com/stonline/products/families/memories/psm/support/dk33_dd.zip">http://www.st.com/stonline/products/families/memories/psm/support/dk33_dd.zip</a>                       |
| PWM Example Code <sup>(1)</sup>                           | <a href="http://www.st.com/stonline/products/families/memories/psm/support/PWM_ADC.zip">http://www.st.com/stonline/products/families/memories/psm/support/PWM_ADC.zip</a>                       |
| SPI Example Code <sup>(1)</sup>                           | <a href="http://www.st.com/stonline/products/families/memories/psm/support/SPI.zip">http://www.st.com/stonline/products/families/memories/psm/support/SPI.zip</a>                               |

Note: 1. This product is still valid; it just has the regular LCD. Schematics and sample code for this kit is available at [www.st.com/psm/](http://www.st.com/psm/).



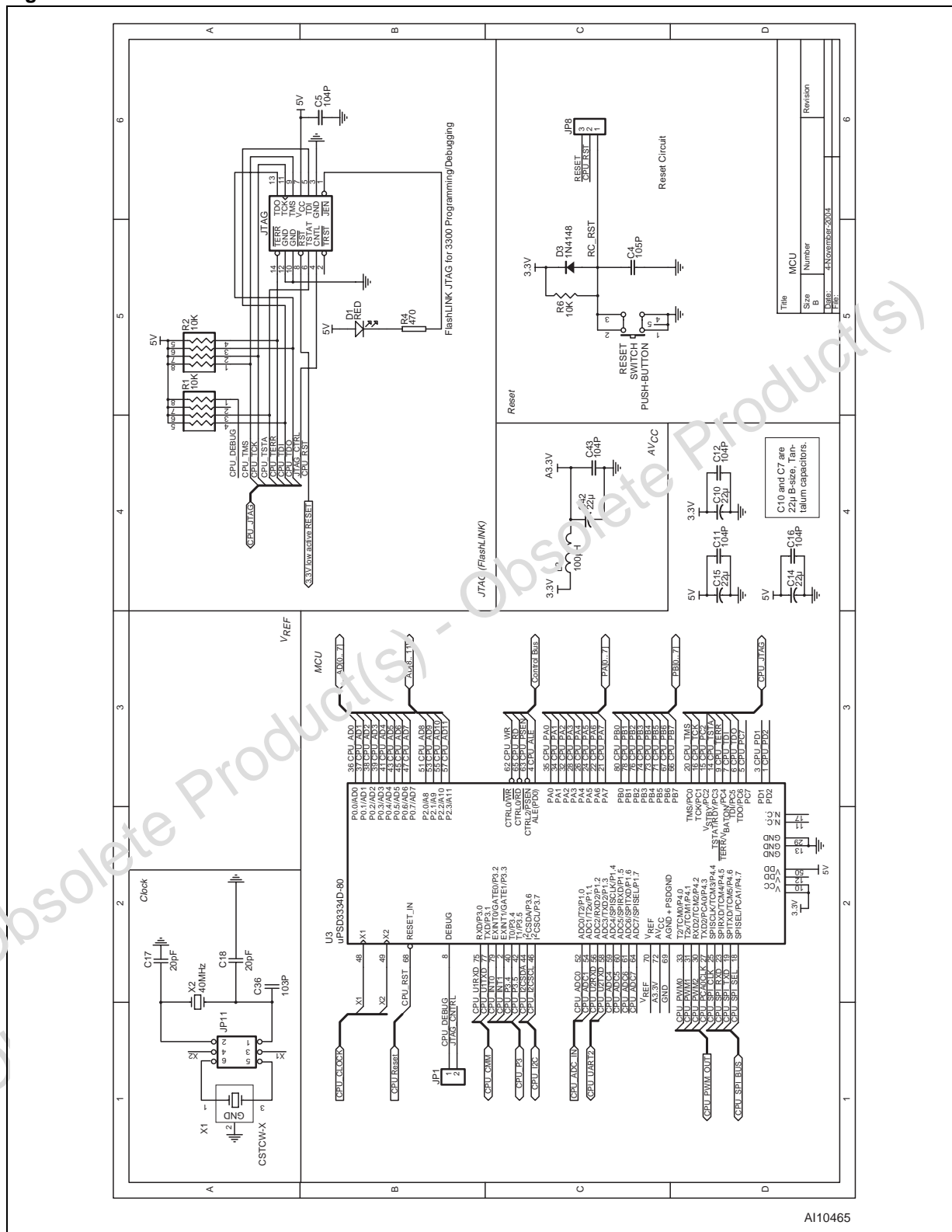
APPENDIX A. DK3300-ELCD SCHEMATICS

Figure 2. Top Level



# DK3300-ELCD - DEVELOPMENT KIT

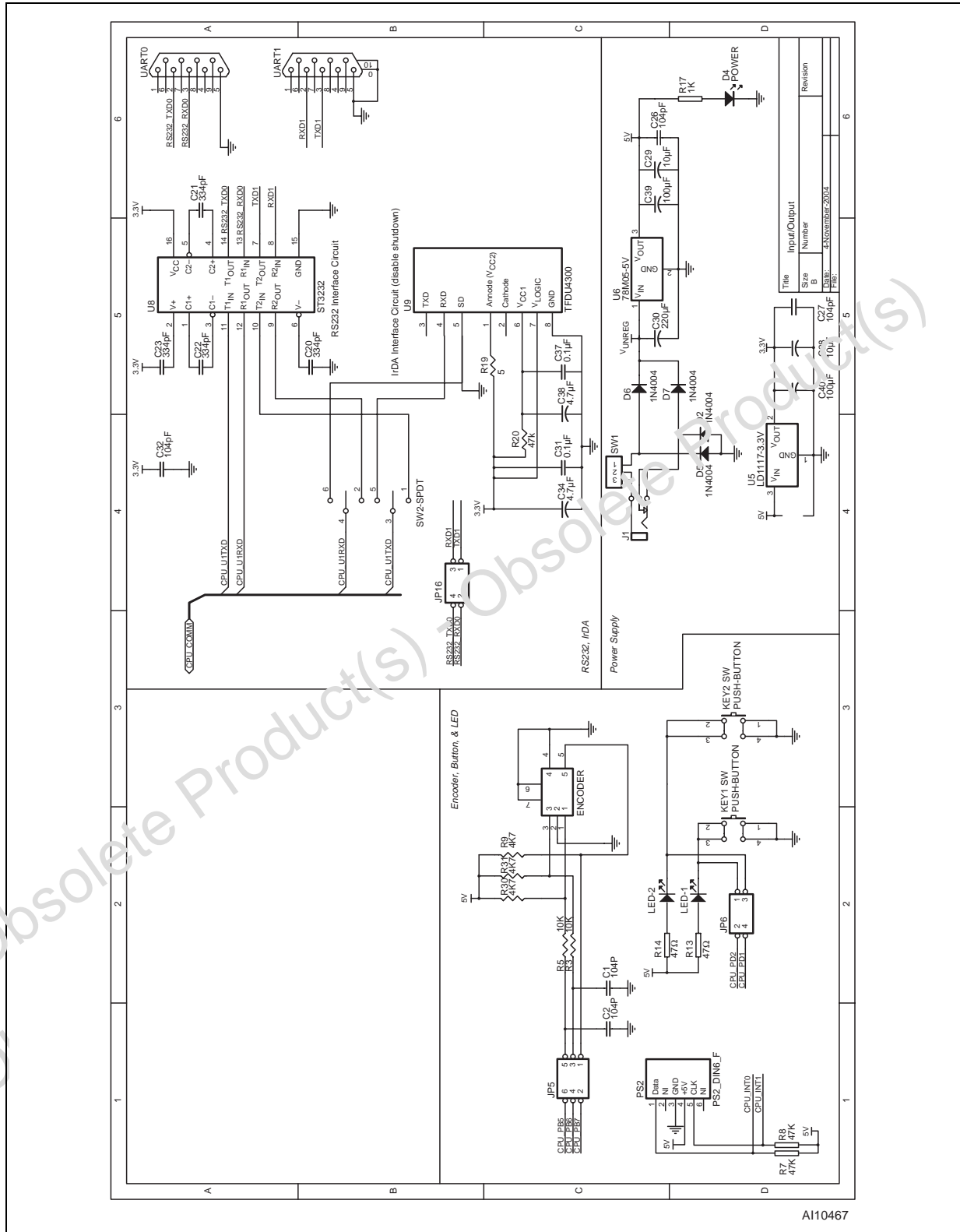
## Figure 3. MCU



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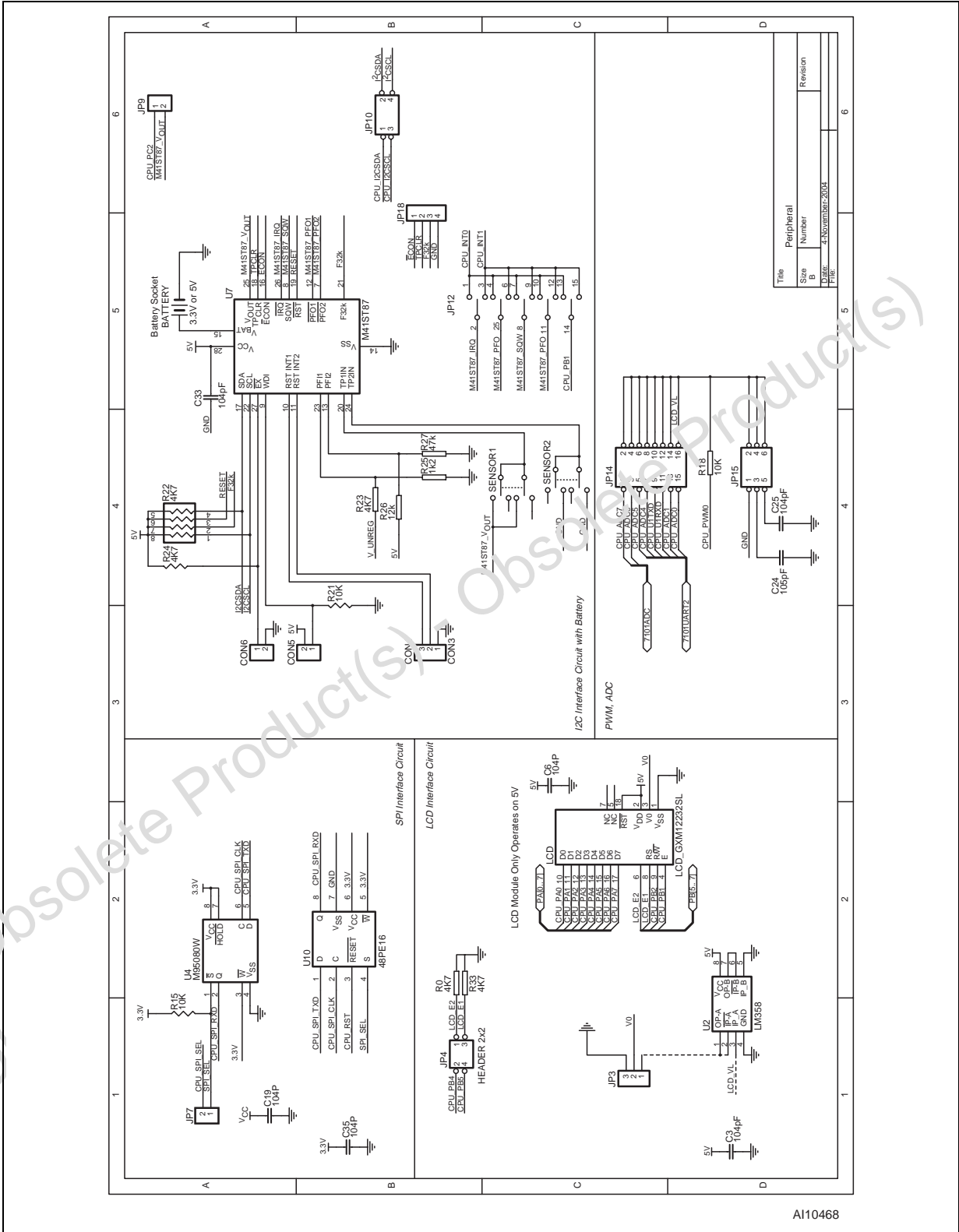


Figure 4. Power



# DK3300-ELCD - DEVELOPMENT KIT

Figure 5. Peripherals

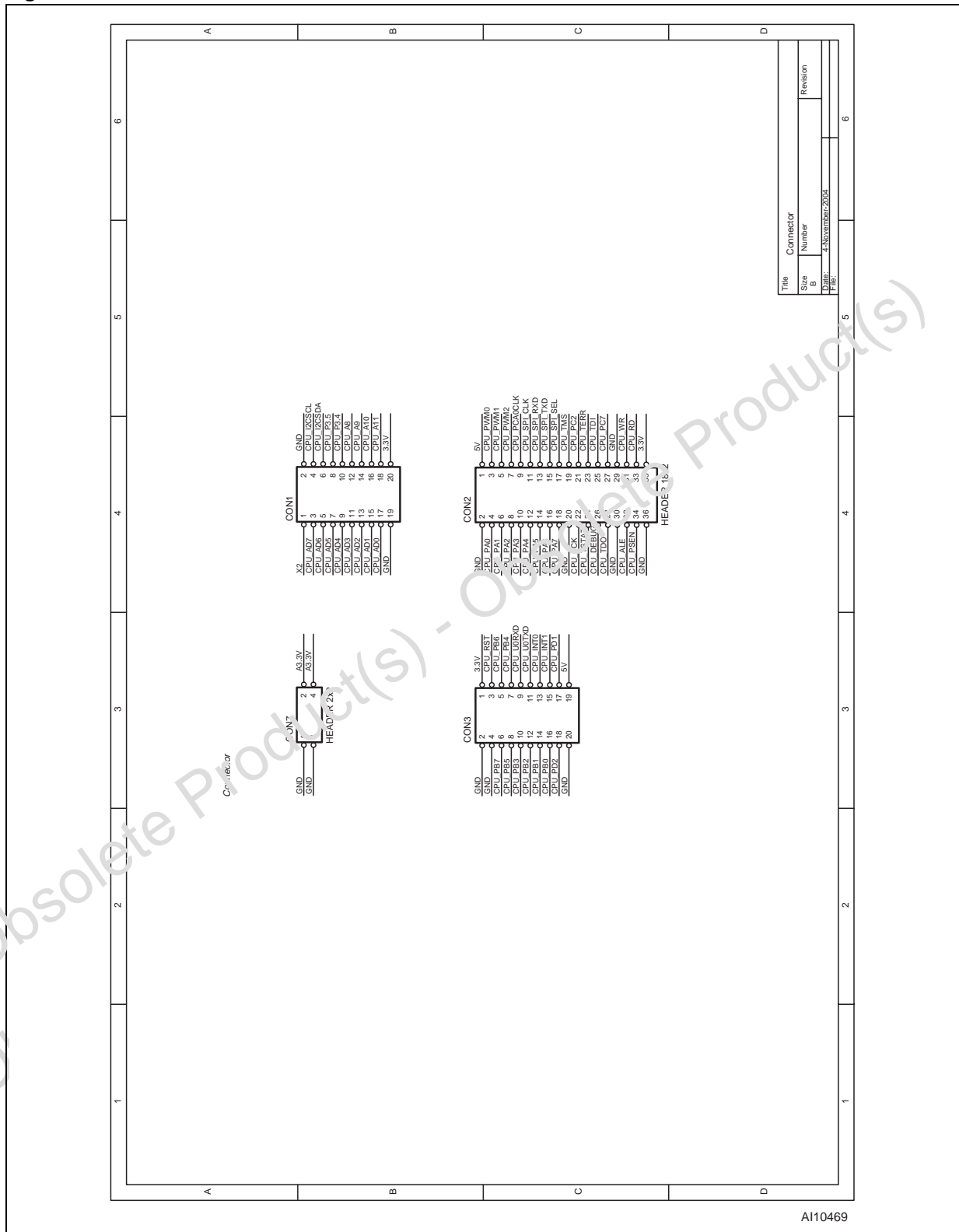


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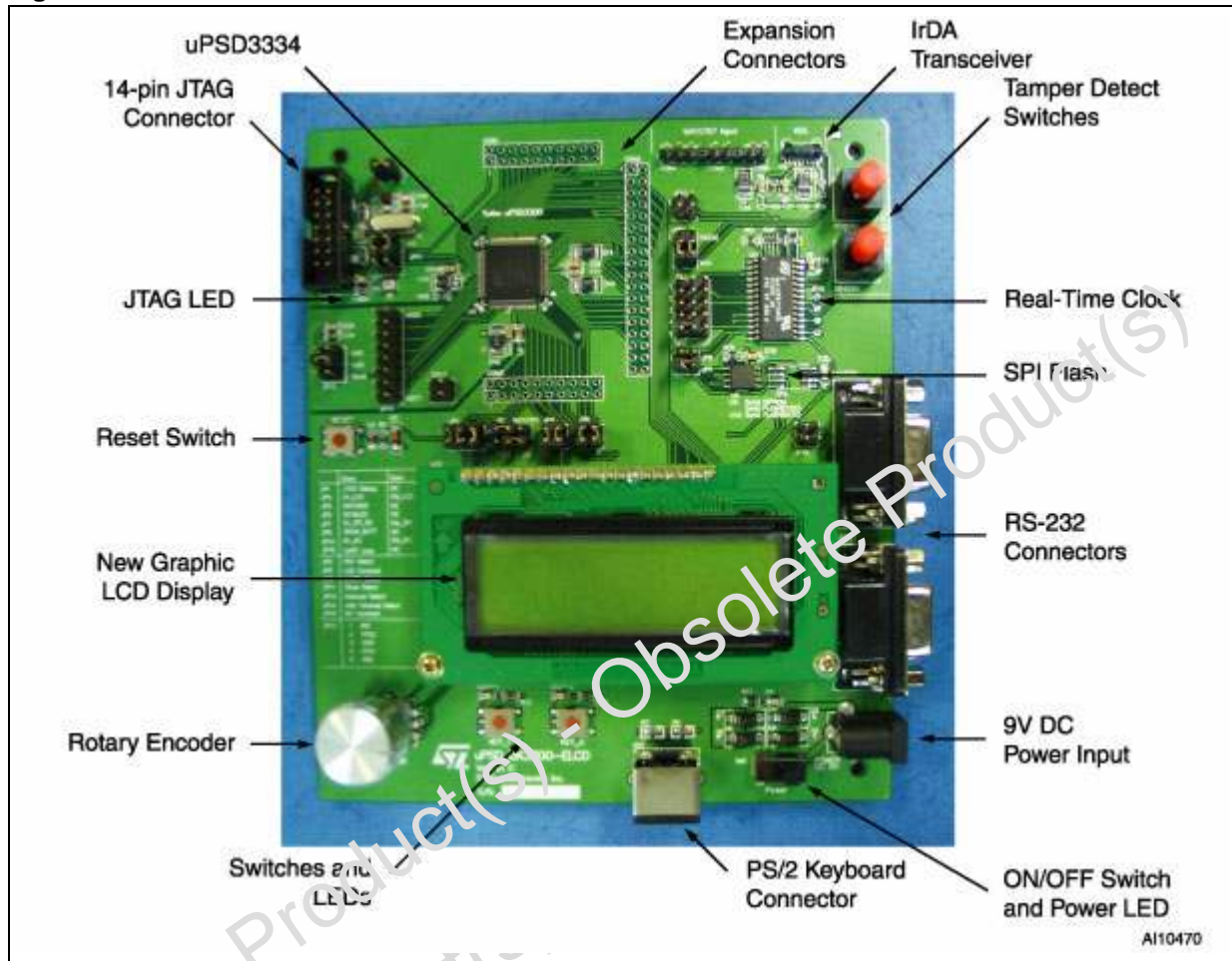


Figure 6. Connectors



APPENDIX B. DK3300-ELCD BOARD

Figure 7. DK3300-ELCD Board Connections



## APPENDIX C. DK3300-ELCD JUMPERS

The following Table describes the DK3300-ELCD Jumpers. Verify that in Jumper set *JP14 – ADC7* is “closed” and *JP3* is set to “Fix.” *JP5*, *JP4* and *JP6* Jumper sets are all “closed” for the PWMADC demonstration.

See the Schematics ([Figure 3.](#), [page 6](#), [Figure 4.](#), [page 7](#), [Figure 5.](#), [page 8](#), and [Figure 6.](#), [page 9](#)) for more information regarding the jumpers.

**Table 4. DK3300-ELCD Jumpers Selection and Defaults**

| Jumper Number | Description                                      | Default Settings                                             | Comments                                                                                                                             |
|---------------|--------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| JP1           | JTAGDebug I/O Pin                                | Closed                                                       | Should be Closed                                                                                                                     |
| JP2           | Reset Input Select                               | Closed in position 1-2 for Reset Switch                      | Position 2-3 for RTC Reset                                                                                                           |
| JP3           | LCD Contrast                                     | 2-3 Closed (Fix)                                             | Normally Closed in position 2-3; Position 1-2 used for PWM Control                                                                   |
| JP4           | Enhanced LCD                                     | Closed                                                       | Determines if Enhanced LCD in On-Board                                                                                               |
| JP5           | Encoder Connection                               | Normally all 3 Closed to enable Encoder                      | This connects Encoder to Port B.                                                                                                     |
| JP6           | Key board and LED                                | Closed                                                       |                                                                                                                                      |
| JP7           | Enable SPI                                       | Closed                                                       | Normally closed to enable SPI EEPROM                                                                                                 |
| JP8           | IrDA/UART1 Select                                | Normally 1-3 and 2-4; Closed to select the RS232 Connector 1 | Else can be set to position 3-5 and 4-6 to select the IrDA transceiver to be connected to UART1                                      |
| JP9           | SRAM Battery                                     | Normally Open                                                |                                                                                                                                      |
| JP10          | Enable I <sup>2</sup> C                          | Closed                                                       | Normally both positions closed to enable I2C access to RTC chip.                                                                     |
| JP11          | Clock Select                                     | Closed for Crystal                                           | Selects Crystal or Oscillator                                                                                                        |
| JP12          | Interrupt Select (for MCU)                       | Normally Open (See <a href="#">DK3300-ELCD SCHEMATICS</a> )  | (Used to map various RTC Interrupt sources to the MCU) 1-IRQ; 2-PFO2; 3-SQW; 4-PFO1; and 5-PBO                                       |
| JP14          | ADC Channel Select                               | ADC7 ( Positions 15-16) is Closed                            | ADC7 ( Positions 15-16) is Closed                                                                                                    |
| JP15          | PWM RC Constant                                  | Normally (position 1-2) is Closed                            | Selects PWM RC constant; position 1-2 is 1ms.                                                                                        |
| JP16          | For connecting UART0 and UART1 in loop back mode | Normally Open                                                | Can be connected positions 1-2 and 3-4 for loop back                                                                                 |
| JP18          | Headers for M41ST87 Signals                      | Normally not used                                            | Headers can be used to connect to check signals:<br>1 - E <sub>CON</sub><br>2 - TP <sub>CLR</sub><br>3 - F <sub>32k</sub><br>4 - GND |

## **REVISION HISTORY**

**Table 5. Document Revision History**

| <b>Date</b> | <b>Version</b> | <b>Description</b>                                                   |
|-------------|----------------|----------------------------------------------------------------------|
| 31-May-04   | 1.0            | First Edition - DK3300 (NND - Not for New Design)                    |
| 09-Dec-04   | 2.0            | New DK3300-ELCD features added (Figure 2, 3, 4, 5, 6; Table 1, 2, 3) |

Obsolete Product(s) - Obsolete Product(s)  
Obsolete Product(s) - Obsolete Product(s)

Obsolete Product(s) - Obsolete Product(s)

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