KSZ8795 EDS2 Daughter Card User Guide

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ISBN: 979-8-3371-1330-2

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Table of Contents

Preface

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For the most up-to-date information on development tools, see the MPLAB® IDE online help. Select the Help menu, and then Topics to open a list of available online help files.

INTRODUCTION

This chapter contains general information that will be useful to know before using the KSZ8795 EDS2 Daughter Card User Guide. Items discussed in this chapter include:

- Document Layout
- Conventions Used in this Guide
- Warranty Registration
- The Microchip Web Site
- Development Systems Customer Change Notification Service
- Customer Support
- Document Revision History

DOCUMENT LAYOUT

This document features the KSZ8795. The manual layout is as follows:

- **Chapter 1. "Overview"** – This chapter provides an overview of the KSZ8795 and a brief description of the card's features.
- **Chapter 2. "Getting Started"** – This chapter provides information on the setup and operation of the KSZ8795 EDS2 Daughter Card.
- **Chapter 3. "Hardware"** – This chapter shows the different connection types found on the KSZ8795 EDS2 Daughter Card.
- **Chapter 4. "System Boot"** – This chapter explains how to use device tree overlays when booting the host system.
- **Appendix A. "Schematics"** – This section shows the schematic drawings of the KSZ8795 EDS2 Daughter Card.
- **Appendix B. "Bill of Materials"** – This section shows the Bill of Materials (BOM) for the KSZ8795 EDS2 Daughter Card.
- **Appendix C. "PCB Layers"** – This section shows the PCB layers of the KSZ8795 EDS2 Daughter Card.

CONVENTIONS USED IN THIS GUIDE

This manual uses the following documentation conventions:

DOCUMENTATION CONVENTIONS

Description	Represents	Examples
Arial font:		
Italic characters	Referenced books	*MPLAB® IDE User's Guide*
	Emphasized text	...is the *only* compiler...
Initial caps	A window	the Output window
	A dialog	the Settings dialog
	A menu selection	select Enable Programmer
Quotes	A field name in a window or dialog	"Save project before build"
Underlined, italic text with right angle bracket	A menu path	*File>Save*
Bold characters	A dialog button	Click **OK**
	A tab	Click the **Power** tab
N'Rnnnn	A number in verilog format, where N is the total number of digits, R is the radix and n is a digit.	4'b0010, 2'hF1
Text in angle brackets < >	A key on the keyboard	Press <Enter>, <F1>
Courier New font:		
Plain Courier New	Sample source code	`#define START`
	Filenames	`autoexec.bat`
	File paths	`c:\mcc18\h`
	Keywords	`_asm, _endasm, static`
	Command-line options	`-Opa+, -Opa-`
	Bit values	`0, 1`
	Constants	`0xFF, 'A'`
Italic Courier New	A variable argument	*`file`*`.o`, where *`file`* can be any valid filename
Square brackets [ ]	Optional arguments	`mcc18 [options]` *`file`* `[options]`
Curly brackets and pipe character: { | }	Choice of mutually exclusive arguments; an OR selection	`errorlevel {0|1}`
Ellipses...	Replaces repeated text	`var_name [, var_name...]`
	Represents code supplied by user	`void main (void) { ... }`

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- **General Technical Support** – Frequently Asked Questions (FAQs), technical support requests, online discussion groups, Microchip consultant program member listing
- **Business of Microchip** – Product selector and ordering guides, latest Microchip press releases, listing of seminars and events, listings of Microchip sales offices, distributors and factory representatives

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- **Emulators** – The latest information on Microchip in-circuit emulators.This includes the MPLAB REAL ICE and MPLAB ICE 2000 in-circuit emulators.
- **In-Circuit Debuggers** – The latest information on the Microchip in-circuit debuggers. This includes MPLAB ICD 3 in-circuit debuggers and PICkit 3 debug express.
- **MPLAB IDE** – The latest information on Microchip MPLAB IDE, the Windows Integrated Development Environment for development systems tools. This list is focused on the MPLAB IDE, MPLAB IDE Project Manager, MPLAB Editor and MPLAB SIM simulator, as well as general editing and debugging features.
- **Programmers** – The latest information on Microchip programmers. These include production programmers such as MPLAB REAL ICE in-circuit emulator, MPLAB ICD 3 in-circuit debugger and MPLAB PM3 device programmers. Also included are nonproduction development programmers such as PICSTART Plus and PIC-kit 2 and 3.

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- Local Sales Office
- Field Application Engineer (FAE)
- Technical Support

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Technical support is available through the web site at:
http://www.microchip.com/support

DOCUMENT REVISION HISTORY

Revisions	Section/Figure/Entry	Correction
DS50003882A (05-30-25)	Initial release	

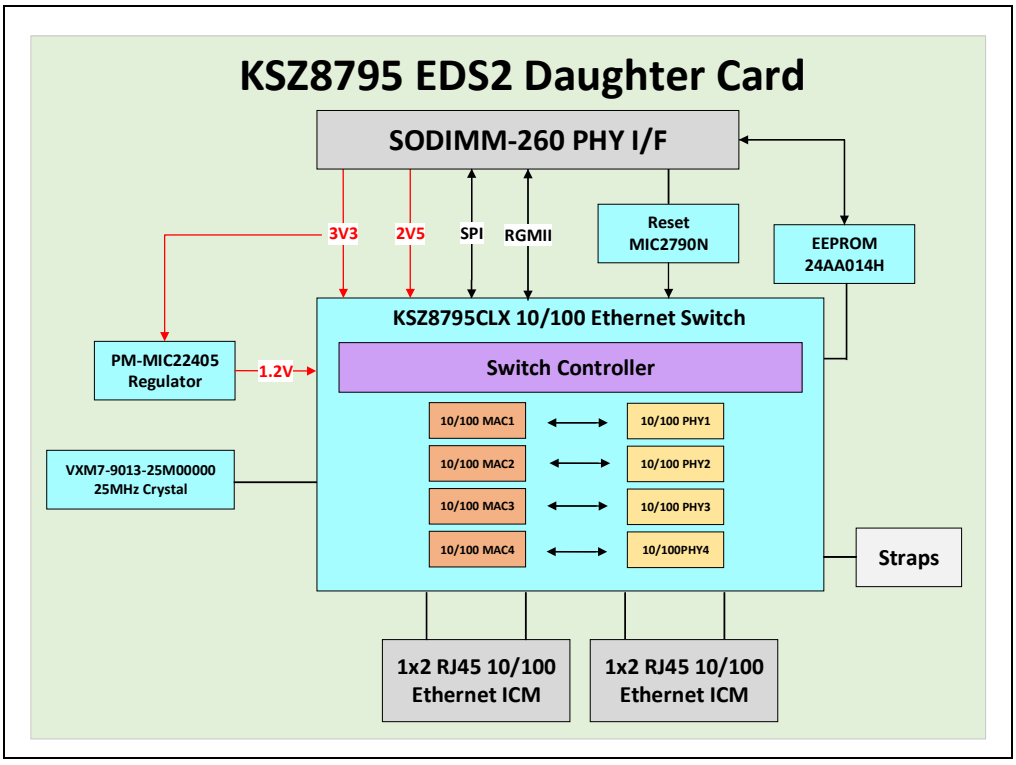
Chapter 1. Overview

1.1 INTRODUCTION

The KSZ8795 EDS2 Daughter Card is designed for evaluation of the Microchip KSZ8795CLX 10/100-Mbit Ethernet Switch when used with a Microchip EDS2 compatible host board. A SODIMM 260-pin connector for the EDS2 Host – KSZ8795 Interface is used due to its high performance, high pin count, and low cost.

This document describes the KSZ8795 EDS2 Daughter Card setup and user interface features. A simplified block diagram is shown in Figure 1-1.

FIGURE 1-1: KSZ8795 EDS2 DAUGHTER CARD BLOCK DIAGRAM



1.2 FEATURES

Below are the features of the KSZ8795 EDS2 Daughter Card:

- Microchip KSZ8795CLX 10/100-Mbit Ethernet Switch with RGMII/RMII
- Microchip VXM7-9013-25M0000 crystal for 25 MHz
- Microchip MIC2790N Reset supervisor with Reset LED indicator
- Microchip 24AA014H I^2C Serial EEPROM for board identification
- Microchip AC59B05A (MOD0044) PM-LV2 Regulator Module
- Two dual 10/100 Mb RJ45 Integrated Connector and Magnetic with LED connectors
- MDC/MDIO Management Interface
- Compliant with the SODIMM EDS2 Interface Specification
- PHY Reset DIP switch feature to hold the KSZ8795 in Reset
- Test points for GPIOs, power rails, and GND
- 1x3 header to select between 3.3V and 2.5V VDDAT transceiver voltage
- Green LED indicator for 1V2 power rail

1.3 REFERENCES

Concepts and materials available in the following documents may be helpful when reading this document. Visit the www.microchip.com for the latest documentation.

- *KSZ8795 Data Sheet*
- *KSZ8795 EDS2 Daughter Card Schematics*
- *KSZ8795 Hardware Design Checklist*
- *SAM9X75 Curiosity Rev 5 Schematics*
- *SAM9X75 Curiosity Rev 5 User's Guide*
- *EDS2 SODIMM IF Development Guide*

1.4 ACRONYMS AND DEFINITIONS

Table 1-1 shows the terms used in this user guide.

TABLE 1-1: ACRONYMS AND DEFINITIONS

Term	Definition
ARP	Address Resolution Protocol
COM	Communications Port
DHCP	Dynamic Host Configuration Protocol
DIP	Dual In-line Package
DSUB	D - Subminiature
EP	Extended Page
GPIO	General Purpose Input/Output
ICM	Integrated Connector Magnetic
IEEE	Institute of Electrical and Electronics Engineers
I/O	Input/Output
IP	Internet Protocol
LAN	Local Area Network
LSB	Least Significant Byte/Bit
MAC	Media Access Controller
MDIO	Management/Data Input/Output
MII	Media Independent Interface

TABLE 1-1: ACRONYMS AND DEFINITIONS (CONTINUED)

Term	Definition
NIC	Network Interface Card
OUI	Organizationally Unique Identifier
PC	Personal Computer
PCB	Printed Circuit Board
PCS	Physical Sublayer
PDU	Payload Data Unit
PHY	Physical Layer Transceiver
PN	Part Number
QSGMII	Quad Serial Gigabit Media Independent Interface
1-USGMII	Quad Universal Serial Gigabit Media Independent Interface
SMA	Sub-Miniature Version A
SODIMM	Small Outline Dual In-Line Memory Module
TCXO	Temperature-Compensated Crystal Oscillator
TFTP	Trivial File Transfer Protocol
USB	Universal Asynchronous Receiver/Transceiver
VDFN	Very-Small Dual Flat, No Leads
VM	Virtual Machine
VREG	Voltage Regulator
XO	Crystal Oscillator

NOTES:

Chapter 2. Getting Started

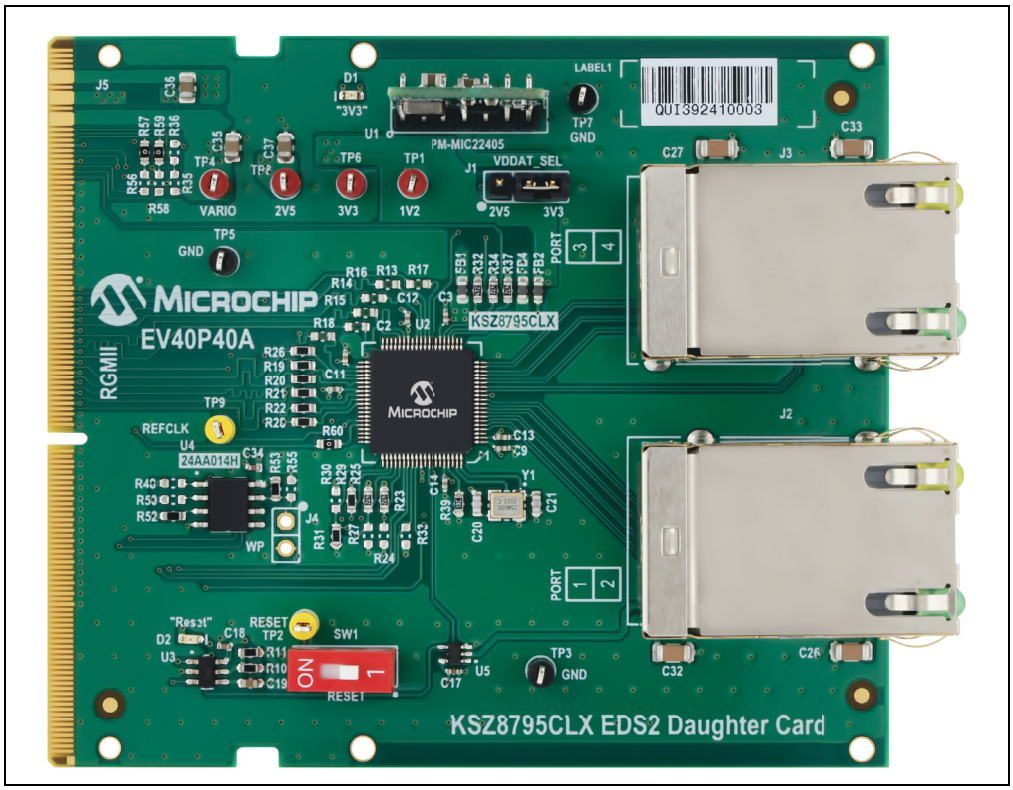
2.1 OVERVIEW

This chapter provides a quick start guide for using the KSZ8795 EDS2 Daughter Card. The SAM9x75 Curiosity (Rev 5) serves as the host board. Refer to the *SAM9x75 Curiosity User's Guide* for the correct jumper configuration.

2.2 KSZ8795 INSTALLATION

Figure 2-1 shows the KSZ8795 EDS2 Daughter Card.

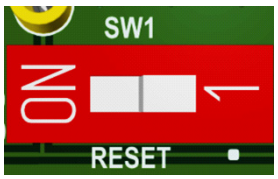
FIGURE 2-1: KSZ8795 EDS2 DAUGHTER CARD



Perform the following steps to install the KSZ8795 EDS2 Daughter Card in the SOD-IMM EDS2 connector:

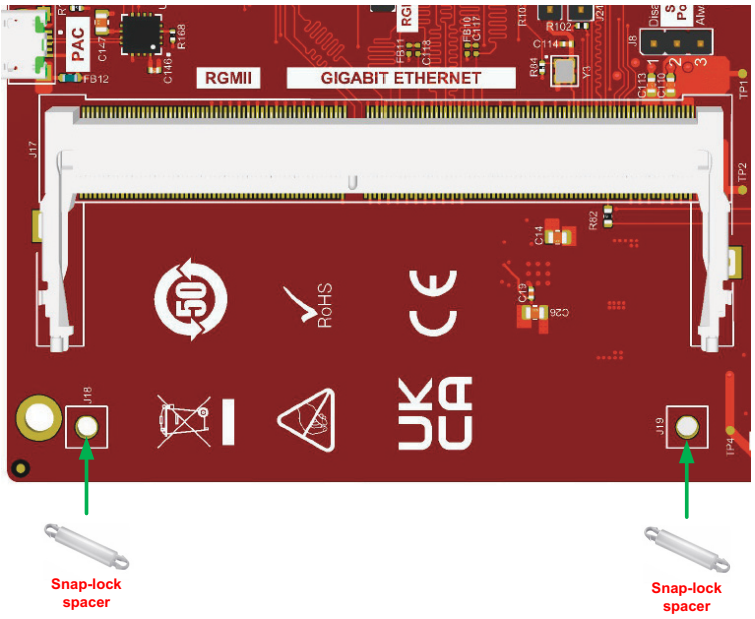
1. Verify that the host board power is OFF.
2. Verify if the SW1 slide switch is set as shown in Figure 2-2.

FIGURE 2-2: SW1 SLIDE SWITCH



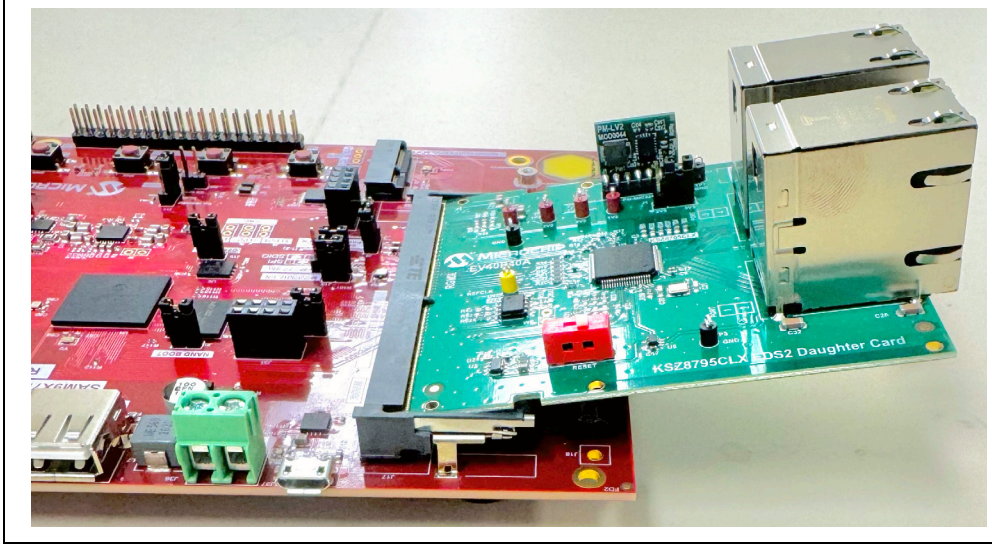
3. Install the two snap lock spacers (Wurth Elektronik part number 709652500) included in the kit on the SAM9X75 Curiosity mounting holes J18 and J19 for mechanical support. See Figure 2-3.

FIGURE 2-3: SNAP LOCK SPACERS



4. Grab the daughter card by its board edges. Align to SODIMM EDS2 receptacle and insert the board fingers' edge at a 45-degree angle into the SODIMM connector as shown in Figure 2-4.

FIGURE 2-4: KSZ8795 EDS2 DAUGHTER CARD INSTALLATION



5. Push down the daughter card until it latches into the SODIMM receptacle latches.
6. Connect an Ethernet cable between the Daughter Card's RJ45 port 1 and a link partner device.

2.3 QUICK START

Proceed to **Chapter 4. "System Boot"** for instructions for using the KSZ8795 EDS2 Daughter Card.

2.4 KSZ8795 EDS2 DAUGHTER CARD REMOVAL

Complete the following procedure to remove the KSZ8795 from the SODIMM EDS2 receptacle:

1. Verify that the host board power is OFF.
2. Disconnect the RJ45 cables.
3. If snap locks are used, release them from the daughter card. A pair of long-nose pliers can be used to close the latch pins for easy release.
4. Gently pull the SODIMM receptacle arms away from the daughter card. It should snap upwards.
5. Grab the daughter card by its edges and remove it from the SODIMM EDS2 receptacle.

NOTES:

Chapter 3. Hardware

3.1 INTRODUCTION

This chapter provides a description of the KSZ8795 EDS2 Daughter Card hardware, including headers, test points, LEDs, and switches on the board.

The top side and bottom side of the KSZ8795 are shown in Figure 3-1 and Figure 3-2, respectively.

FIGURE 3-1: KSZ8795 EDS2 DAUGHTER CARD (TOP SIDE)

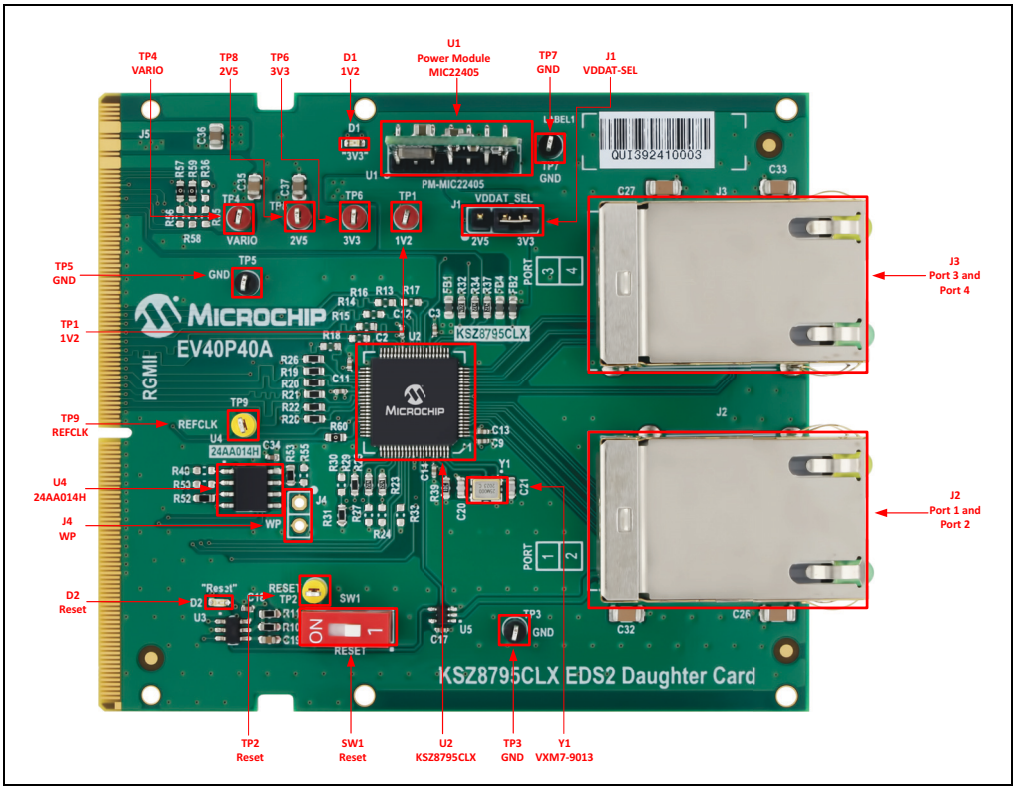
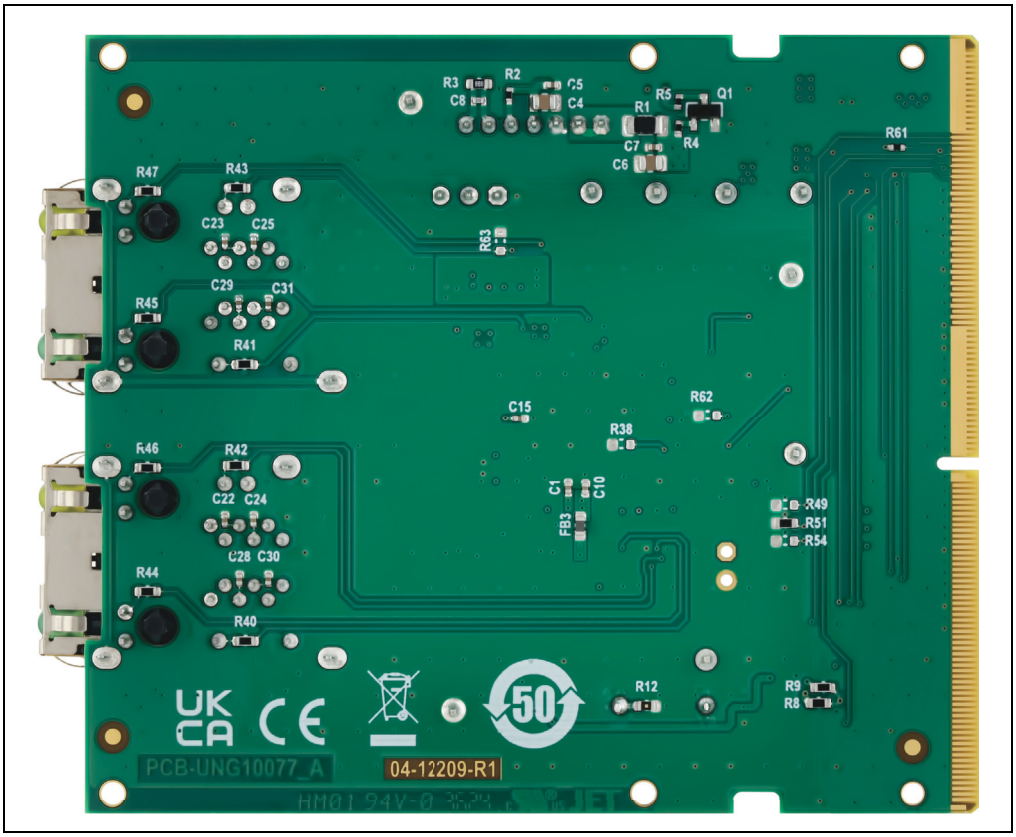


FIGURE 3-2: KSZ8795 EDS2 DAUGHTER CARD (BOTTOM SIDE)



3.2 CONNECTORS

Table 3-1 describes the connectors on the KSZ8795 EDS2 Daughter Card.

TABLE 3-1: KSZ8795 EDS2 DAUGHTER CARD CONNECTORS

Reference Designator	Name	Description
J1	VDDAT Select Header 1x3	Provides Power Select option for VDDAT (3V3 or 2V5)
J2	RJ45 ICM 1x2	Ethernet RJ45 connector with integrated magnetics for two 1 Gb ports
J3	RJ45 ICM 1x2	Ethernet RJ45 connector with integrated magnetics for two 1 Gb ports
J4	WP Header 1x2	EEPROM Write Protect footprint (header not installed). Used to disable write protection during factory programming
J5	SODIMM-260 Pin Edge Connector	Provides power and signals for operation. Connects to Micro-chip EDS2 compatible host.

3.3 TEST POINTS

Table 3-2 lists the test points on the KSZ8795.

TABLE 3-2: KSZ8795 EDS2 DAUGHTER CARD TEST POINTS

Test Point	Color	Description
TP1	Red	1V2
TP2	Yellow	Reset
TP3	Black	GND
TP4	Red	VARIO
TP5	Black	GND
TP6	Red	3V3
TP7	Black	GND
TP8	Red	2V5

3.4 LEDS

Table 3-3 details the LEDS on the KSZ8795.

TABLE 3-3: KSZ8795 EDS2 DAUGHTER CARD LEDS

Reference Designator	Name	Description
D1	1V2	Green LED 1V2 indicator
D2	RESET	Red LED RESET indicator
J2A - Left	RJ45 Port 1 - Left	Green LED connected to KSZ8795 LED1-0
J2A - Right	RJ45 Port 1 - Right	Yellow LED connected to KSZ8795 LED1-1
J2B - Left	RJ45 Port 2 - Left	Green LED connected to KSZ8795 LED2-0
J2B - Right	RJ45 Port 2 - Right	Yellow LED connected to KSZ8795 LED2-1
J3A - Left	RJ45 Port 3 - Left	Green LED connected to KSZ8795 LED3-0
J3A - Right	RJ45 Port 3 - Right	Yellow LED connected to KSZ8795 LED3-1
J3B - Left	RJ45 Port 4 - Left	Green LED connected to KSZ8795 LED4-0
J3B - Right	RJ45 Port 4 - Right	Yellow LED connected to KSZ8795 LED4-1

3.5 CONFIGURATION STRAPS

Table 3-4 shows the configuration straps on the KSZ8795 EDS2 Daughter Card.

TABLE 3-4: KSZ8795 CONFIGURATION STRAPS

Reference Designator PU/PD	Name	Description
R23*/R24	Gigabit Select	0 – 10/100 Mbps 1* – 1 Gbps
R25*/R27	PLL Clock Source	0 – External 1* – 25 MHz XI/XO
R29*	REFCLK Output	0* – Disabled
R30/R31*	MODE	0* – Normal 1 – Clock
R32*	GMAC Interface Mode	LED3[1:0] 00 – MII for SW5-MII(N/A) 01 – RMII for SW5-RMII 10 – GMII for SW5-GMII (N/A) 11* – RGMII for SW5-RGMII For details in other modes, see data sheet.
R34*/R63	GMAC Interface Mode	
R35/R36*	Serial Bus	0* – SPI Client Mode 1 – MIIM-MDC/MDIO Mode

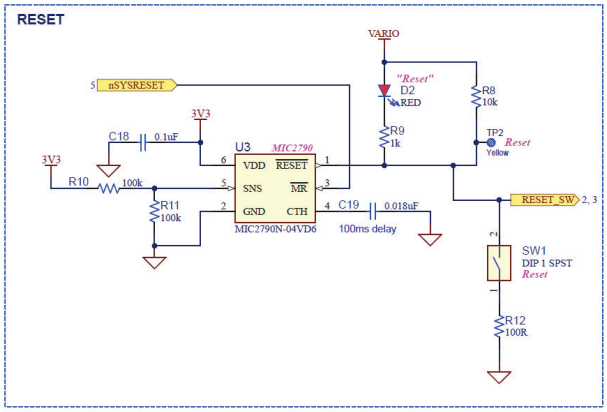
Note 1: Only one of the two pull-up and pull-down resistors is installed.

2: * indicates default.

3.6 RESET

The KSZ8795 includes a Reset circuit using the Microchip MIC2790 Reset supervisor as shown in Figure 3-3. The system Reset signal, **nSYSRESET,** is driven from the SOD-IMM EDS2 host interface and is connected to the MIC2790 master Reset input MR. When MR goes low, the MIC2790 Reset output on net **RESET_SW** goes low, resetting the KSZ8795 and turning on the Reset LED D2. The **RESET_SW** net will go high 100 milliseconds after **nSYSRESET** goes high, turning the Reset LED off and releasing the KSZ8795 from Reset. The configuration straps are sampled when **RESET_SW** goes high.

FIGURE 3-3: KSZ8795 RESET CIRCUIT



The DIP Switch (SW1), as shown in Figure 3-3, can be used to place the KSZ8795 EDS2 Daughter Card in Reset without affecting the rest of the system. This feature is useful when testing and updating the KSZ8795 Linux® driver after the system has booted up.

3.7 CLOCKS

The KSZ8795 EDS2 Daughter Card uses a Microchip VXM7-9013-25M0000 25 MHz crystal for the KSZ8795 clock reference.

3.8 POWER

The KSZ8795 EDS2 Daughter Card requires 3.3V, 2.5V, and 1.2V. The EDS2 SODIMM EDS2 interface provides 3.3V, 2.5V, and VARIO (3.3V or 2.5V). An on-board PM-LV2 (AC59B05A) regulator module is used to generate the 1.2V required by the KSZ8795 analog and digital core power inputs.

3.9 KSZ8795 EDS2 DAUGHTER CARD EEPROM

The KSZ8795 includes a Microchip 24AA014H EEPROM with half-array write protection (40H to 7Fh) for identification. Only some locations in the protected area starting at 40h are programmed as shown in Figure 3-4. Details on these fields are specified in Table 3-5.

FIGURE 3-4: EEPROM CONTENTS

Offset(h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00000000	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00000010	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00000020	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00000030	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00000040	A3	01	01	04	0A	00	87	95	01	00	45	56	34	30	50	34
00000050	30	41	41	31	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00000060	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
00000070	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	AA	00	00	AA

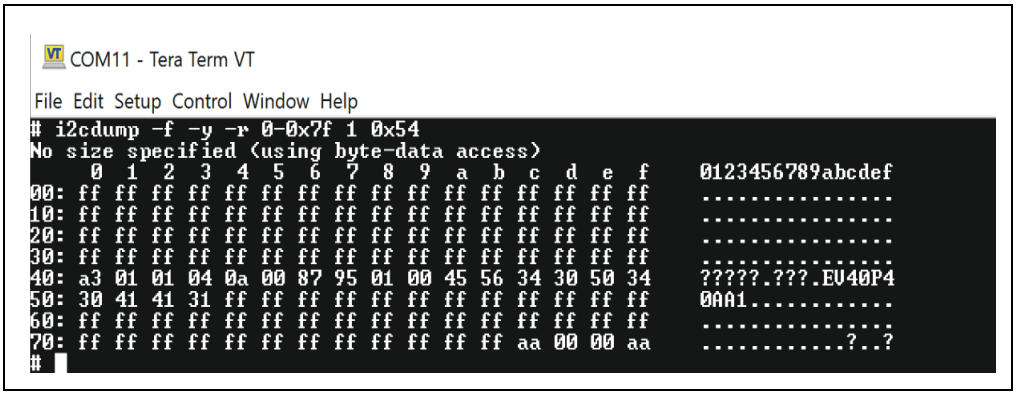
TABLE 3-5: EDS2 DAUGHTER CARD EEPROM

Byte Address	Name	Type	Description
40	KEY	INT	Magic number = A3h
41	REV	INT	EEPROM revision
42	DCTYPE	INT	Daughter card type: 0 = PHY, 1 = SWITCH
43	NPORTS	INT	Number of ports
44	MACIF	INT	MAC interface: RMII 07h RGMII 09h RGMII_ID 0Ah RGMII_RXID 0Bh RGMII_TXID 0Ch SGMII 04h QSGMII 13h
45	DPN_PNUM	INT	Device part number: [23:20] Product family - KSZ - LAN - VSC [19:16] Part number upper 4 bits
46			Device part number bits [15:8]
47			Device part number bits [7:0]
48	CTRLIF	INT	Control interface: 7:5 = Reserved 4:3 = SPI mode 2 = SPI control available 1 = I^2C control available 0 = MIIM control available
49	SPIR	INT	SPI rate
4A	DEVT	ASCII	Dev Tools part number
4B			
4C			
4D			
4E			
4F			
50			
51			
52	BREVU	ASCII	UNG board revision letter
53	BREVD	ASCII	Dev Tools board revision number
7C	IDBYTE0	INT	ID BYTE 1 = AAh
7D	IDBYTE1	INT	ID BYTE 2 = 00h
7E	IDBYTE2	INT	ID BYTE 3 = 00h
7F	CHECKSUM	INT	CHECKSUM =AAh

The EEPROM's contents can be read within Linux via the following command:

```
# i2cdump -f -y -r 0-0x7F 1 0x54
```

FIGURE 3-5: EEPROM DUMP



NOTES:

Chapter 4. System Boot

4.1 OVERVIEW

This chapter describes the boot process using the SAM9X75 Curiosity EDS2 host using Linux software running on the SAM9X75. The boot process for other EDS2 host platforms should be similar.

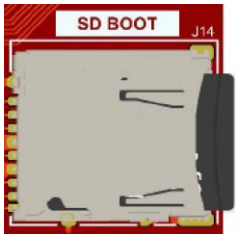
The EDS2 host board should be properly configured with Linux and driver supporting the KSZ8795. Refer to the software documentation on the KSZ8795 EDS2 Daughter Card product page. Download the microSD card image and program into a microSD card using a tool, such as balenaEtcher.

4.2 KSZ8795 EDS2 SYSTEM POWER-UP

At this point the KSZ8795 should be installed in the SODIMM EDS2 connector. Perform the following steps to power up the SAM9X75 Curiosity EDS2:

1. Verify the host board's default jumper settings within the *SAM9X75 Curiosity EDS2 User's Guide*.
2. Insert the microSD card in SAM9X75 Curiosity microSD card slot J14. See Figure 4-1.

FIGURE 4-1: MICROSD CARD

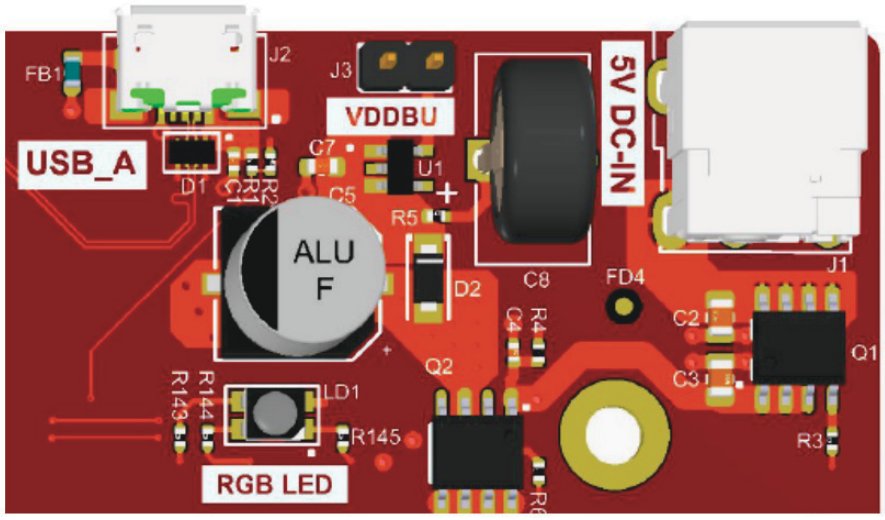


3. Connect the 1x6 female header of an FTDI or compatible TTL-232R-3V3 USB-to-serial cable into the UART debug header J35 on the SAM9X75 Curiosity EDS2. Note that the header black wire must connect to pin 1 of J35. See Figure 4-2.

FIGURE 4-2: SAM9X75 UART DEBUG HEADER

4. Press the WKUP/START buttons (SW1/SW4) on the curiosity board to turn on the system.
5. Connect a 5V 1A (minimum) power supply with a DC plug to DC Jack J1 on the SAMA9X75 Curiosity EDS2 host. The RGB LED LD1 should begin its startup sequence. See Figure 4-3.

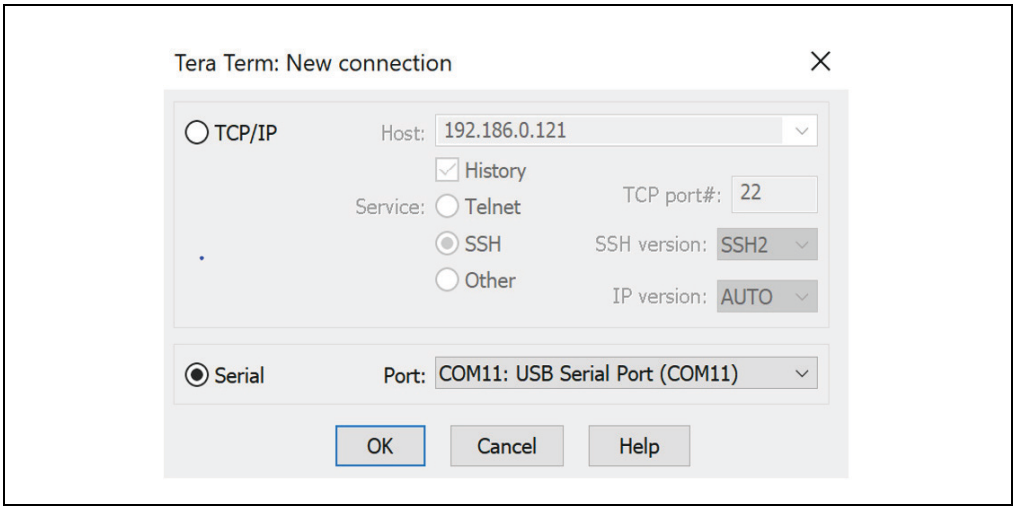
FIGURE 4-3: SAM9X75 CURIOSITY DC JACK, MICRO USB, AND RGB LED



6. Open Tera Term. Tick the **Serial** radio button and look for COMx:USB Serial Port.

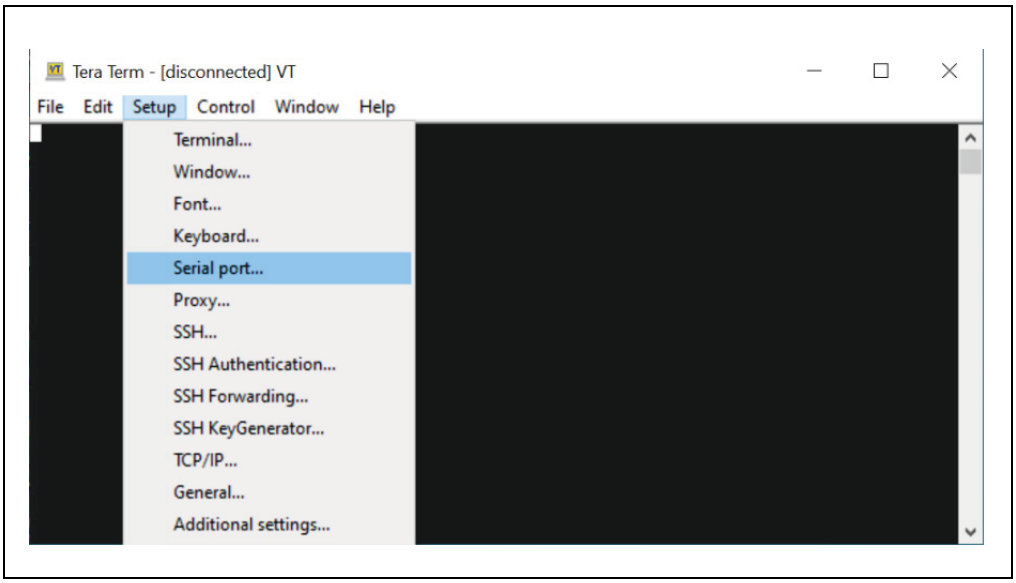
7. COM11 is shown in Figure 4-4. Windows may assign a different port number. Click on **OK**.

FIGURE 4-4: TERA TERM SERIAL PORT SELECTION



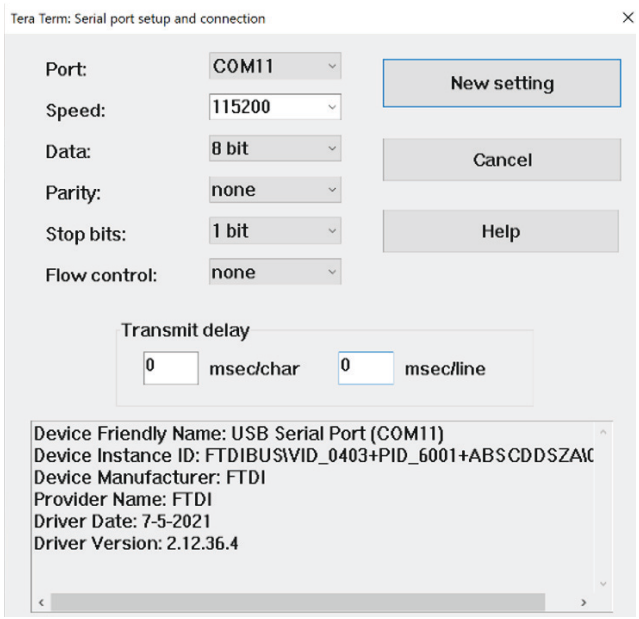
8. Go to the Setup menu and select Serial port. See Figure 4-5.

FIGURE 4-5: TERA TERM SETUP MENU



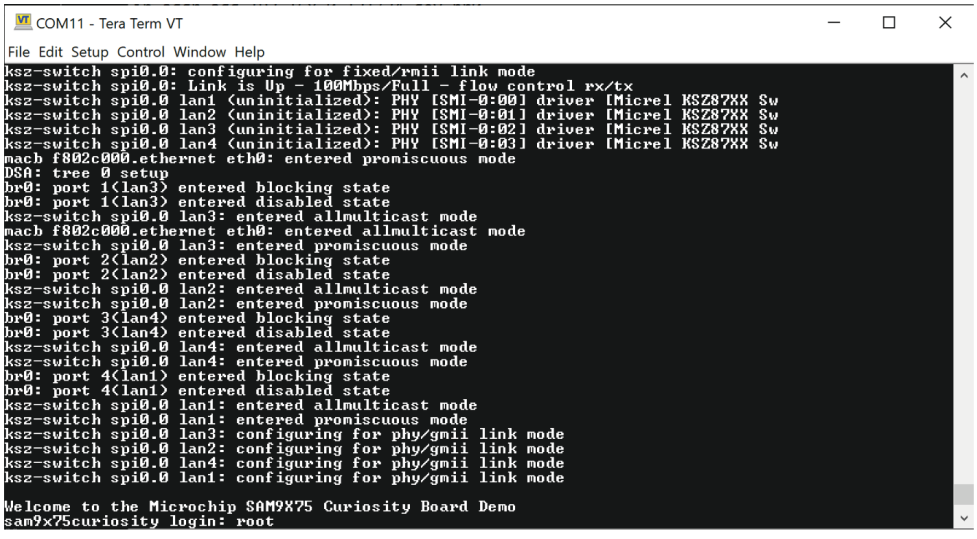
9. Set the selected port to 115200, 8-bit, no parity, 1 stop bit, no flow control, and 40 msec/line. Click on **OK**. See Figure 4-6.

FIGURE 4-6: TERA TERM SERIAL PORT SETUP



10. At the login prompt, enter `root`. See Figure 4-7.

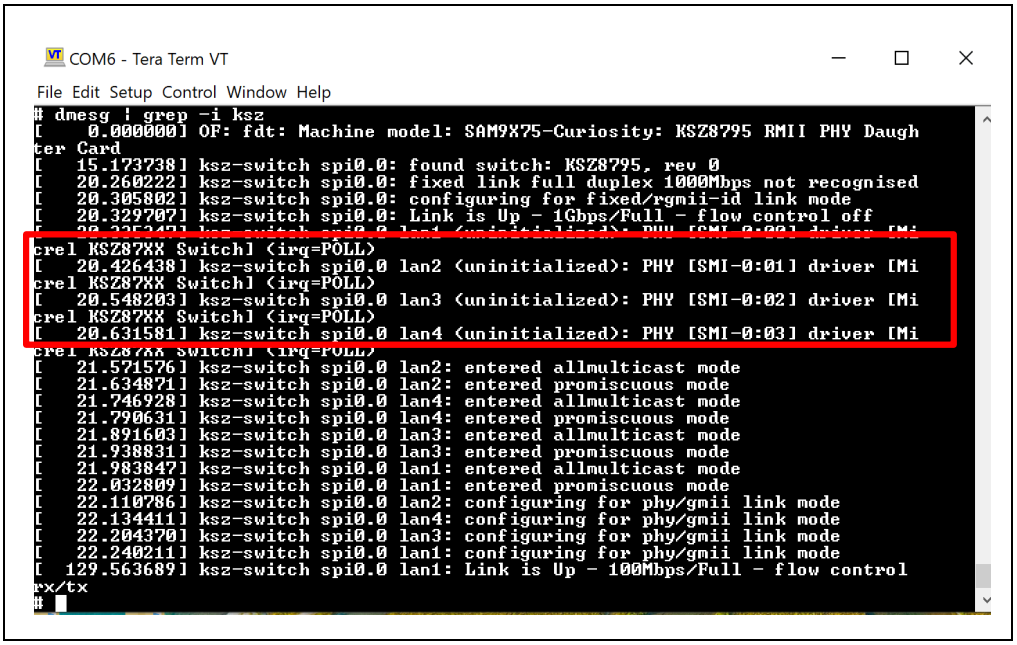
FIGURE 4-7: LINUX® PING



Note: For the succeeding steps, it is assumed that a host PC with an Ethernet port that can be pinged at `192.168.0.80` is available.

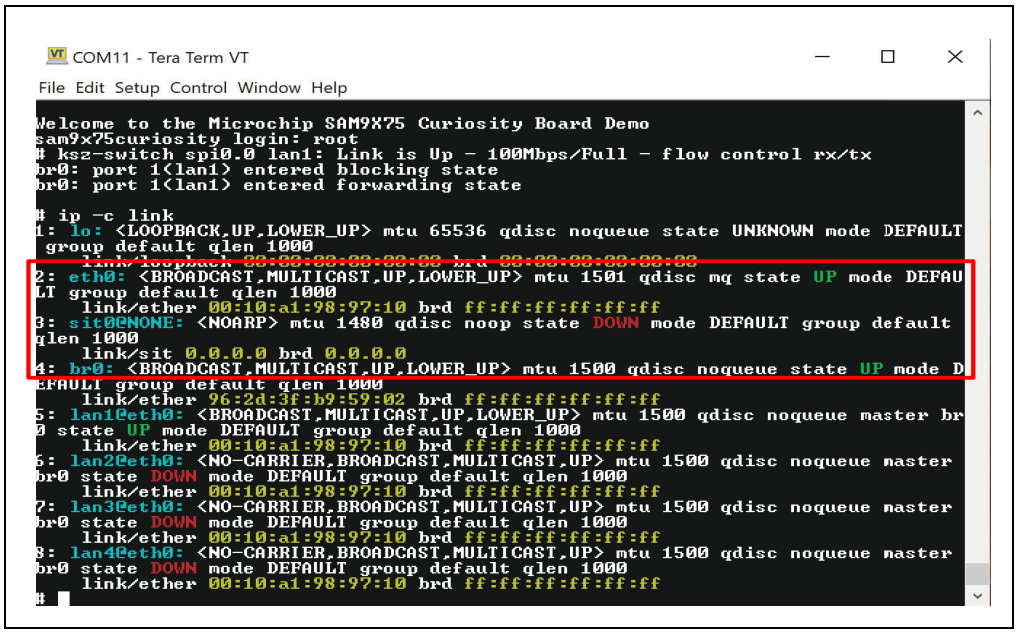
11. Verify that the KSZ8795 driver has loaded into the kernel. See Figure 4-8.

FIGURE 4-8: # DMESG | GREP -I KSZ



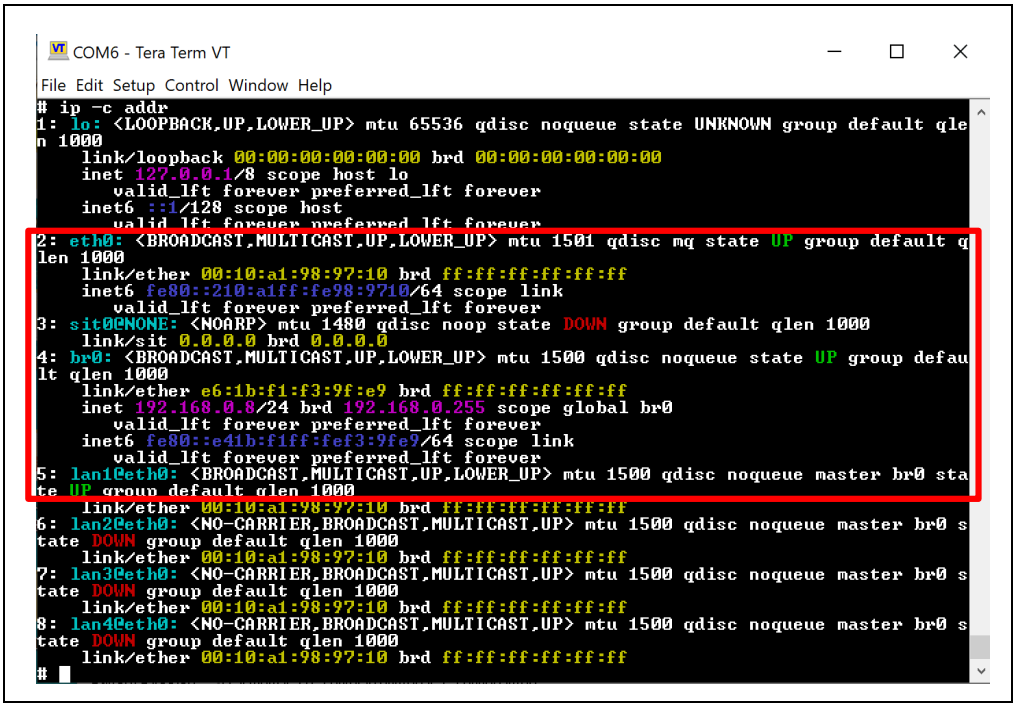
12. Plug an Ethernet cable into one of the RJ45 ports. Check the link status with the IP utility. One of the LAN ports shows an “Up” status indicator. See Figure 4-9.

FIGURE 4-9: # IP -C LINK



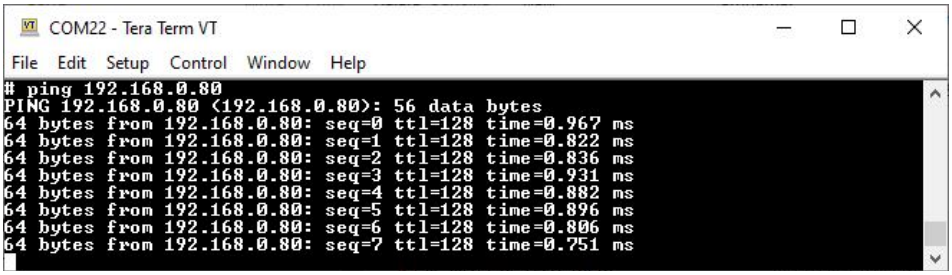
13. Verify that your IP configuration is compatible with your network. The example in Figure 4-10 indicates the switch is configured with an IP address of 192.168.0.8 with 24 bits for the network mask which is equivalent to 255.255.255.0. This configuration provides access to other devices on the 192.168.0.x addressed network.

FIGURE 4-10: # IP -C ADDR



14. Enter the following command to perform a ping test (see Figure 4-11):
    `#ping 192.168.0.80`

FIGURE 4-11: KSZ8795 EDS2 DAUGHTER CARD SYSTEM PING TEST



Appendix A. Schematics

A.1 INTRODUCTION

This appendix shows the KSZ8795 EDS2 Daughter Card schematics.

FIGURE A-1: KSZ8795 EDS2 DAUGHTER CARD TITLE PAGE

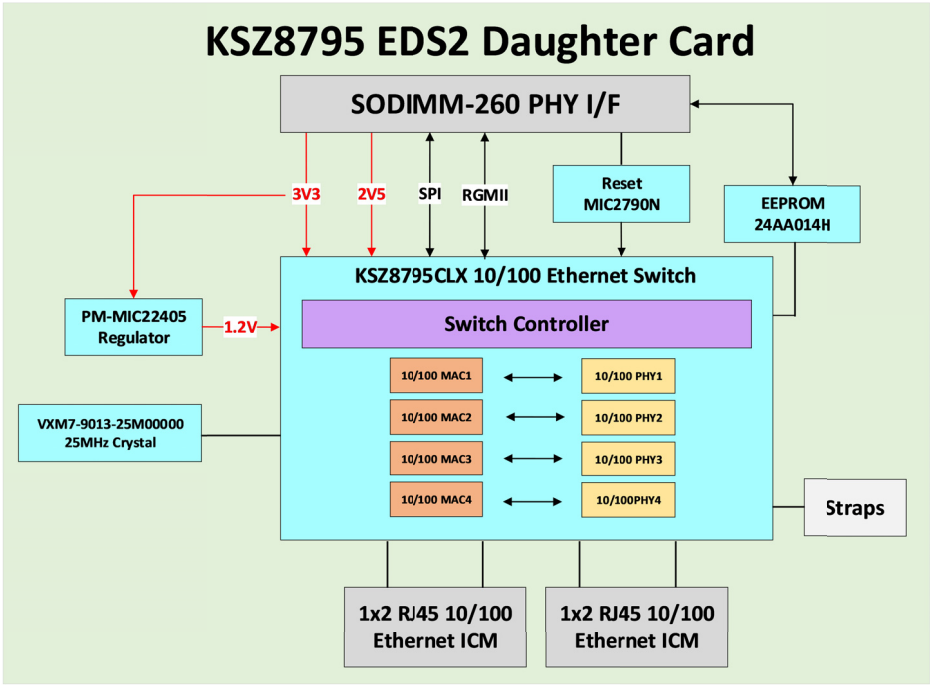
Title Page

Table of Contents

Sheet	Description
1	Title Page
2	Power
3	KSZ8795, Clock, and Straps
4	Ethernet Ports
5	SODIMM Edge Connector

Revision History

Revision	Date	Revision Summary	Author
A	04/29/2024	Intial draft	Alexys Antell
R1	10/09/2024	Released with minor silk edits.	Alexys Antell



Notes

#	Description
1	This daughter card supports VARIO at 3.3V or 2.5V

Project Owner: Alexys Antell
PCB Layout Contact: Sam Charles
PartNumber: EV40P40A
Project Title: KSZ8795 EDS2 Daughter Card
Variant: Standard
Sheet Title: Title Page
Size: B | SCH #: 02-01144 Rev: 1 | PCB #: 04-12209 Rev: 1 | Date: 5/14/2025 | Sheet 1 of 5
File: 1 Title-Page UNG10077 A0.SchDoc
Designed with Altium — Altium.com

FIGURE A-2: KSZ8795 EDS2 DAUGHTER CARD POWER

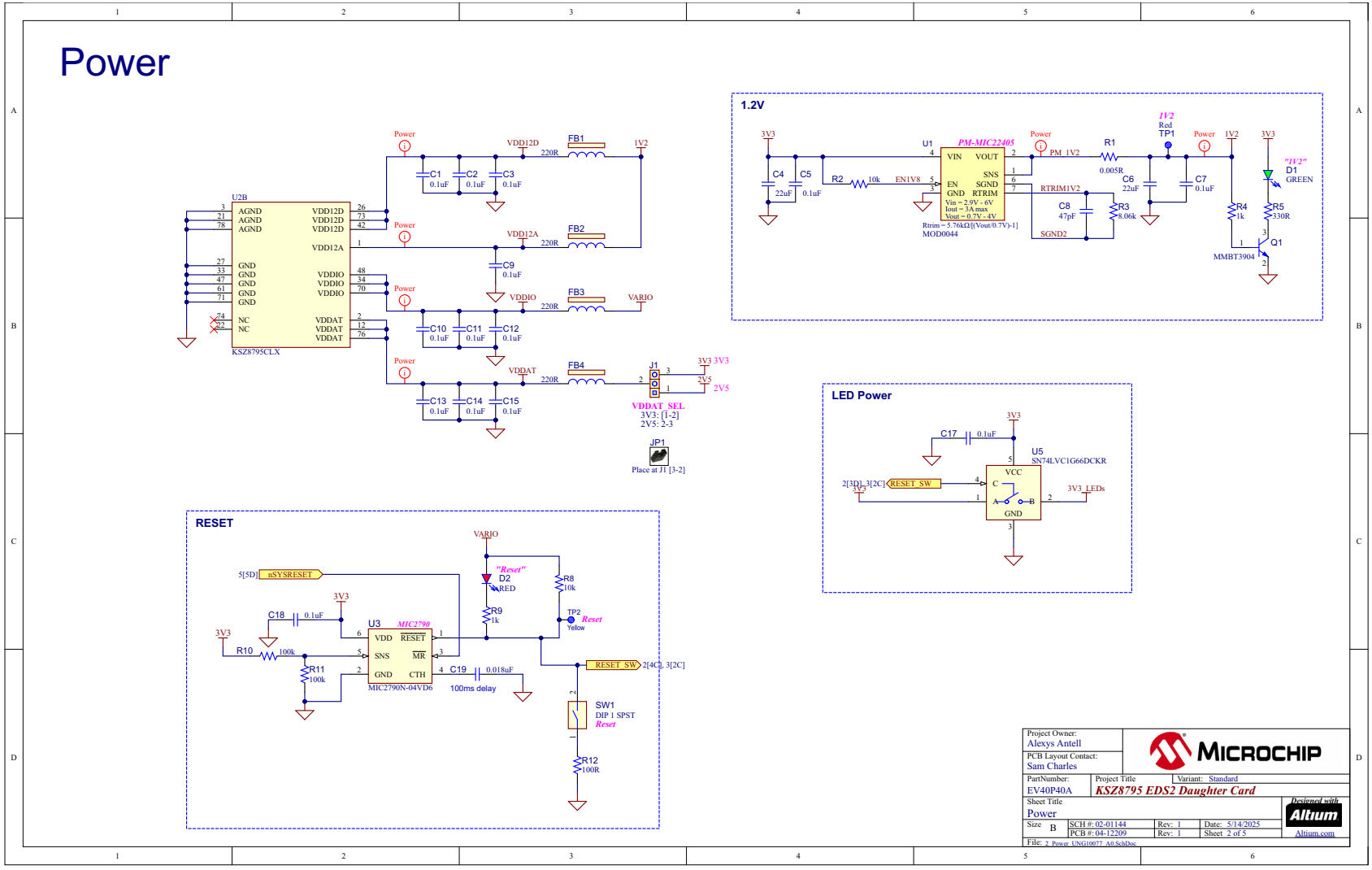


FIGURE A-3: KSZ8795 EDS2 DAUGHTER CARD PHY, CLOCK, AND STRAPS

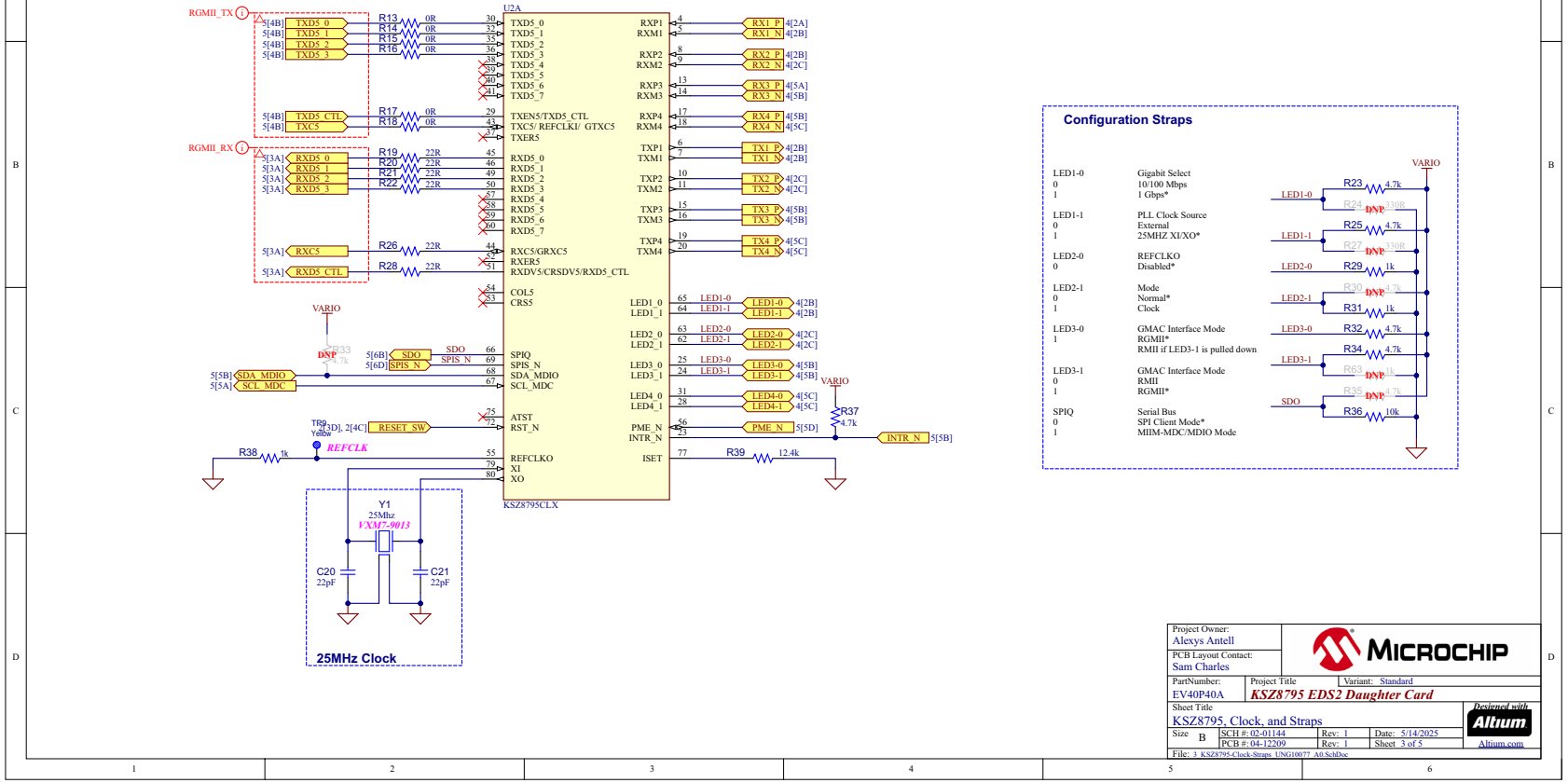


FIGURE A-4: KSZ8795 EDS2 DAUGHTER CARD ETHERNET PORTS

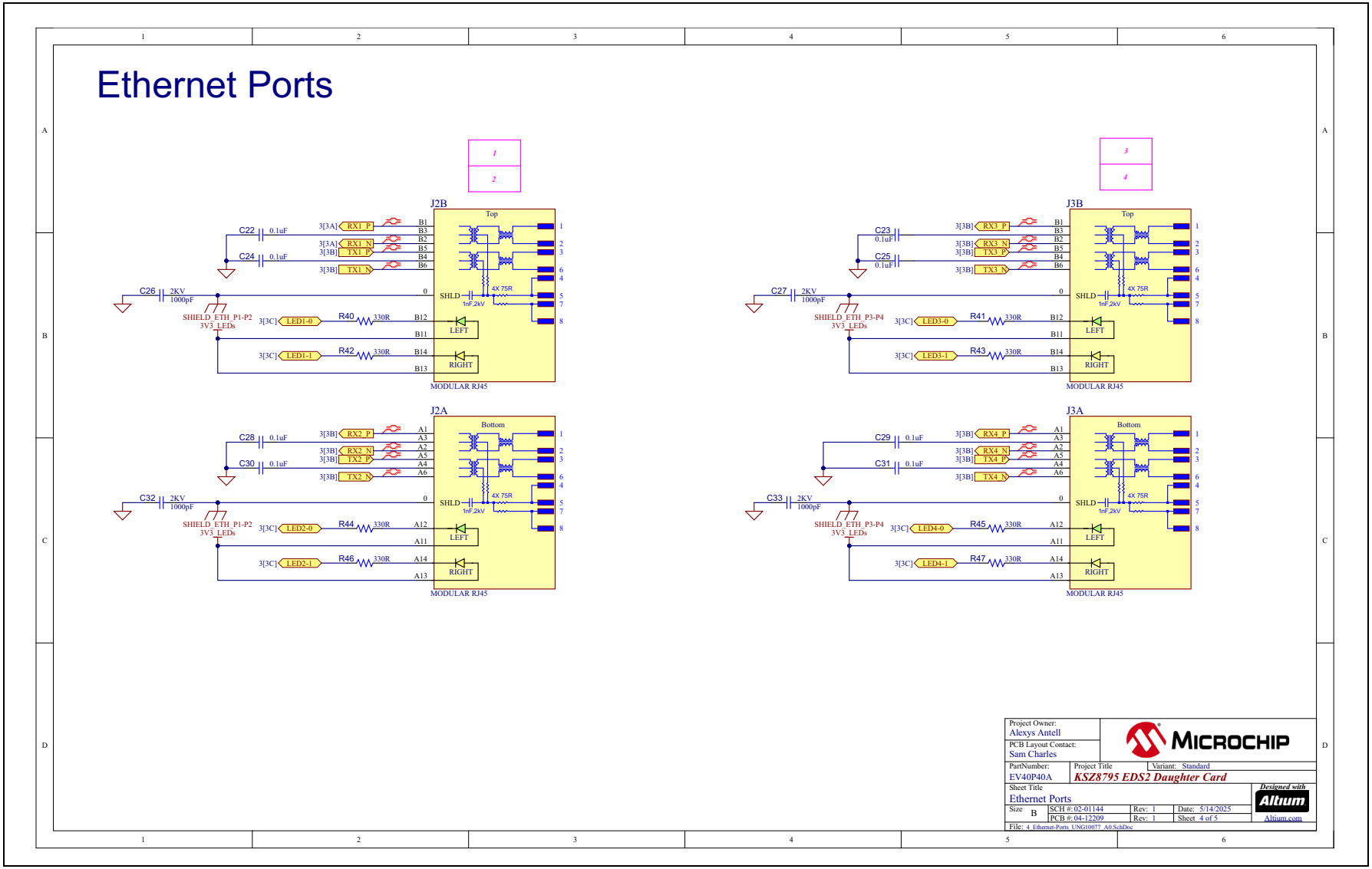
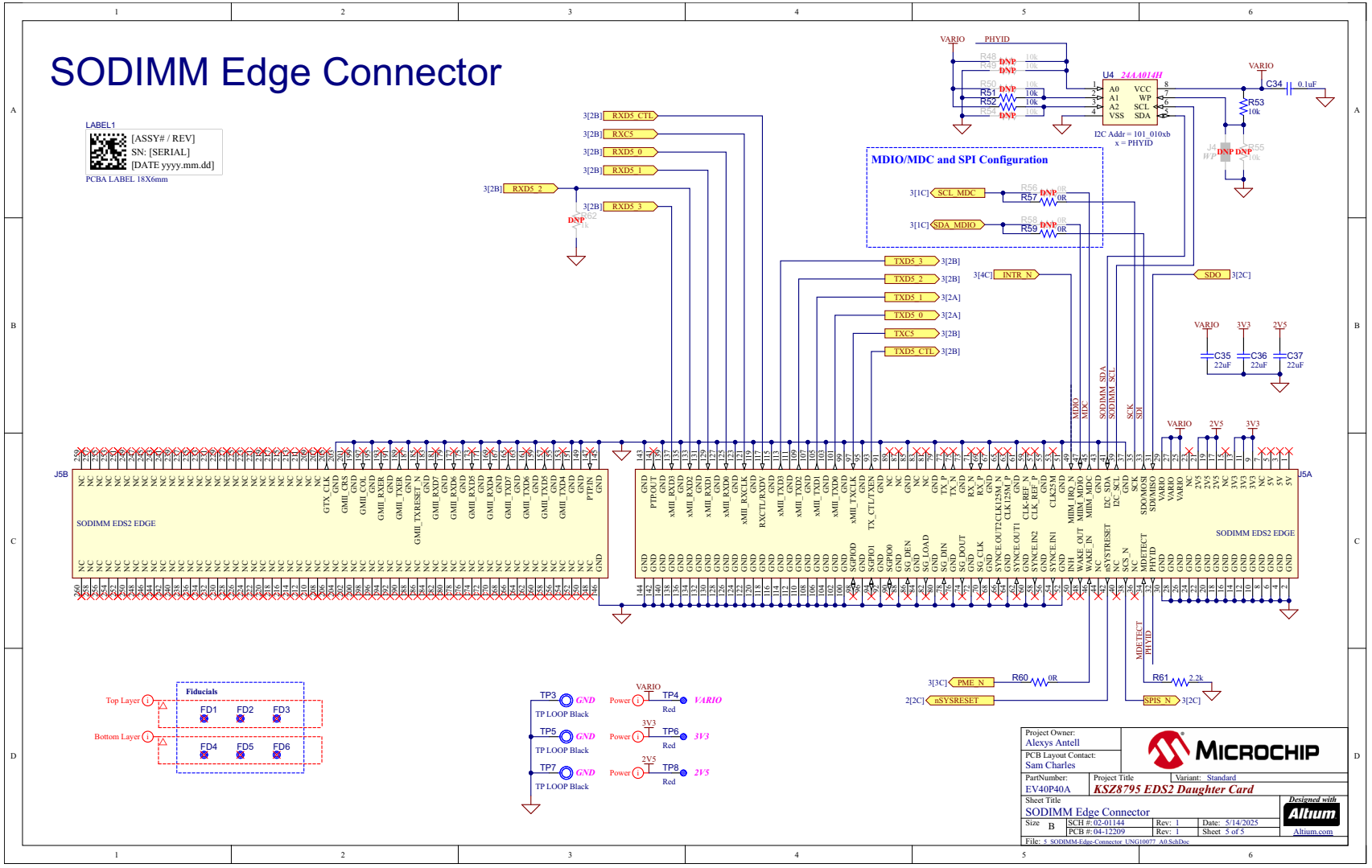


FIGURE A-5: KSZ8795 EDS2 DAUGHTER CARD SODIMM EDGE CONNECTOR



Appendix B. Bill of Materials

B.1 INTRODUCTION

This appendix contains the KSZ8795 Bill of Materials (BOM).

TABLE B-1: BILL OF MATERIALS

Item	Qty	Reference	Description	Populated	Manufacturer	Manufacturer Part Number
1	20	C1, C2, C3, C5, C7, C9, C10, C11, C12, C13, C14, C15, C22, C23, C24, C25, C28, C29, C30, C31	CAP CER 0.1uF 16V 10% X7R SMD 0402	Yes	KEMET	C0402C104K4RACAUTO
2	5	C4, C6, C35, C36, C37	CAP CER 22uF 16V 10% X5R SMD 0805	Yes	Samsung Electro-Mechanics, TDK Corporation	CL21A226KOQNNNG, C2012X5R1C226K125AC
3	1	C8	CAP CER 47pF 5% 50V C0G/NP0 SMD 0402 AEC-Q200	Yes	Murata Electronics North America	GCM1555C1H470JA16D
2	3	C17, C18, C34	CAP CER 0.1uF 50V 10% X7R SMD 0402	Yes	TDK Corporation	C1005X7R1H104K050BB
4	1	C19	CAP CER 0.018uF 50V 10% X7R SMD 0603	Yes	KEMET	C0603C183K5RACTU
5	2	C20, C21	CAP CER 22pF 50V 5% C0G SMD 0603	Yes	TDK Corporation	C1608C0G1H220J080AA
3	4	C26, C27, C32, C33	CAP CER 1000pF 2KV 10% X7R SMD 1206	Yes	D3_Johanson Dielectrics Inc	202R18W102KV4E
6	1	D1	DIO LED GREEN 2V 30mA 35mcd Clear SMD 0603	Yes	Lite-On Inc	LTST-C191KGKT
7	1	D2	DIO RED 2V 20mA 54mcd CLEAR SMD 0603	Yes	Lite-On Inc.	LTST-C191KRKT
4	4	FB1, FB2, FB3, FB4	FERRITE 220R@100MHZ 2A SMD 0603	Yes	Murata	BLM18EG221SN1D
8	1	J1	CON HDR-2.54 Male 1x3 Gold 5.84MH TH VERT	Yes	FCI	68000-103HLF
9	2	J2, J3	CON MODULAR JACK RJ45 10/100 MAGNETICS 4xLEDs SHIELD TH R/A	Yes	Bel Fuse	1840854-3
5	0	J4	CON HDR-2.54 Male 1x2 Gold 5.84MH TH VERT	No	FCI	77311-118-02LF
10	1	JP1	MECH HW JUMPER 2.54mm 1x2 GOLD	MECH	Sullins Connector Solutions	QPC02SXGN-RC
11	1	LABEL1	LABEL PCBA 18x6mm Datamatrix Assy# / Rev / Serial / Date	MECH	ACT Logimark AS	505462
6	1	Q1	TRANS BJT NPN MMBT3904 40V 200mA 310mW SOT-23-3	Yes	Micro Commercial Components Corporation	MMBT3904-TP
12	1	R1	RES MO 0.005R 1% 1/2W SMD 1206	Yes	Vishay	WSL12065L000FEA18
13	1	R2	RES TKF 10k 1% 1/10W SMD 0402	Yes	Panasonic	ERJ-2RKF1002X
7	1	R3	RES TKF 8.06k 1% 1/10W SMD 0603 AEC-Q200	Yes	Stackpole Electronics Inc	RMCF0603FT8K06
14	1	R4	RES TKF 1k 1% 1/10W SMD 0402	Yes	Panasonic	ERJ-2RKF1001X
15	1	R5	RES TKF 330R 1% 1/16W SMD 0402	Yes	Yageo	RC0402FR-07330RL
8	5	R8, R36, R51, R52, R53	RES TKF 10k 1% 1/10W SMD 0603	Yes	Vishay, ROHM	CRCW060310K0FKEA, MCR03EZPFX1002
16	4	R9, R29, R31, R38	RES TKF 1k 1% 1/10W SMD 0603	Yes	Panasonic	ERJ-3EKF1001V
17	2	R10, R11	RES TKF 100k 1% 1/10W AEC-Q200 SMD 0603	Yes	Panasonic Electronic Components	ERJ-3EKF1003V
9	1	R12	RES TKF 100R 1% 1/10W SMD 0603 AEC-Q200	Yes	D1_Rohm Semiconductor	KTR03EZPF1000
18	6	R13, R14, R15, R16, R17, R18	RES TF 0R SMD JUMPER 0603	Yes	SUSUMU	YJP1608-R001

TABLE B-1: BILL OF MATERIALS (CONTINUED)

Item	Qty	Reference	Description	Populated	Manufacturer	Manufacturer Part Number
19	6	R19, R20, R21, R22, R26, R28	RES TKF 22R 1% 1/10W SMD 0603	Yes	Panasonic Electronic Components	ERJ-3EKF22R0V
10	5	R23, R25, R32, R34, R37	RES TKF 4.7k 5% 1/10W SMD 0603	Yes	Panasonic	ERJ-3GEYJ472V
20	0	R24, R27	RES TKF 330R 1% 1/10W SMD 0603	Yes	Panasonic	ERJ-3EKF3300V
21	0	R30, R33, R35	RES TKF 4.7k 5% 1/10W SMD 0603	Yes	Panasonic	ERJ-3GEYJ472V
11	1	R39	RES TKF 12.4k 1% 1/10W SMD 0603	Yes	Yageo	RC0603FR-0712K4L
22	8	R40, R41, R42, R43, R44, R45, R46, R47	RES TKF 330R 1% 1/10W SMD 0603	Yes	Panasonic	ERJ-3EKF3300V
23	0	R48, R49, R50, R54, R55	RES TKF 10k 1% 1/10W SMD 0603	No	ROHM	MCR03EZPFX1002
12	0	R56, R58	RES TKF 0 OHM 1/10W 0603	Yes	Bourns	CR0603-J/-000ELF
24	3	R57, R59, R60	RES TKF 0 OHM 1/10W 0603	Yes	Bourns	CR0603-J/-000ELF
25	1	R61	RES TKF 2.2k 1% 1/10W SMD 0402	Yes	Panasonic	ERJ-2RKF2201X
13	0	R62, R63	RES TKF 1k 1% 1/10W SMD 0603	Yes	Panasonic	ERJ-3EKF1001V
26	1	SW1	SWITCH DIP 1 SPST 24V 25mA 418117270901 TH	Yes	Würth Elektronik	418117270901
27	4	TP1, TP4, TP6, TP8	MISC, TEST POINT MULTI PURPOSE MINI RED	Yes	Keystone	5000
14	2	TP2, TP9	MISC, TEST POINT PC MINI, 0.040" D YELLOW	Yes	Keystone	5004
28	3	TP3, TP5, TP7	MISC, TEST POINT MULTI PURPOSE MINI BLACK	Yes	Keystone	5001
29	1	U1	PM-LV2 Regulator PCB Module	Yes	Microchip Technology	AC59B05A
15	1	U2	MCHP INTERFACE ETHERNET KSZ8795CLX LQFP-80	Yes	Microchip Technology	KSZ8795CLX
30	1	U3	MCHP ANALOG SUPERVISOR 0.4V to 5.5V MIC2790N-04VD6 SOT-23-3	Yes	Microchip Technology	MIC2790N-04VD6
31	1	U4	MCHP MEMORY SERIAL EEPROM 1kb I2C 24AA014H-I/SN 8SOIC	Yes	Microchip Technology	24AA014H-I/SN
16	1	U5	IC SWITCHER SN74LVC1G66DCKR SINGLE BILATERAL SWITCH SC70-5	Yes	Texas Instruments	SN74LVC1G66DCKR
32	1	Y1	MCHP CRYSTAL 25Mhz 10pF SMD L3.2W2.5H0.8	Yes	Microchip Technology	VXM7-9013-25M0000000

NOTES:

Appendix C. PCB Layers

C.1 INTRODUCTION

This appendix contains the KSZ8795's silkscreen top and bottom layers.

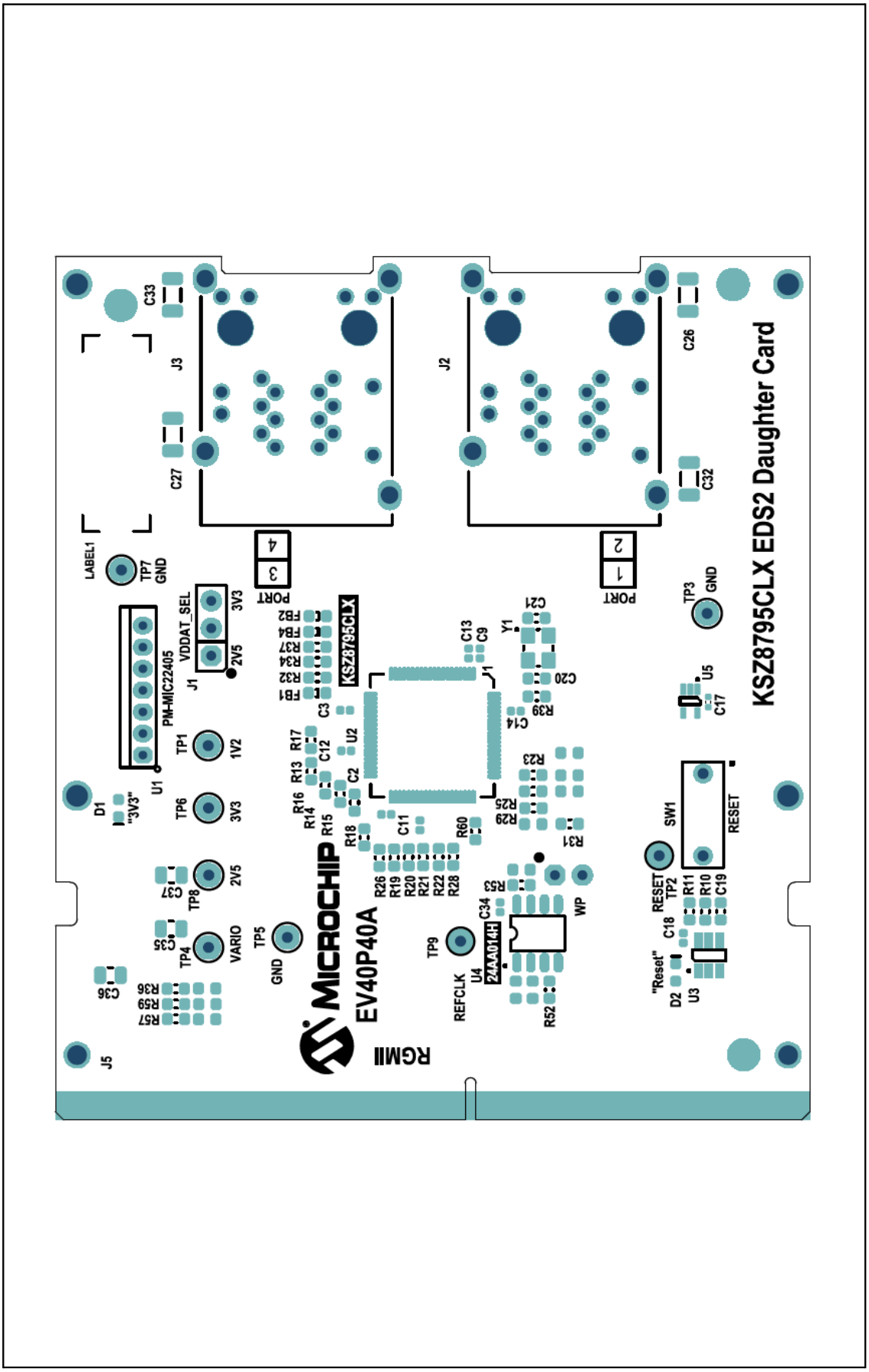


FIGURE C-1: KSZ8795 EDS2 DAUGHTER CARD TOP SILK SCREEN

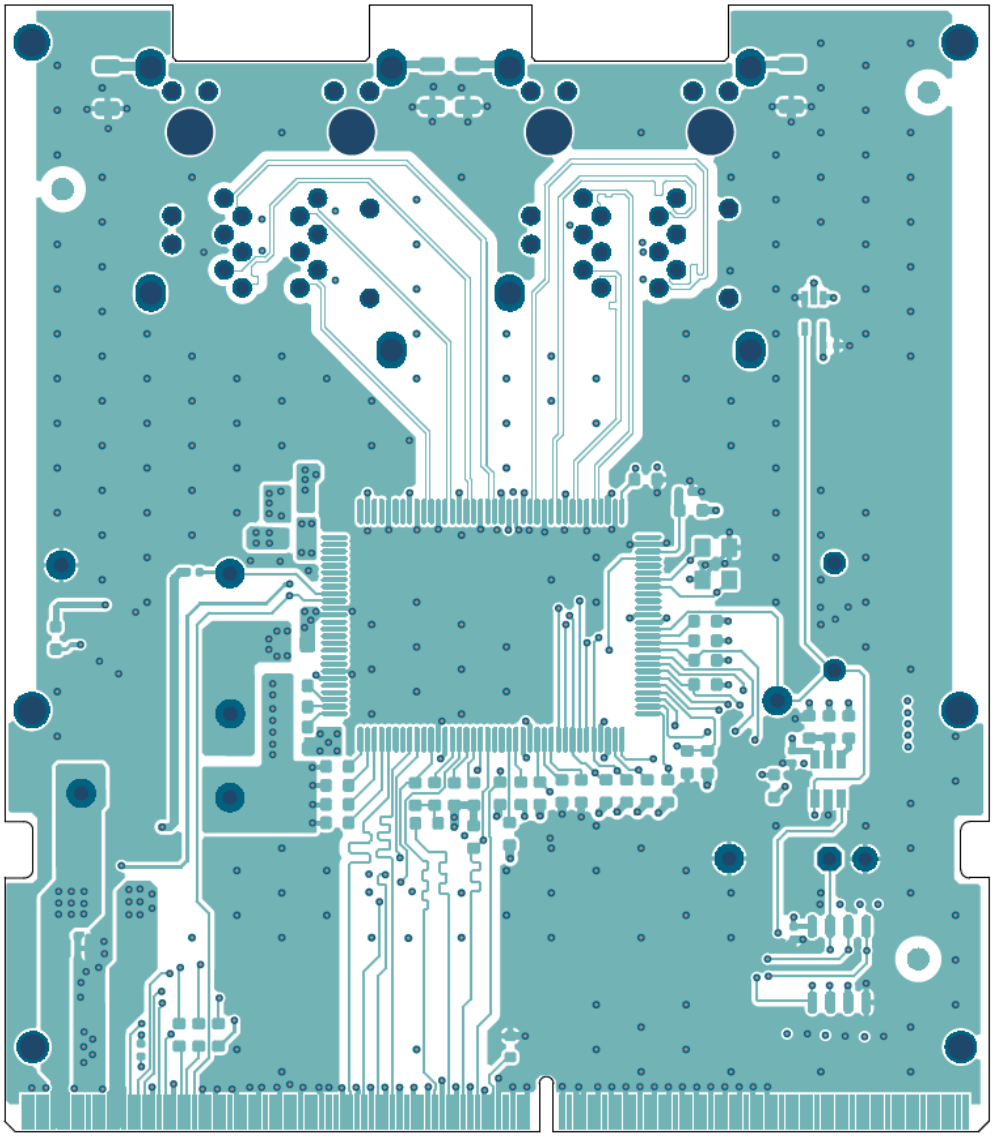


FIGURE C-2: KSZ8795 EDS2 DAUGHTER CARD TOP COPPER

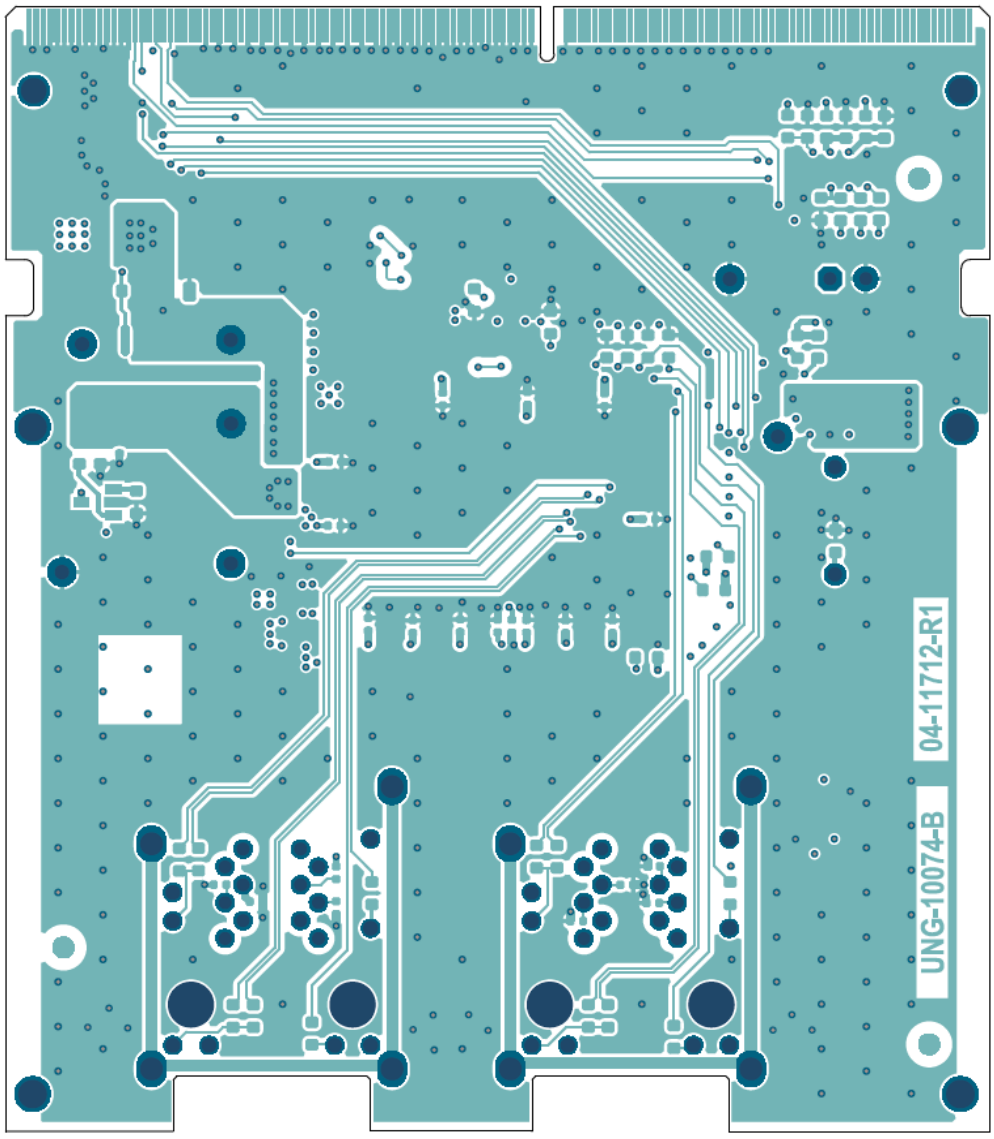


FIGURE C-3: KSZ8795 EDS2 DAUGHTER CARD BOTTOM COPPER

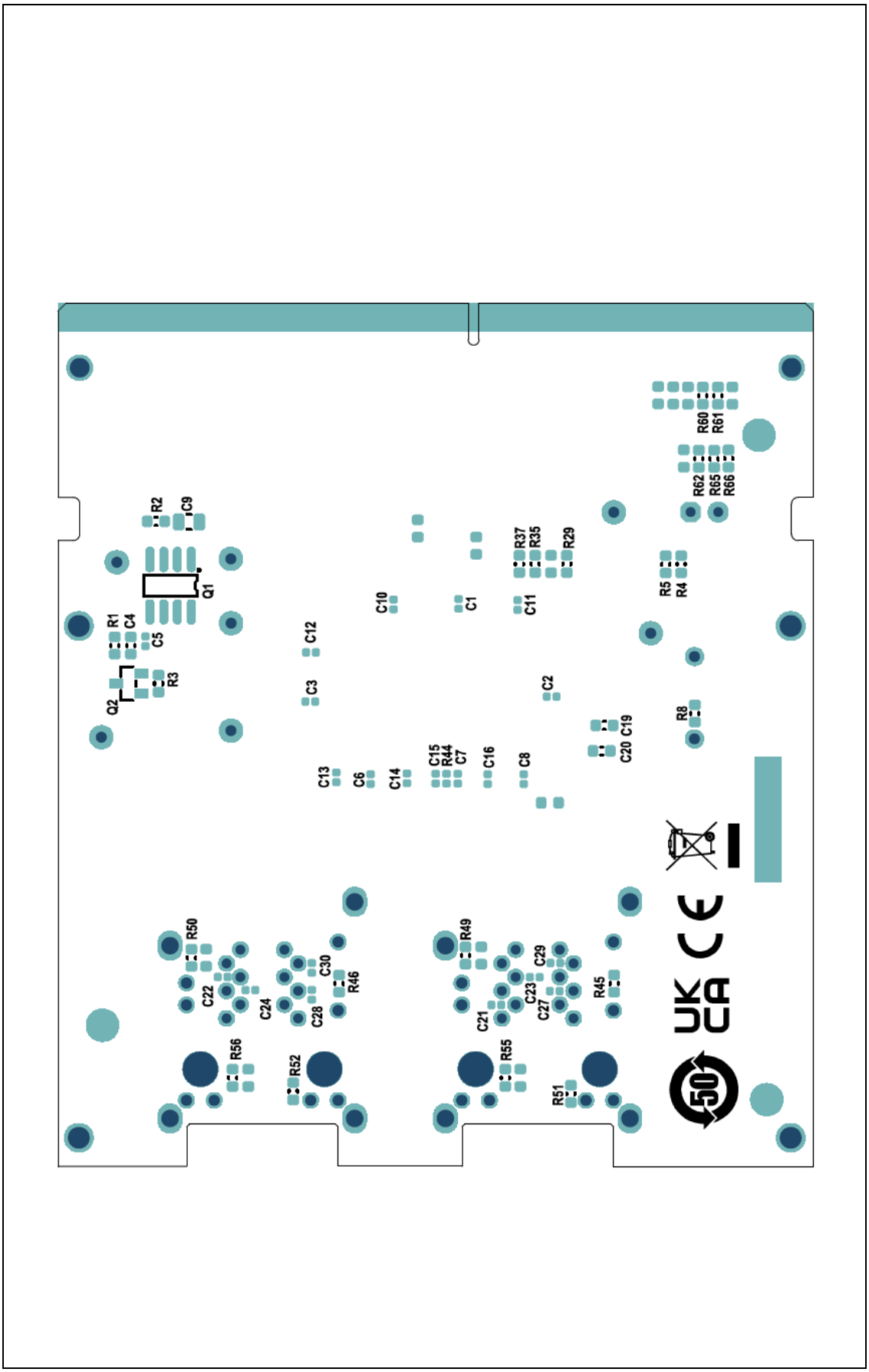


FIGURE C-4: KSZ8795 EDS2 DAUGHTER CARD BOTTOM SILK SCREEN