Encore!32™ Series

Development System

User Manual

UM022202-1108

Revision History

Each instance in Revision History reflects a change to this document from its previous revision. For more details, refer to the corresponding pages and appropriate links in the table below.

Date	Revision Level	Description	Page Number
November 2008	02	Updated Figure 1, Figure 2, Figure 3, Schematics and Encore!32™ Application Board sections (Figure 5 through Figure 18).	2, 5, 6, 12, 19
September 2008	01	Original issue.	All

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Introduction

Zilog's Encore!32™ Series Development kit provides a complete hardware platform for developing different applications using the ARM-based Encore!32 Series Application Specific Standard Product (ASSP). This user manual provides information on Encore!32 ASSP Development Kit hardware.

This manual acquaints you with the Zilog's Encore!32 Series Development Kit, and provides instructions on setting up the hardware to start building designs and applications. For more information, refer to *Encore!32™ Series Microcontroller (Z32AN) Data Sheet (DS0200)*.

Safeguards

The following precaution must be observed when working with the devices described in this document.

Caution: *Always use a grounding strap to prevent damage resulting from electrostatic discharge (ESD).*

Figure 1 displays the Encore!32 Series development board.

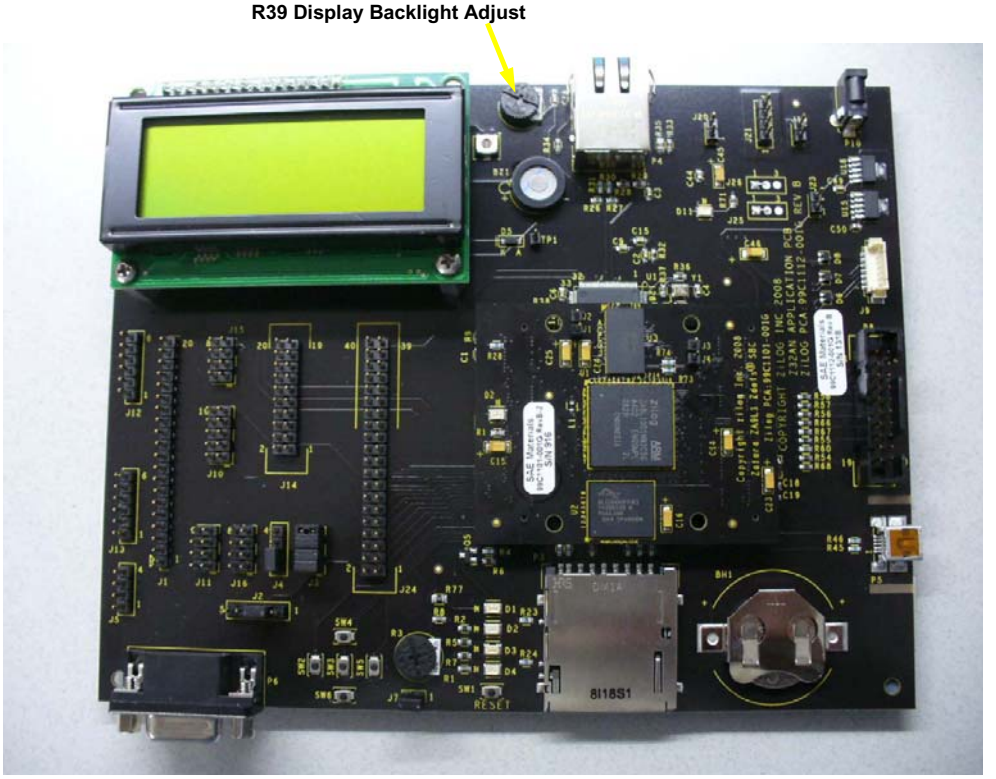

Figure 1. Encore!32™ Series Development Board

Kit Contents

The Encore!32 ASSP Development Kit consists of the following:

- Encore!32 module (part number Z32AN000100SBCG)
- Encore!32 Series application board

- 5 V DC power supply
- Serial Cable, RS-232
- USB Cable, Type-A (male) to Mini-B
- CDROM, Development Kit Tools and Documentation
- CDROM, Development Kit Tutorial
- Signum Systems JTAGjet-ARM Emulator (optional)

Ordering Information

The Encore!32 Series has several development kits available. Table 1 lists the part numbers of Encore!32 development kits.

Table 1. Z32AN Encore!32 Development Tools

Part Number	Description	Device Compatibility
Z32AN000100ZABG	Encore!32 series reference design kit contains the Encore!32 module (processor, 8 Mb x 16 Asynchronous Flash Memory, 16 Mb x 16 SDRAM), application board (USB, SDIO, LCD, Ethernet), and full Board Support Package (BSP) and ported Linux development platform.	All Encore!32 series device
Z32AN000100ZEMG	Encore!32 series reference design kit contains the Encore!32 module (processor, 8 Mb x 16 Asynchronous Flash Memory, 16 Mb x 16 SDRAM), application board (USB, SDIO, LCD, Ethernet), and full BSP and ported Linux development platform. This kit includes Signum emulator.	All Encore!32 series device

Encore!32™ Module

The Encore!32 module is a small Single Board Computer (SBC) that is included in every Encore!32 series development kit. The module includes the Encore!32 Z32AN processor, 8 Mb x 16 Asynchronous Flash Memory, 16 Mb x 16 SDRAM. The module also has standard high quality connectors and can be designed into ready-for-production systems.

This module along with the Encore!32 series application board establishes the hardware platform which is used to evaluate the features of the Encore!32 series and to develop the applications prior to the hardware design.

Module Feature

Key components of Encore!32 module include:

- Encore!32 Z32AN processor (ARM 9)
- 8 Mb x 16 Asynchronous Flash Memory
- 16 Mb x 16 SDRAM
- 24 MHz Crystal for main on-chip oscillator
- 32 kHz Real-time clock (RTC) on-chip oscillator
- Application board interface connectors P1 and P2

Figure 2 displays the top view of the Encore!32 module.

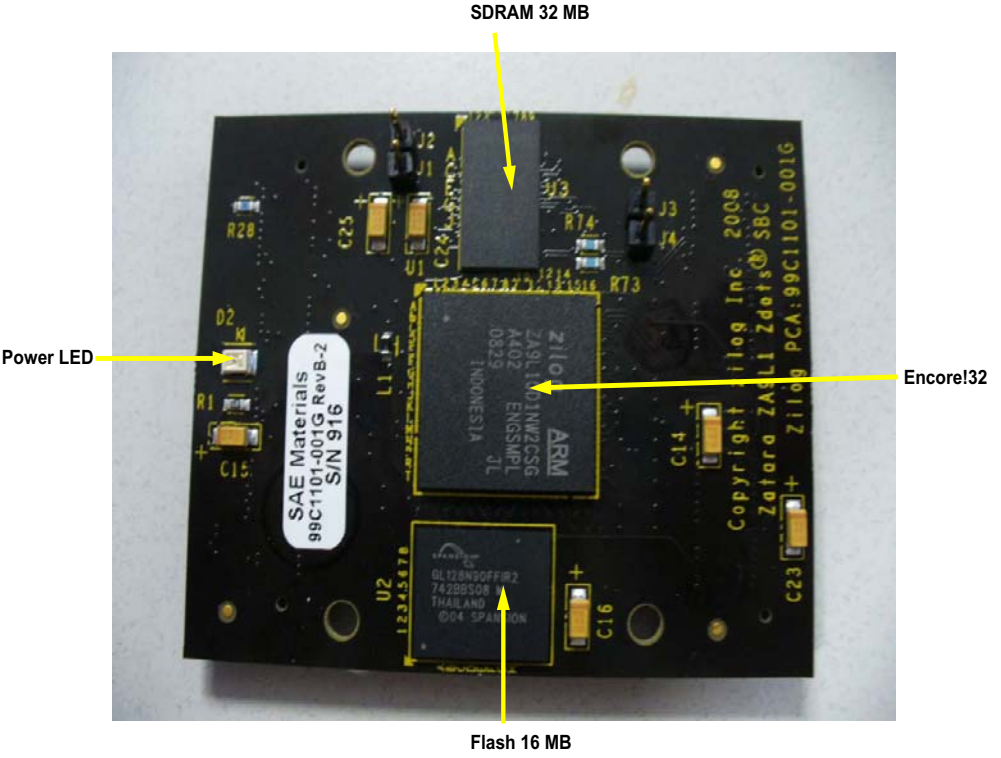

Figure 2. Encore!32™ Module (Top View)

Figure 3 displays the bottom view of the Encore!32 module.

P1 and P2
Interface to the application board

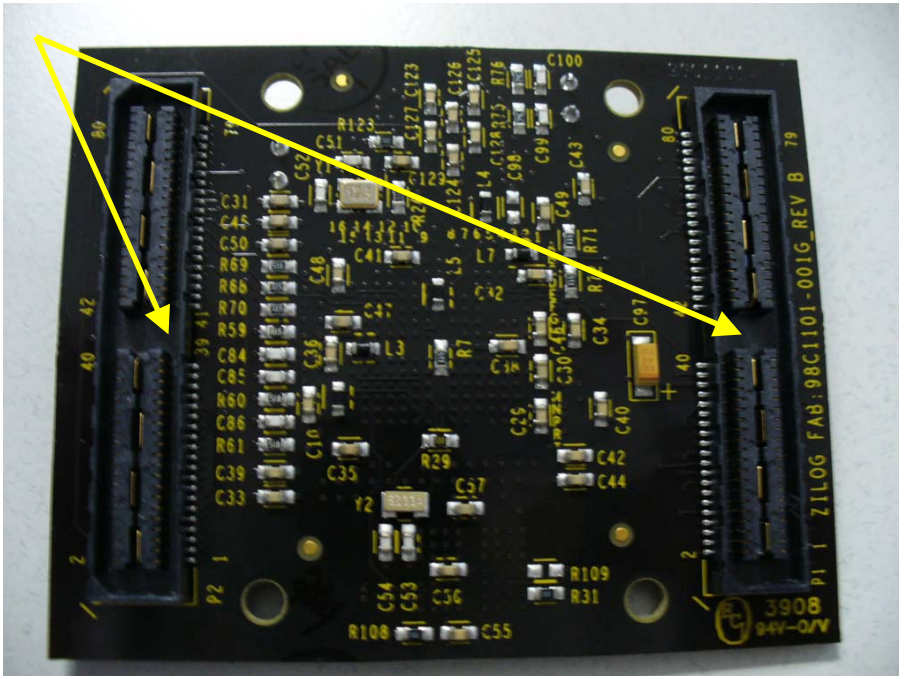

Figure 3. Encore!32™ Module (Bottom View)

Encore!32™ Application Board

The hardware platform for the Encore!32 development kit includes an application board which supports the Encore!32 module. The application board provides easy access to all test points, and interfaces to popular controllers and connectors in embedded markets.

Features

Key features of Encore!32 Application Board include:

- Encore!32 Module interface
- 4 x 20 Character LCD display
- Interface for optional graphic LCD
- Six Push buttons
- Secure Digital (SD) card connector
- 10/100T Ethernet controller
- USB OTG 2.0 Mini-AB connector
- Buzzer
- RS-232 DB9 female connector and two 1 x 6 RS-232 headers
- Expansion header—Data/Address/Control bus
- SPI port header

Figure 4 displays the top view of the Encore!32 application board.

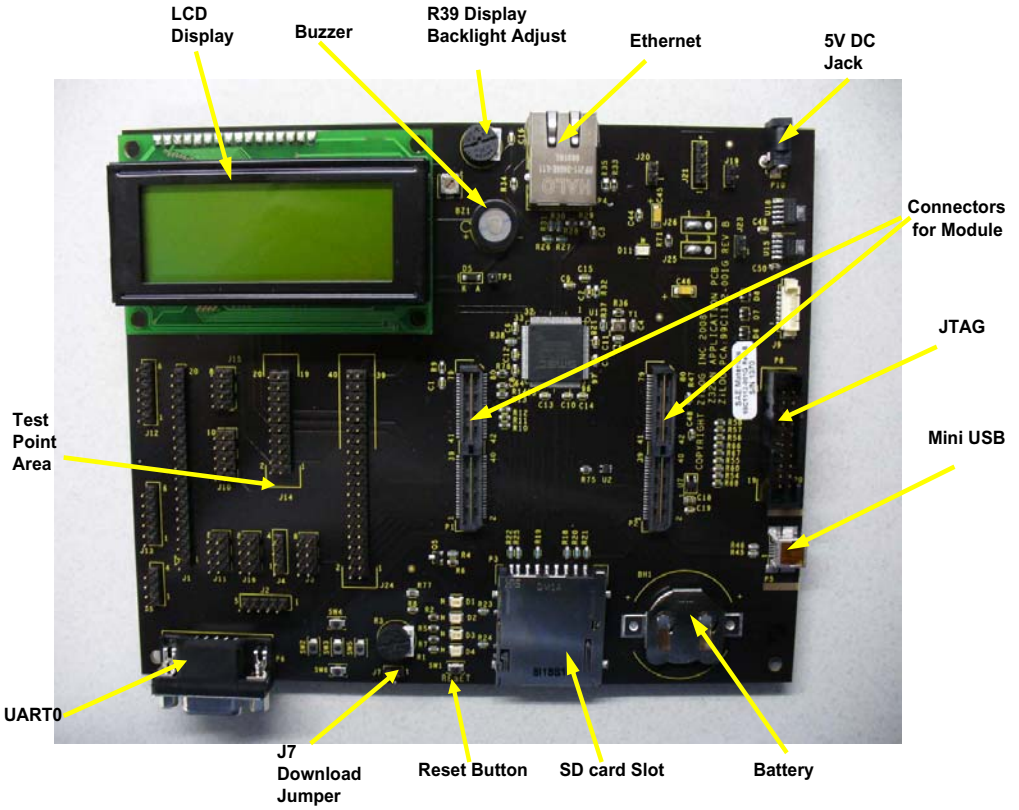

Figure 4. Encore!32™ Application Board (Top View)

Encore!32™ Application Board Jumpers and Test points Settings

For position of the jumpers and test points, see Schematics on page 12. Table 2 lists the Shunt Settings for the Encore!32 Application Board.

Table 2. Encore!32 Application Board Shunt Settings

Jumpers and Test points	Function	Settings
J1	GPIOs Test point	
J2	ADC Internal/External Input select	2–3: Internal (Default)
		3–4: External
J3	ADC Channel Select	1–2: Input1 (Default)
		3–4: Input2
		5–6: Input3
		7–8: Input4
J4	ADC VRef Internal/External select	1–2: Internal 3.3 V (Default)
		2–3: External
J5	PWM Outputs connector	
J7	Download Select Jumper	IN: Boot From Flash (Default)
		OUT: Boot from UART0 (P6)
J8	Graphic Interface header	For recommended Graphic, see Schematics on page 25.
J9	Mag Head connector	
J10	Chip Selects Test Points	
J11	Modem signals connector	

Table 2. Encore!32 Application Board Shunt Settings (Continued)

Jumpers and Test points	Function	Settings
J12	UART1 header	
J13	UART2 header	
J14	SMART card expansion connector	
J15	External DMA connector	
J16	SPI 1 Connector	
J19	5 V Test Point	
J20	3.3 V Test Point	
J21	Ground Test Point	
J22	Monochrome 4 x 20 Character header	For recommended LCD display, see Schematics on page 25.
J23	1.8 V Test Point	
J24	Data and address bus Test Points	
P1	Connector for module Connection	
P2	Connector for module Connection	
P3	SD Card socket	Note: Any 64M SD memory card, up to 2 GB is supported.
P4	Ethernet Jack	
P5	USB mini AB socket	
P6	UART0 Female DB9 connector	
P8	JTAG connector	

Table 2. Encore!32 Application Board Shunt Settings (Continued)

Jumpers and Test points	Function	Settings
P10	5 V DC Input Jack	
SW1	Reset button	
SW2, 3, 4, 5, 6	Push Buttons on the GPIOs	
BZ1	Buzzer	
R39	Backlight adjust of Text Display	
R42	Backlight adjust of graphical Display	
R3	ADC variable Input potentiometer	
D11	3.3 V Indicator	
D1, 2, 3, 4	General Purpose LEDs	
TP1	Ethernet ARDY Test point	
BH1	3.0 Lithium Battery and Holder	Recommended battery is CR2025

Installation

Follow the instructions in the Quick Start Guide for software installation and setup of the Zilog's Encore!32 Development Kit.

Schematics

This chapter provides schematics for the Encore!32 Module and the Encore!32 Application board.

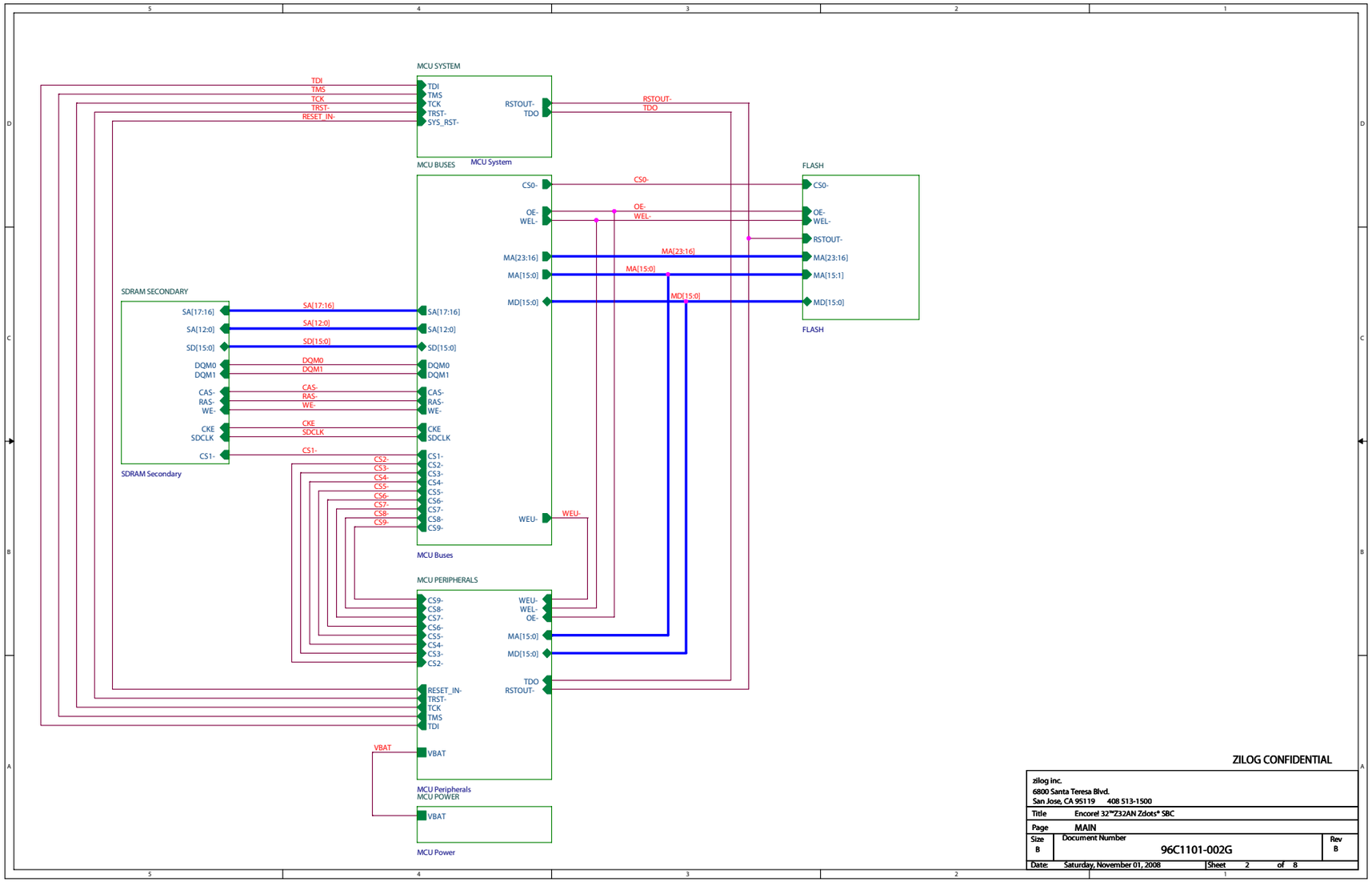

Figure 5. Encore!32™ Module Schematic (1 of 7)

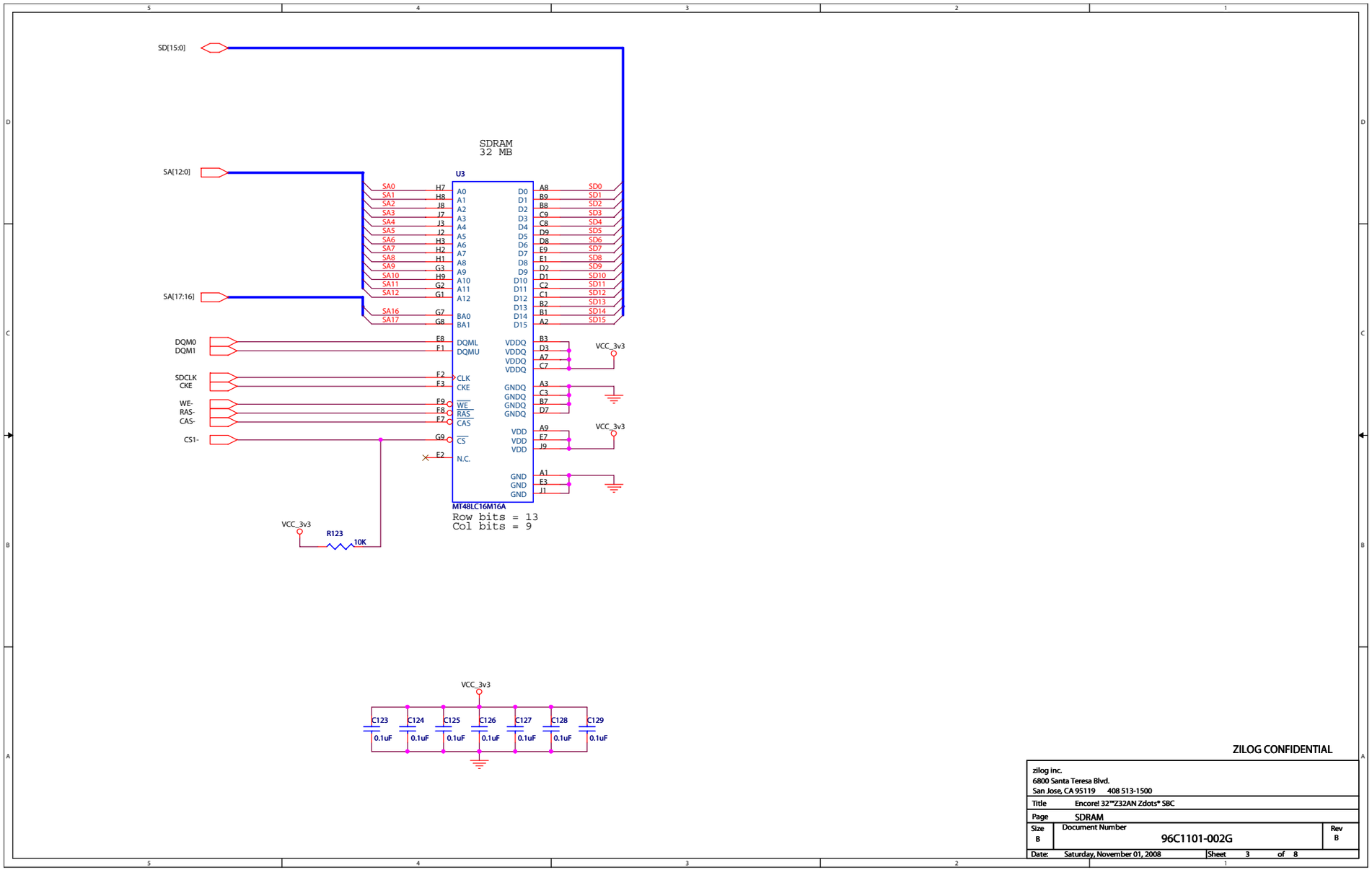

Figure 6. Encore!32™ Module Schematic (2 of 7)

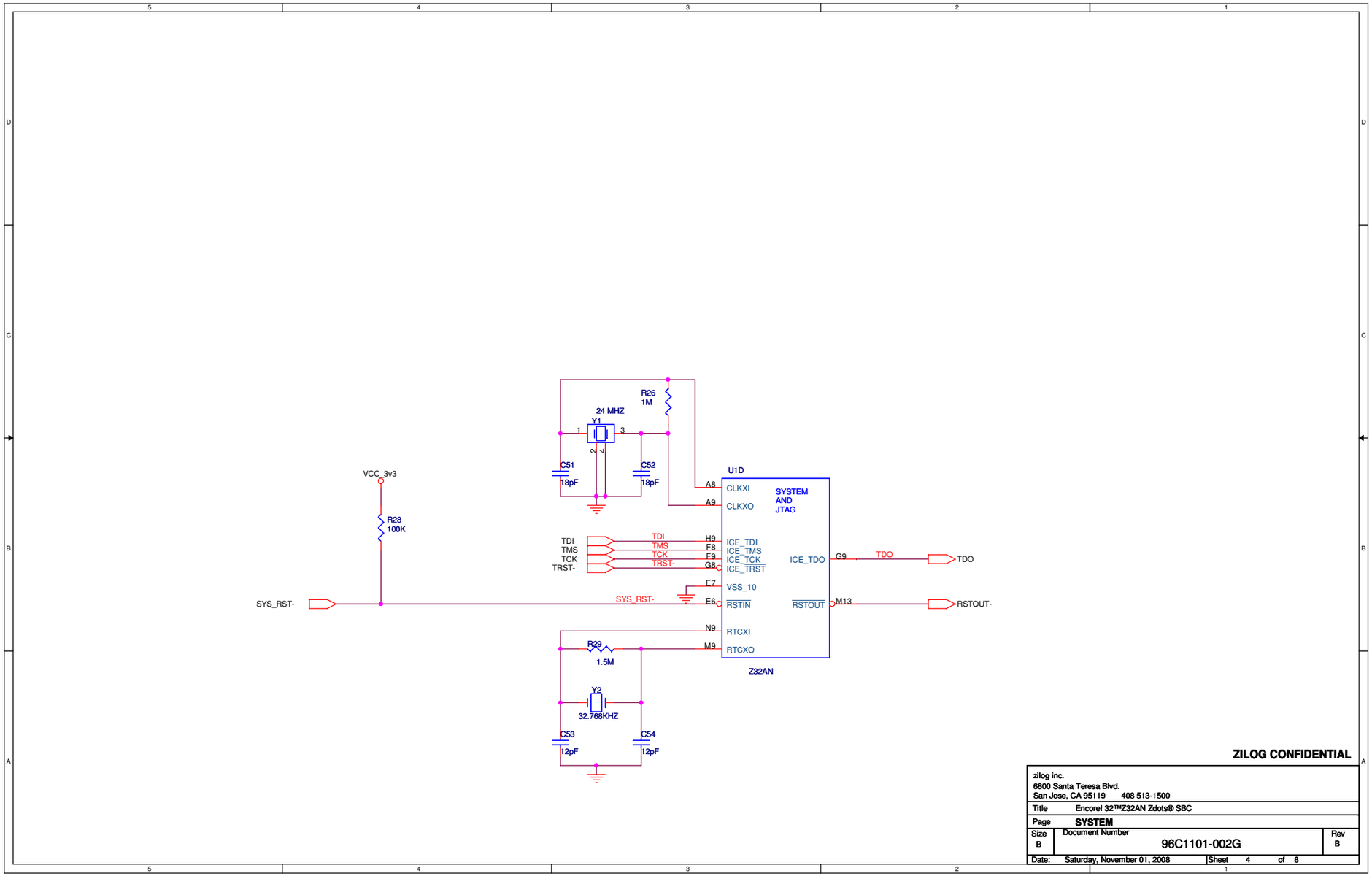

Figure 7. Encore!32™ Module Schematic (3 of 7)

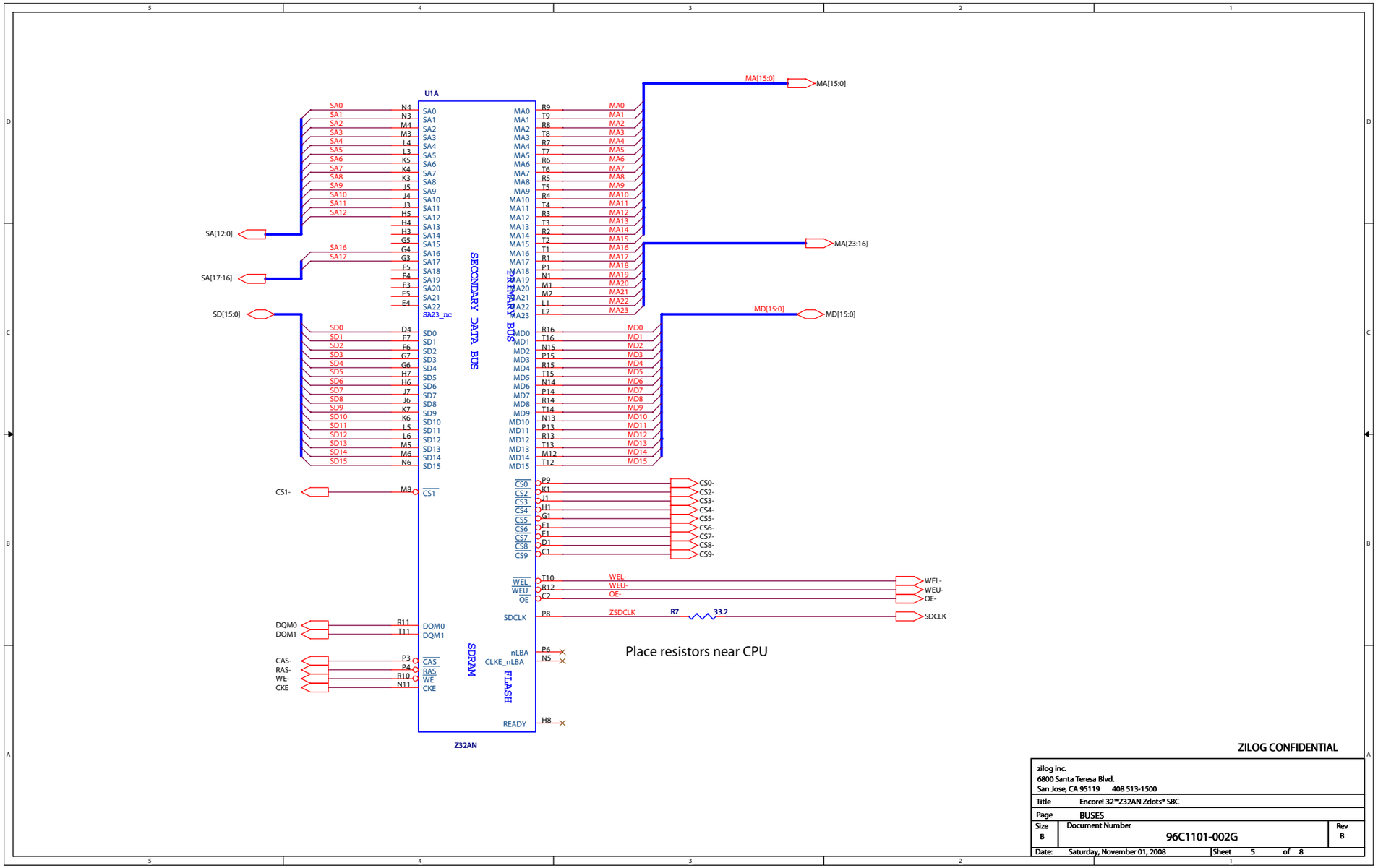

Figure 8. Encore!32™ Module Schematic (4 of 7)

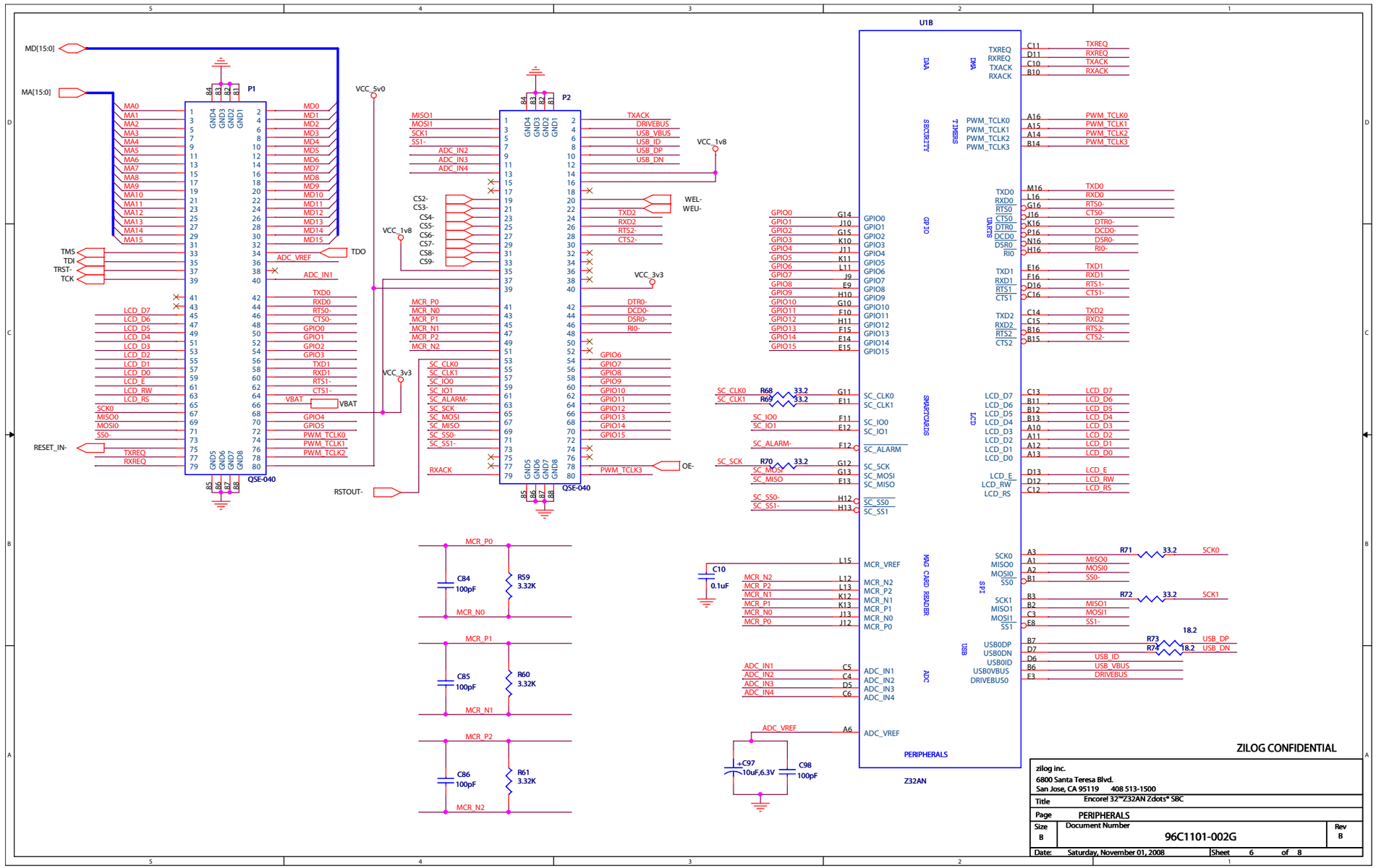

Figure 9. Encore!32™ Module Schematic (5 of 7)

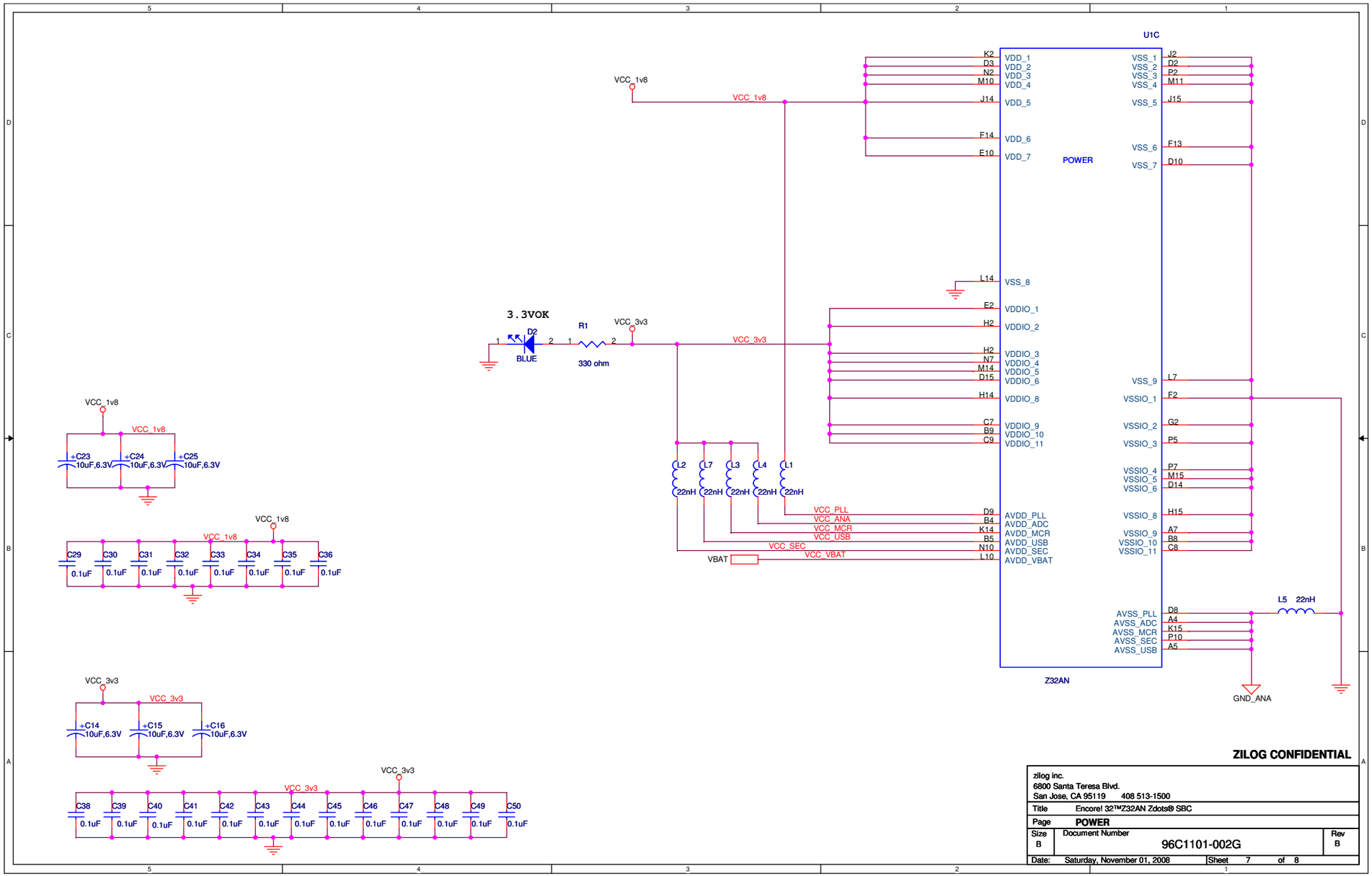

Figure 10. Encore!32™ Module Schematic (6 of 7)

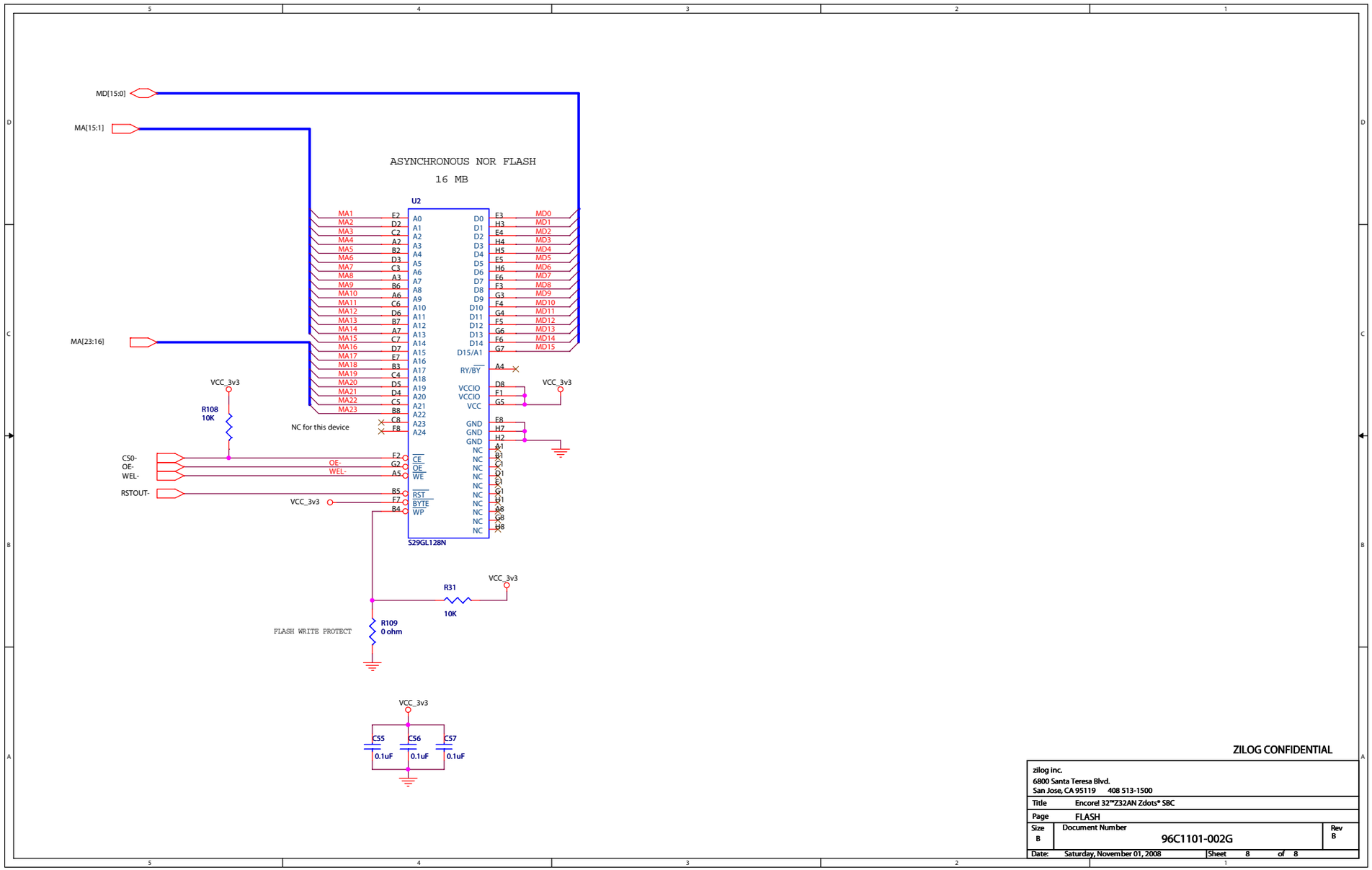

Figure 11. Encore!32™ Module Schematic (7 of 7)

Encore!32™ Application Board

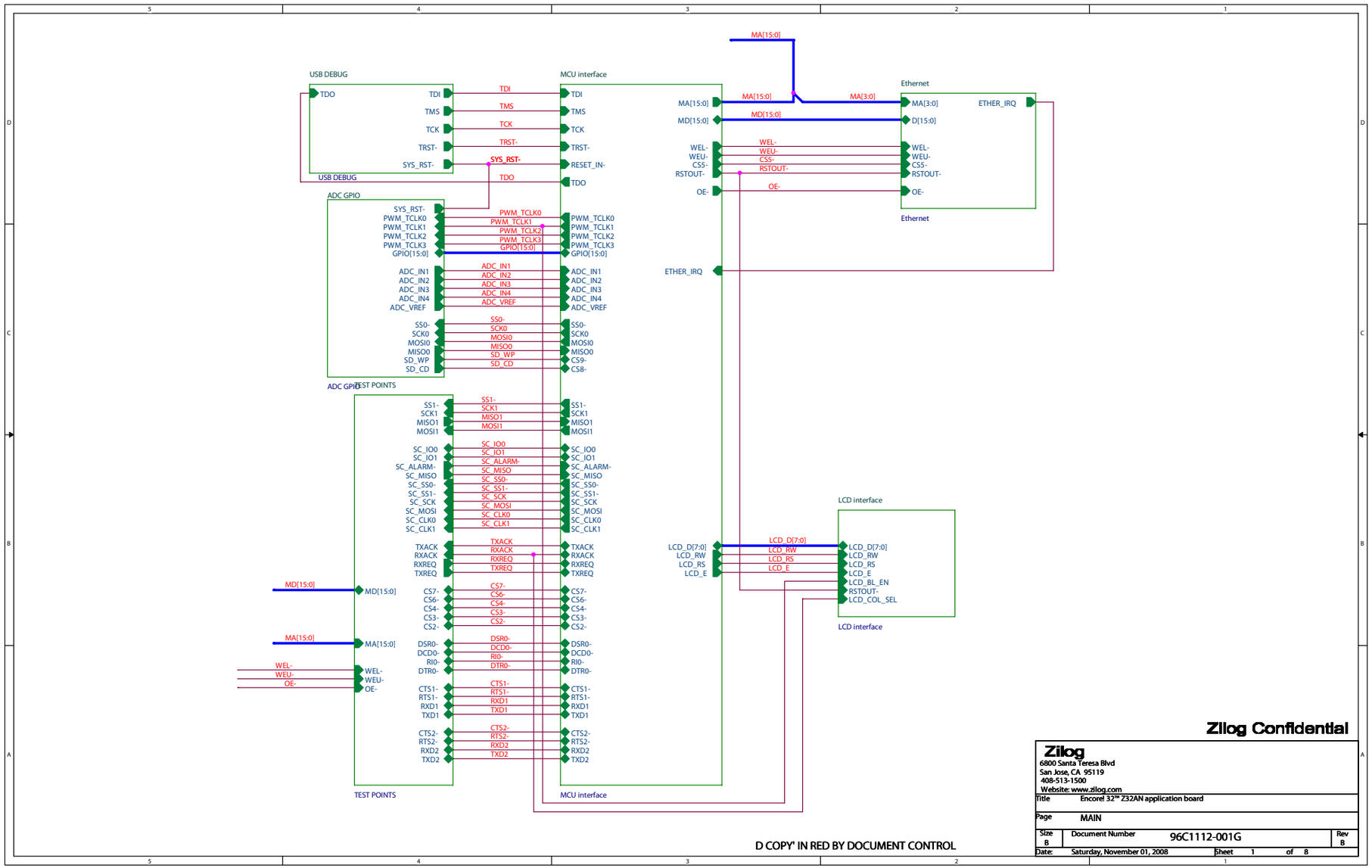

Figure 12. Encore!32™ Application Board Schematic (1 of 7)

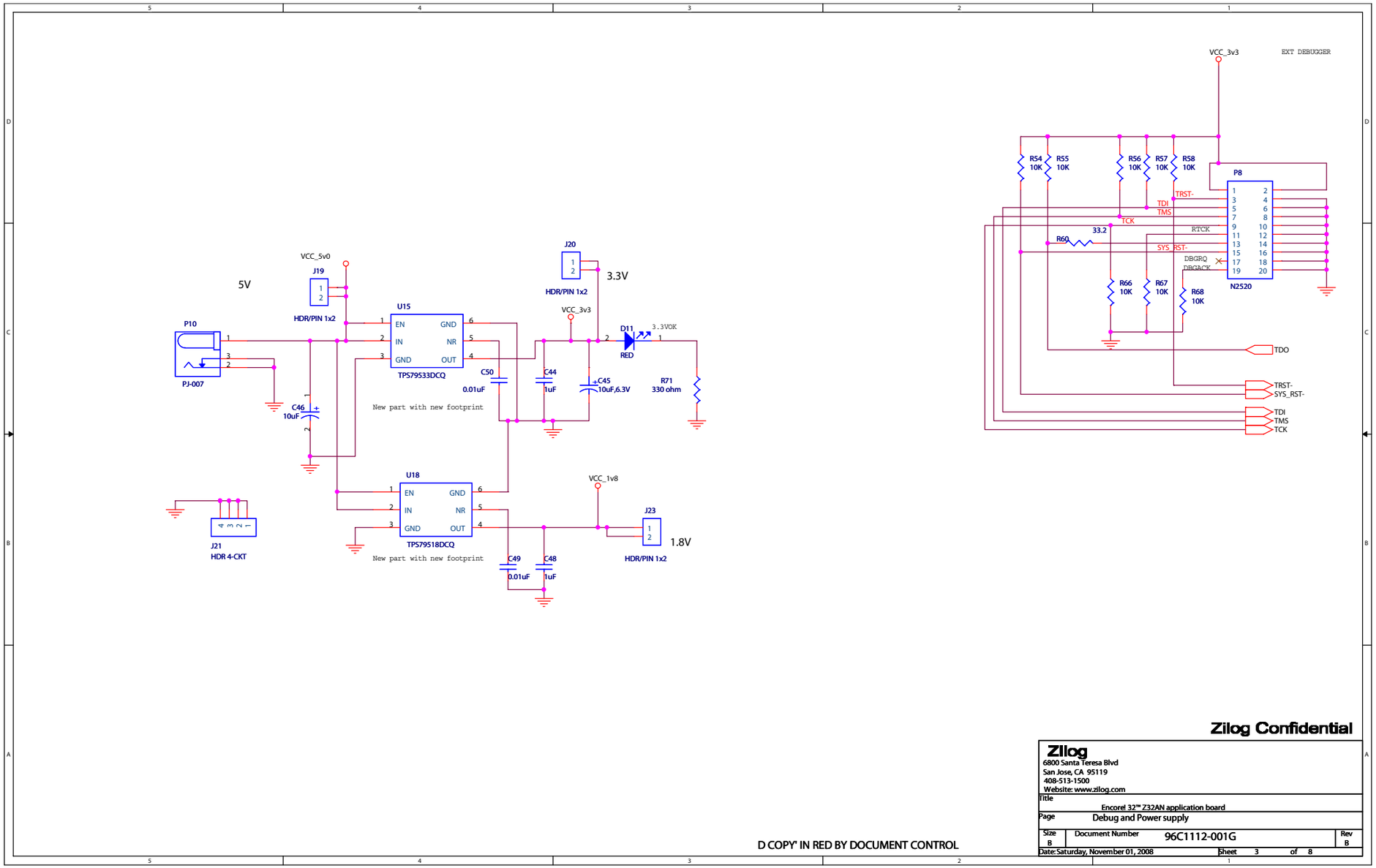

Figure 13. Encore!32™ Application Board Schematic (2 of 7)

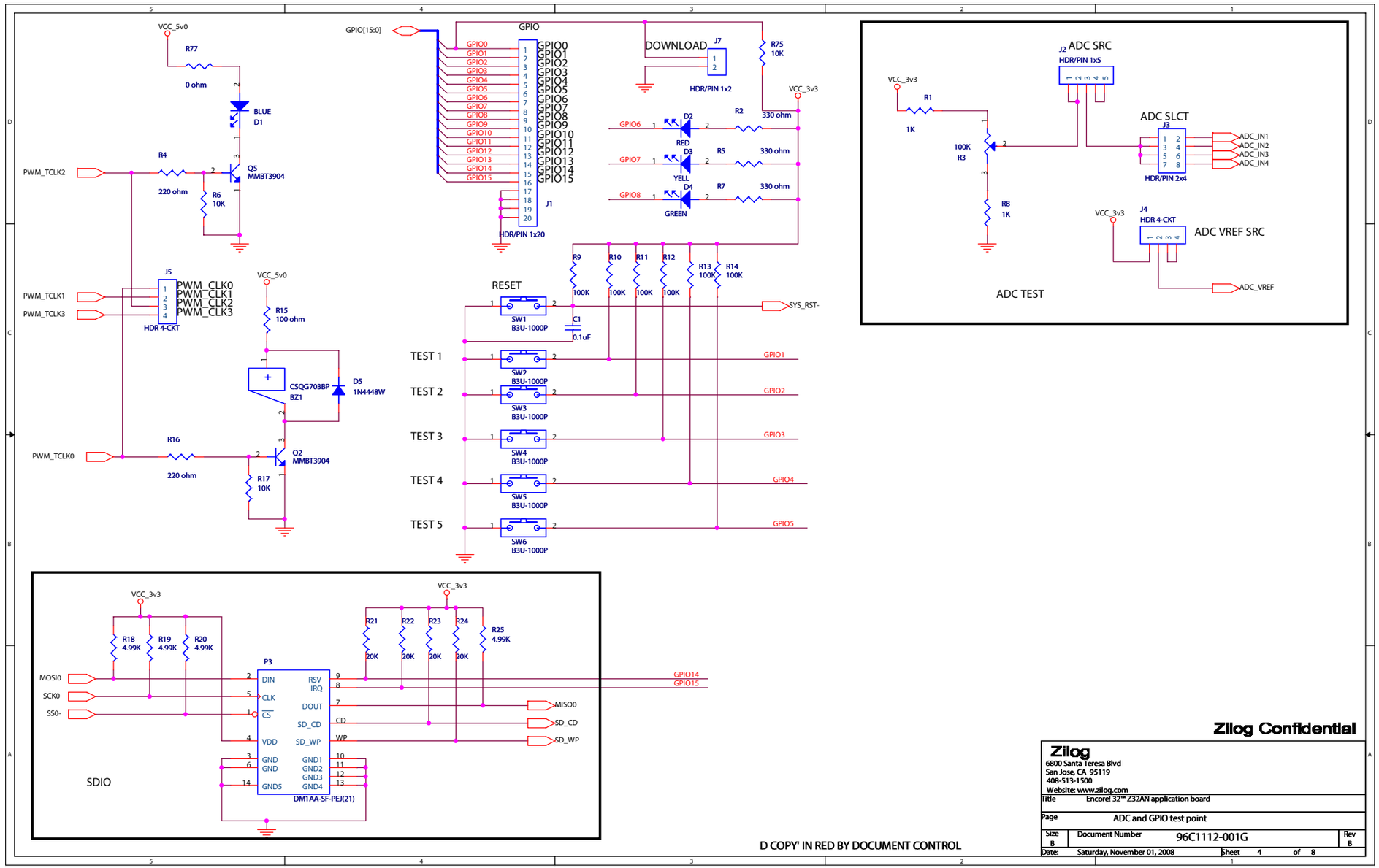

Figure 14. Encore!32™ Application Board Schematic (3 of 7)

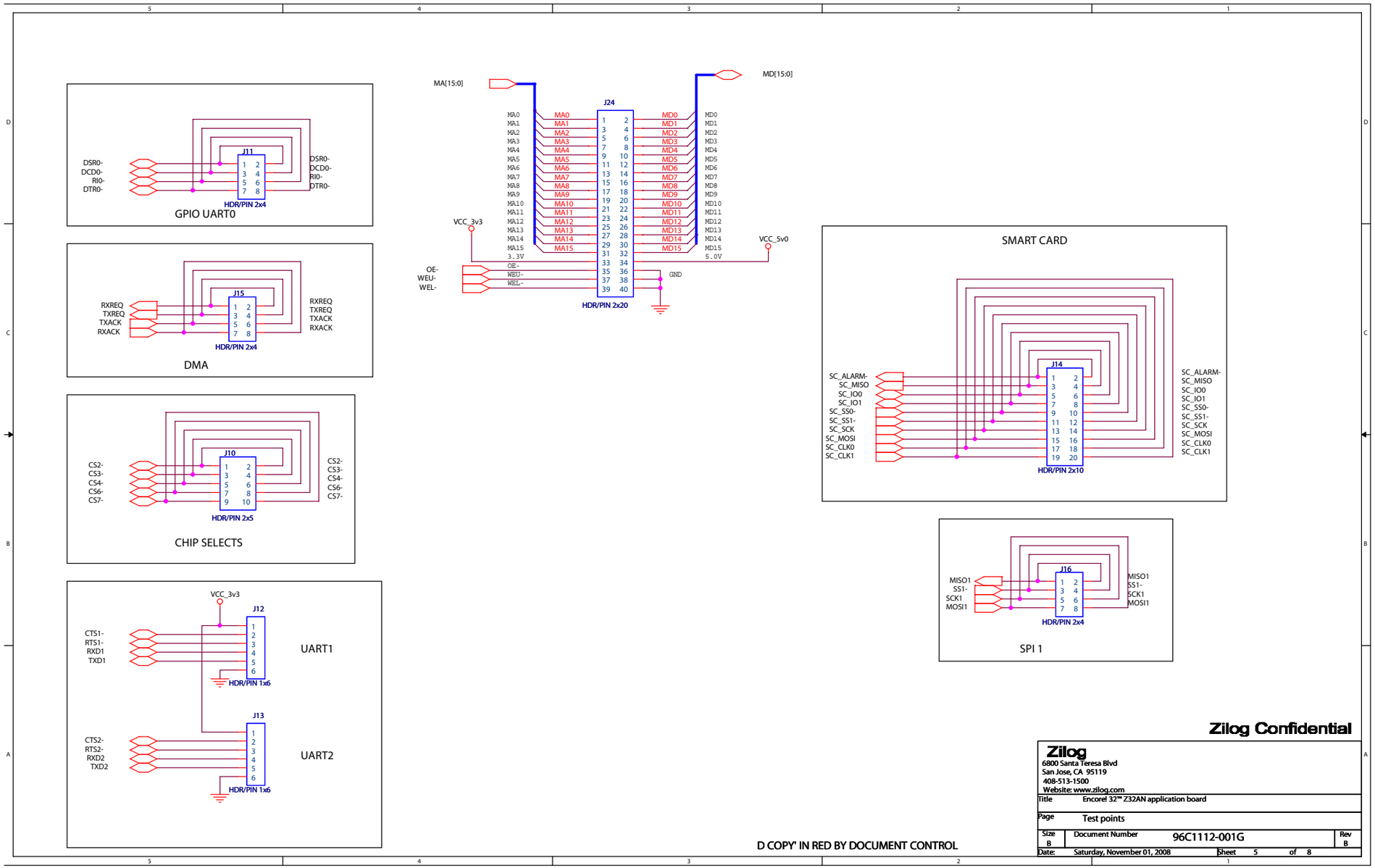

Figure 15. Encore!32™ Application Board Schematic (4 of 7)

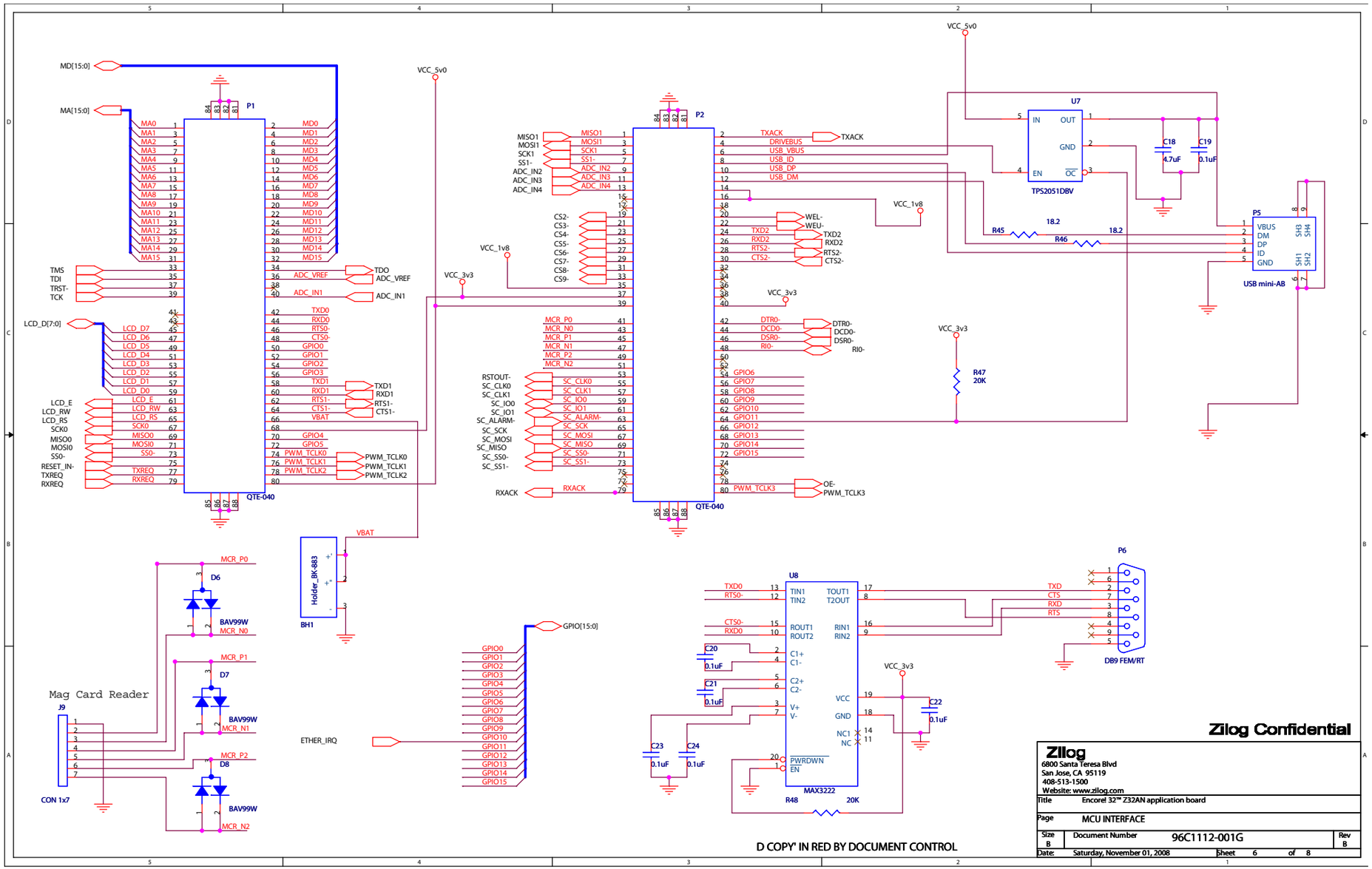

Figure 16. Encore!32™ Application Board Schematic (5 of 7)

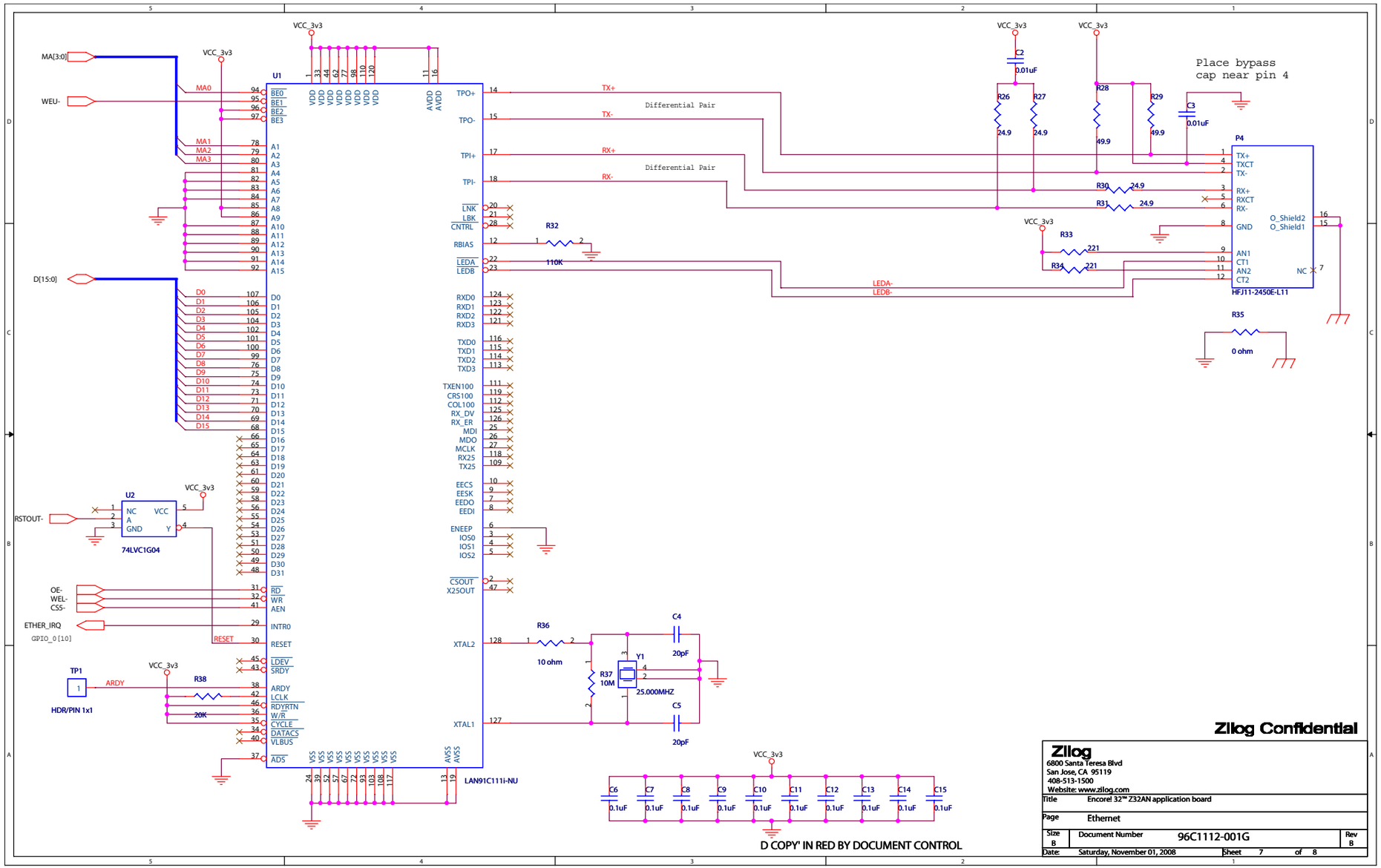

Figure 17. Encore!32™ Application Board Schematic (6 of 7)

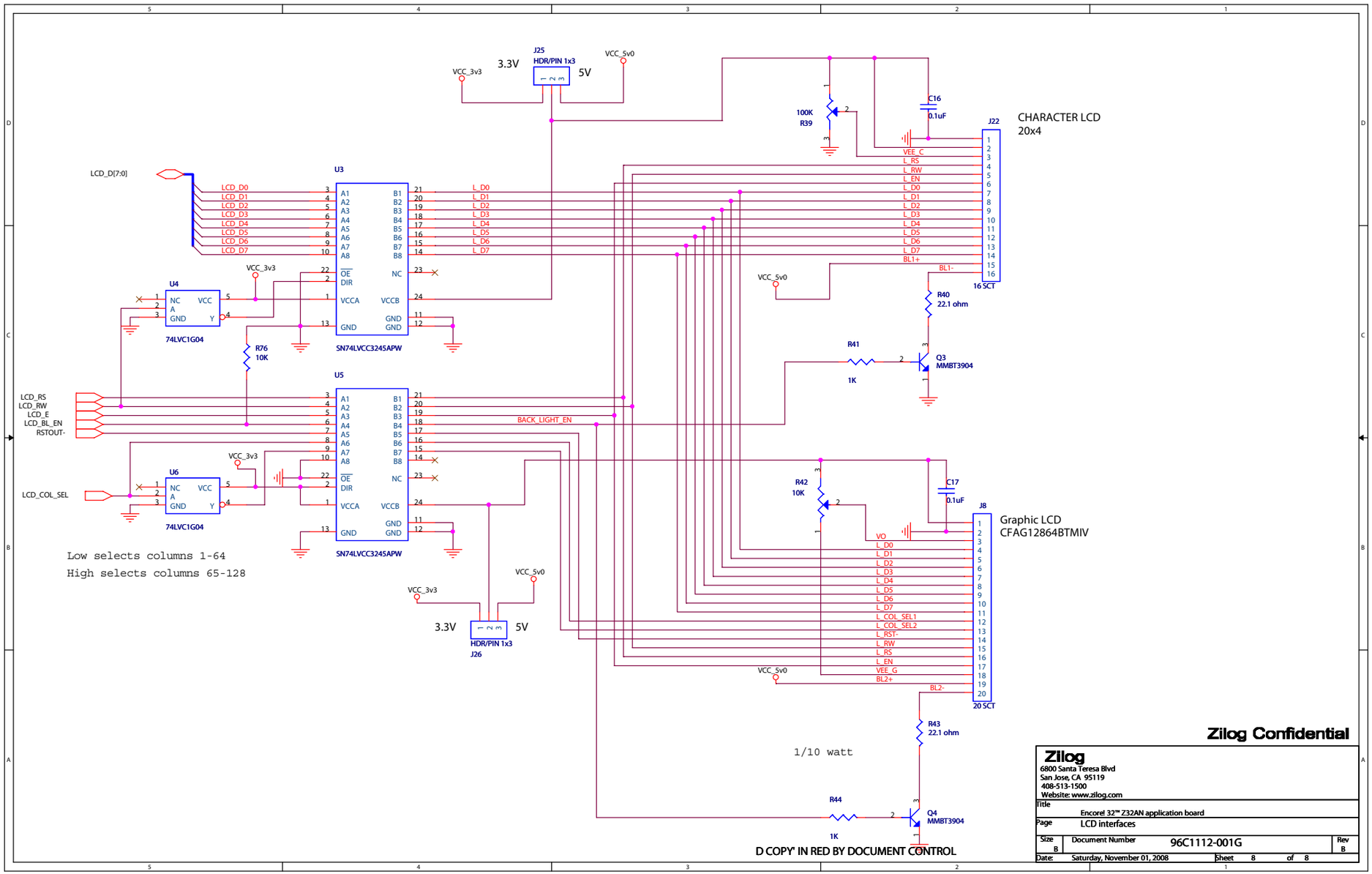

Figure 18. Encore!32™ Application Board Schematic (7 of 7)

Customer Support

For answers to technical questions about the product, documentation, or any other issues with Zilog's offerings, please visit Zilog's Knowledge Base at http://www.zilog.com/kb.

For any comments, detail technical questions, or reporting problems, please visit Zilog's Technical Support at http://support.zilog.com.

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