

# Instant Internet Evaluation Board II-EVB-300

## User Manual Version 1.0



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## Introduction

This User Manual is intended to familiarize customers with Connect One's Instant Internet Evaluation Board (II-EVB-300), which is an evaluation platform for the CO710AG Internet Controller. II-EVB-300 includes the CO710AG mounted in a carrier module in PLCC68 form factor, a Multi-Tech SocketModem™ and a 10/100BaseT Ethernet LAN controller. An optional 10BaseT daughter board also is available. CO710AG utilizes the AT+i™ command set, a powerful set of Internet protocol commands developed by Connect One to manage Internet connectivity through a dial-up modem, wireless modem, wired LAN or 802.11b Wireless LAN connection.

II-EVB-300 enables sending and receiving textual and binary, MIME-encoded email messages; downloading HTML pages or files from a Web server, or items from within a page; Web serving; as well as managing TCP or UDP socket communications over the Internet. It also includes an FTP client, Telnet client and Serial-to-IP routing via the SerialNET™ mode of operation. With the II-EVB-300, this is achieved from any device, machine or system without the need to be attached to a PC.

Connect One, iChip, Internet Controller, AT+i, Instant Internet, and SerialNET are trademarks of Connect One Ltd. SocketModem is a trademark of Multi-Tech Systems, Inc.

## Unpacking

Take the II-EVB-300 out of its box. Included in the box are:

- The II-EVB-300 motherboard including CO710AG on a carrier board, SocketModem and the 10/100BaseT LAN controller daughter board.
- A power supply.
- A serial cable with two DB-9 connectors.
- A phone cable with two RJ-11C connectors.
- An Ethernet cable with two RJ-45 connectors.
- A CD containing the II-EVB-300 Documentation, Utilities and Configuration Program.

## Connections

- Connect one end of the RS232 cable to the serial port on the II-EVB-300 (J4) and connect the other DB-9 connector to the COM1 or COM2 serial port on your PC or to the serial port of your embedded device.

- Connect one end of the phone cable to the II-EVB-300 (J10) and connect the other end to the wall phone jack.
- Connect one end of the Ethernet cable to the daughter board (J3) and connect the other end to an Ethernet wall socket, Ethernet switch or hub.
- Finally, connect the II-EVB-300 to the power supply.

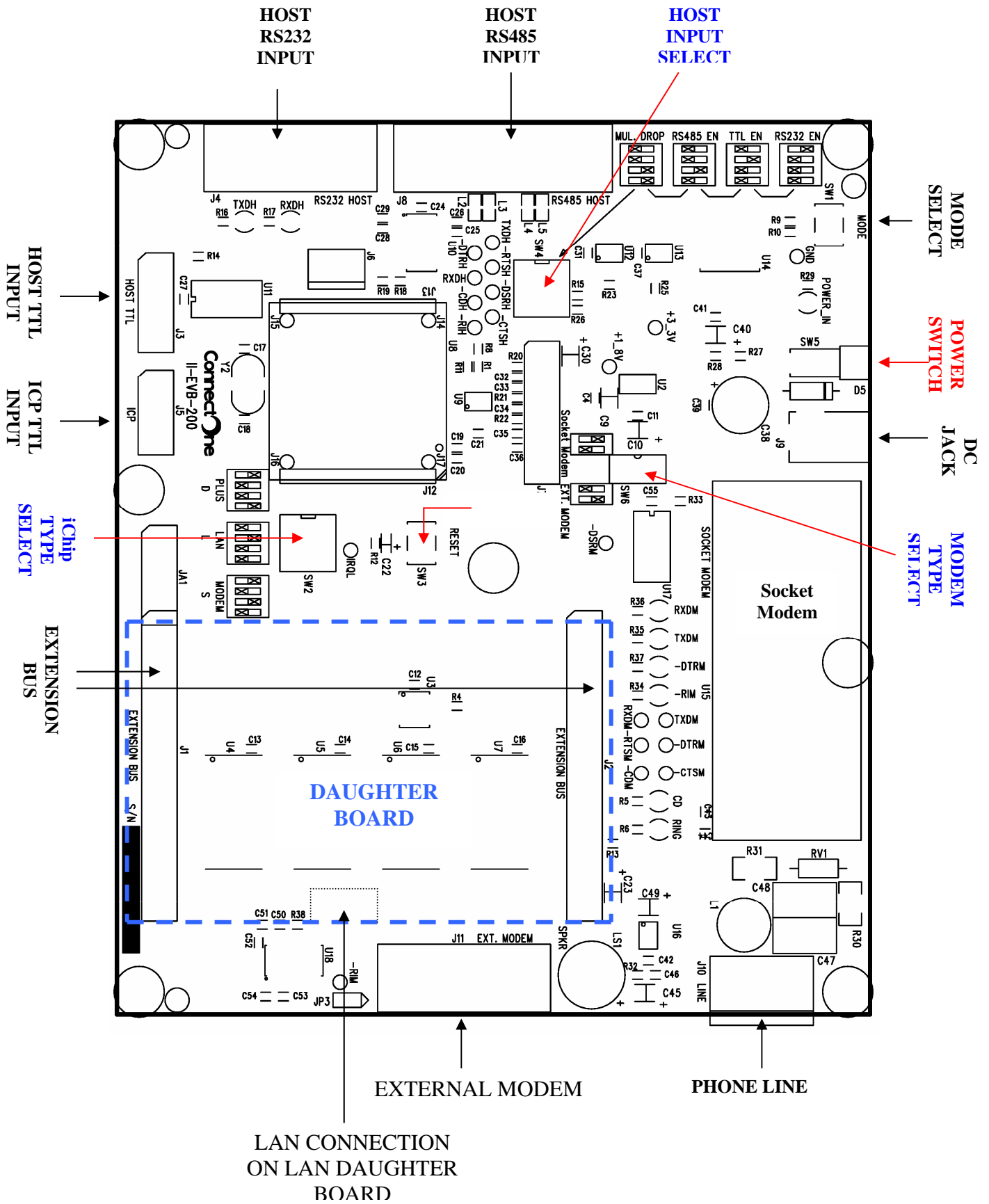
## Installing the II-EVB-300 Utilities and Evaluation Program

II-EVB-300 enables the user to evaluate the iChip without changing anything in the user's current development environment. That is, using a simple terminal program on a PC, the user can issue AT+i commands to the iChip and get responses. AT+i commands are used to configure iChip parameter values into iChip's flash memory and activate Internet tasks such as email Send/Receive, Web access, sockets, FTP sessions, etc. A full description of the AT+i protocol can be found in the AT+i Programmer's Manual on the release CD or on Connect One's Web site at <http://www.connectone.com>, in the Documentation section.

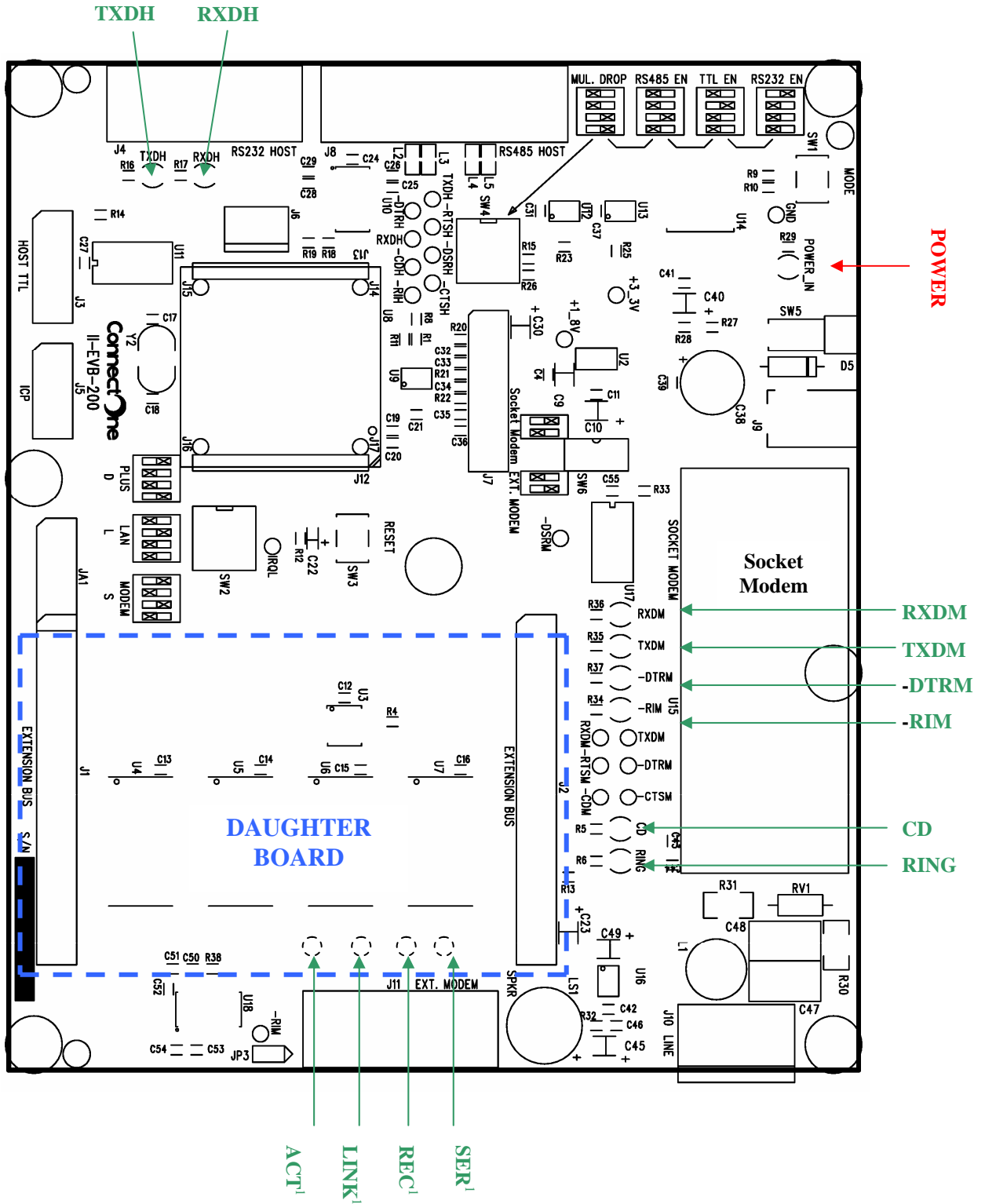
To aid the user to easily evaluate iChip, Connect One supplies the iChipConfig Utility. This is a Windows-based GUI program that contains intuitive dialog boxes to fully configure iChip, without needing to be familiar with AT+i commands. It also contains a local iChip firmware upgrade functionality. iChipConfig utility also supports performing specific Internet communication tasks such as sending and receiving Emails, activating iChip's Web sites, entering SerialNET mode, etc.

The latest iChipConfig Utility version and User Manual can be found on the release CD or on Connect One's Web site at <http://www.connectone.com> in the Support section. Additional information on the iChipConfig utility and its usage, may be found in the iChipConfig Utility User's Manual.

# Connectors & Switch Positions



# LED Positions



<sup>1</sup> These LEDs are on the IIDB-SMC-100 daughter board

## Dip Switch Tables

SW2.1	SW2.2	SW2.3	SW2.4	iChip Type
ON	OFF	OFF	ON	iChip Plus or CO710AG or CO210AG (Default iChip Plus)
OFF	ON	OFF	OFF	iChip LAN (*)
ON	OFF	ON	OFF	iChip (*)

Figure 1: iChip type select

SW4.1	SW4.2	SW4.3	SW4.4	Host Input Select
ON	OFF	OFF	OFF	RS232 INPUT ENABLE (Default)
OFF	ON	OFF	OFF	TTL INPUT ENABLE
OFF	OFF	ON	OFF	RS485 INPUT ENABLE
OFF	OFF	ON	ON	RS485 INPUT WITH MULTI-DROP ENABLE (for future purpose)

Figure 2: Host Input Signal Select

SW6.1	SW6.2	Modem Type Select
ON	OFF	SOCKET MODEM ENABLE
OFF	ON	EXTERNAL MODEM ENABLE

Figure 3: Modem Select

\* Applicable only for the CO561AD and CO661AL families. For CO210AG and CO710AG carrier modules, use default settings.

**Bill of Materials:**

<b>#</b>	<b>Qty</b>	<b><u>Reference</u></b>	<b><u>Description</u></b>	<b><u>Manufacturer</u></b>
1	14	C19,C21,C24,C27,C31, C37,C39,C41,C42,C43,C44, C46,C50,C55	0.1UF	Any
2	4	C40,C45,C49,C23	10UF/16V	any
3	2	C17,C18	22PF	Any
4	1	C20	1NF	Any
5	1	C22	1UF/16V	Any
6	8	C25,C26,C28,C29,C51,C52, C53,C54	0.47UF	Any
7	1	C38	270UF/35V	Any
8	2	C47,C48	1NF/3KV	Any
9	9	D1,D2,D3,D4,D6,D7,D8,D9, D10	GREEN LED	Any
10	1	D5	1N4001	Any
11	1	JA1	HEADER 5X2 FEM	Any
12	1	JP3	JUMPER 2 PIN	Any
13	2	J1,J2	HEADER 20X2 FEM	Any
14	1	J3	HEADER 5X2	Any
15	1	J4	DB9 FEM-PCB	Any
16	1	J5	HEADER 4x2	Any
17	1	J8	DB15 FEM-PCB	Any
18	1	J9	DC-JACK-MALE	Any
19	1	J10	RJ11	Any
20	1	J11	DB9 MALE-PCB	Any
21	1	LS1	HPE1206	50Ω speaker PROMOVER
22	1	L1	2961666681	Fair Rite Production CORP
23	4	L2,L3,L4,L5	BK2125HS102	Taiyo Yuden INC
24	1	RV1	DSS-301L	Mitsubishi
25	1	R1	0	Any
26	3	R8,R11,R12	10K	Any
27	7	R9,R14,R19,R23,R25,R33,R38	100K	Any
28	1	R10	4.7K	Any
29	1	R13	100	Any
30	4	R15,R18,R26,R28	1.8K	Any
31	9	R5,R6,R16,R17,R29,R34, R35,R36,R37	470	Any



<b>#</b>	<b>Qty</b>	<b><u>Reference</u></b>	<b><u>Description</u></b>	<b><u>Manufacturer</u></b>
	1	R27	1.2K	Any
	2	R30,R31	2/2010	Any
	1	R32	10	Any
	2	SW1,SW3	TACK_SW	Any
	2	SW4,SW2	SW-DIP-4	Any
	1	SW5	SWITCH	Any
	1	SW6	SW-DIP-2	Any
	2	U8	CO710AG-CM	Connect One Ltd.
	1	U9	SP708RCN	Sipex
	1	U10	SP3238ECA	Sipex
	2	U17,U11	74LV244	On Semi
	2	U13,U12	SP3485CN	Sipex
	1	U14	LT1086CM	Linear
	1	U15	MT34000SMI	Multi-Tech
	3	U15 CONNECTOR	SQT-109-01-L-S-MW	Samtec
	1	U15 CONNECTOR	SQT-111-01-L-S-MW	Samtec
	1	U16	LM386	NSC
	1	U18	SP3243ECA	Sipex
	1	Y2	18.432MHz	Any

## Daughter Boards

The II-EVB-300 motherboard accepts several daughter boards that enhance the default connectivity options.

The daughter boards are:

- SMC 10/100BaseT LAN91C111 Ethernet controller. A detailed reference design that shows how to connect this controller to iChip can be found at: <http://www.connectone.com/RefDesignFiles/10-100BaseT%20LAN%20Using%20CO661AL-L%20Ref%20Design.pdf>
- ASIX 10/100BaseT AX88796L Ethernet controller. A detailed reference design that shows how to connect this controller to iChip can be found at: <http://www.connectone.com/RefDesignFiles/10-100BaseT%20LAN%20Using%20CO661AL-L%20Ref%20Design.pdf>
- Cirrus Logic Crystal LAN 10BaseT CS8900A Ethernet controller. A detailed reference design that shows how to connect this controller to iChip can be found at: [http://www.connectone.com/RefDesignFiles/Dual%2010BaseT%20Internet%20Modem%20Using%20CO561AD-D%20Ref%20Design\(1\).pdf](http://www.connectone.com/RefDesignFiles/Dual%2010BaseT%20Internet%20Modem%20Using%20CO561AD-D%20Ref%20Design(1).pdf)
- IIDB-200CF WiFi daughter board contains a Compact Flash 802.11b module that supports the Prism 2.5 or 3.0 chipset - [http://www.connectone.com/RefDesignFiles/802-11b\\_WiFi\\_using\\_CO710AG.pdf](http://www.connectone.com/RefDesignFiles/802-11b_WiFi_using_CO710AG.pdf)

# Appendix 1: Schematics

## II-EVB-300 Motherboard

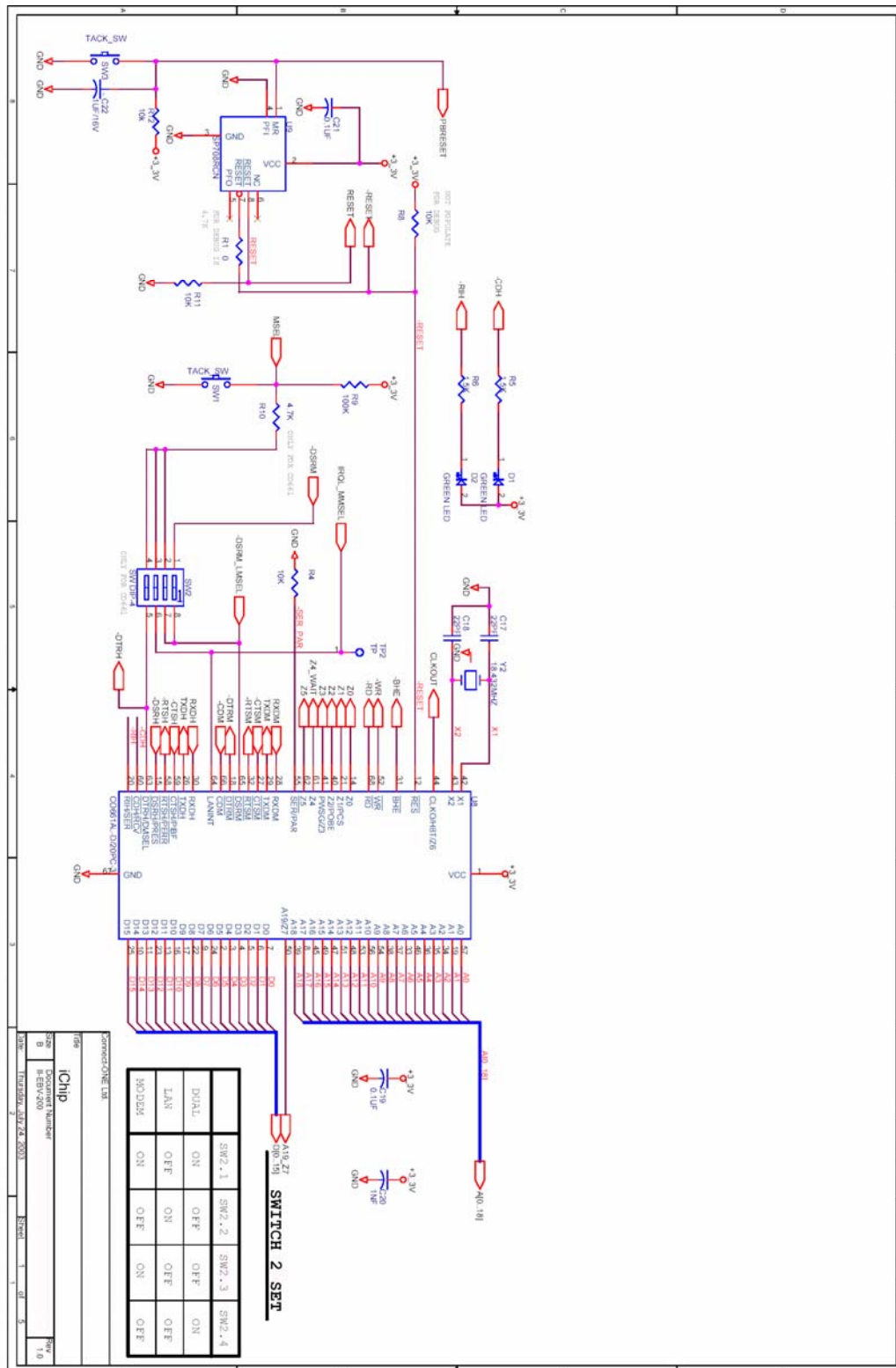


Figure 4: iChip Circuit

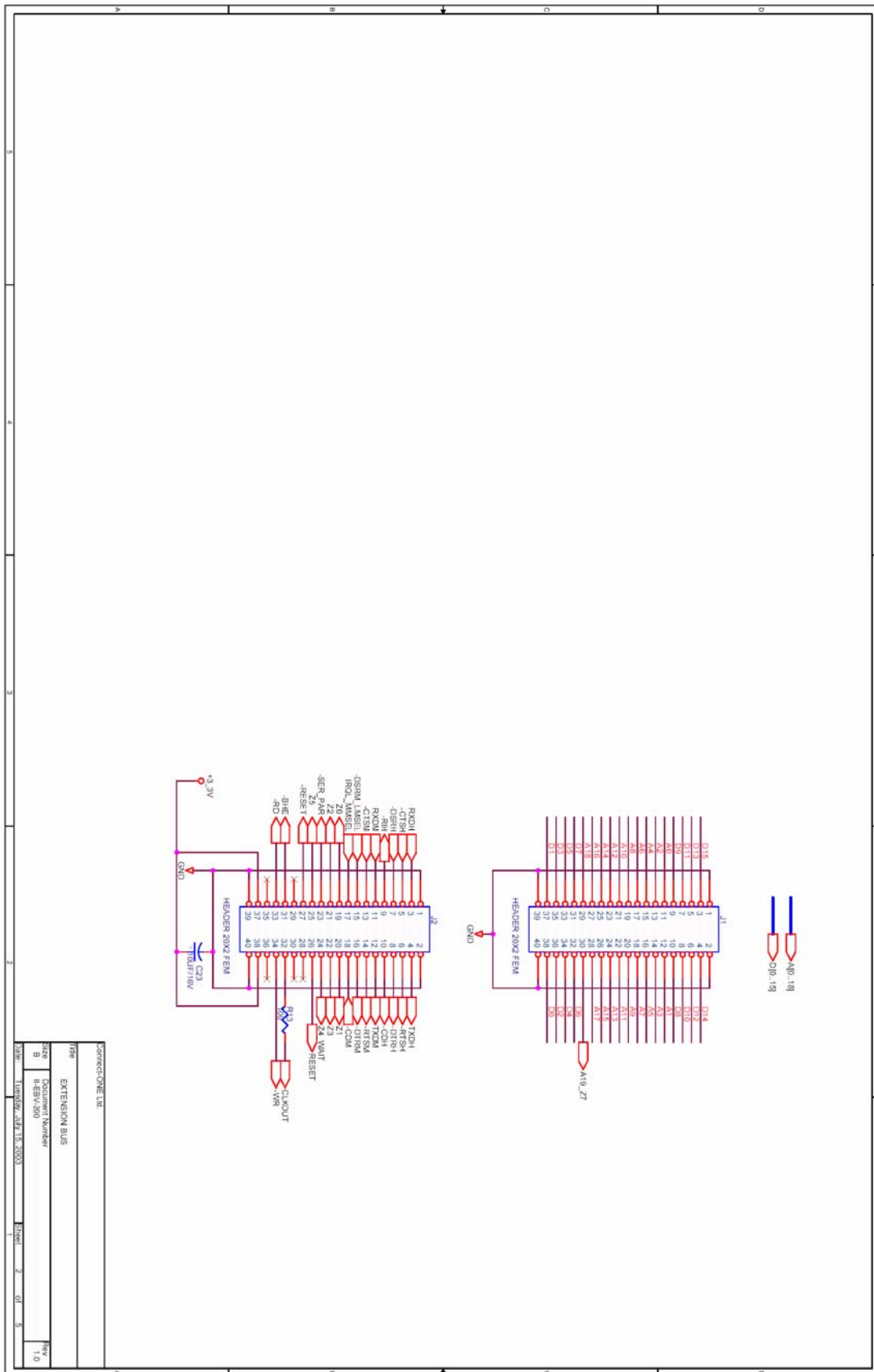


Figure 5: II-EVB-200 Extension BUS

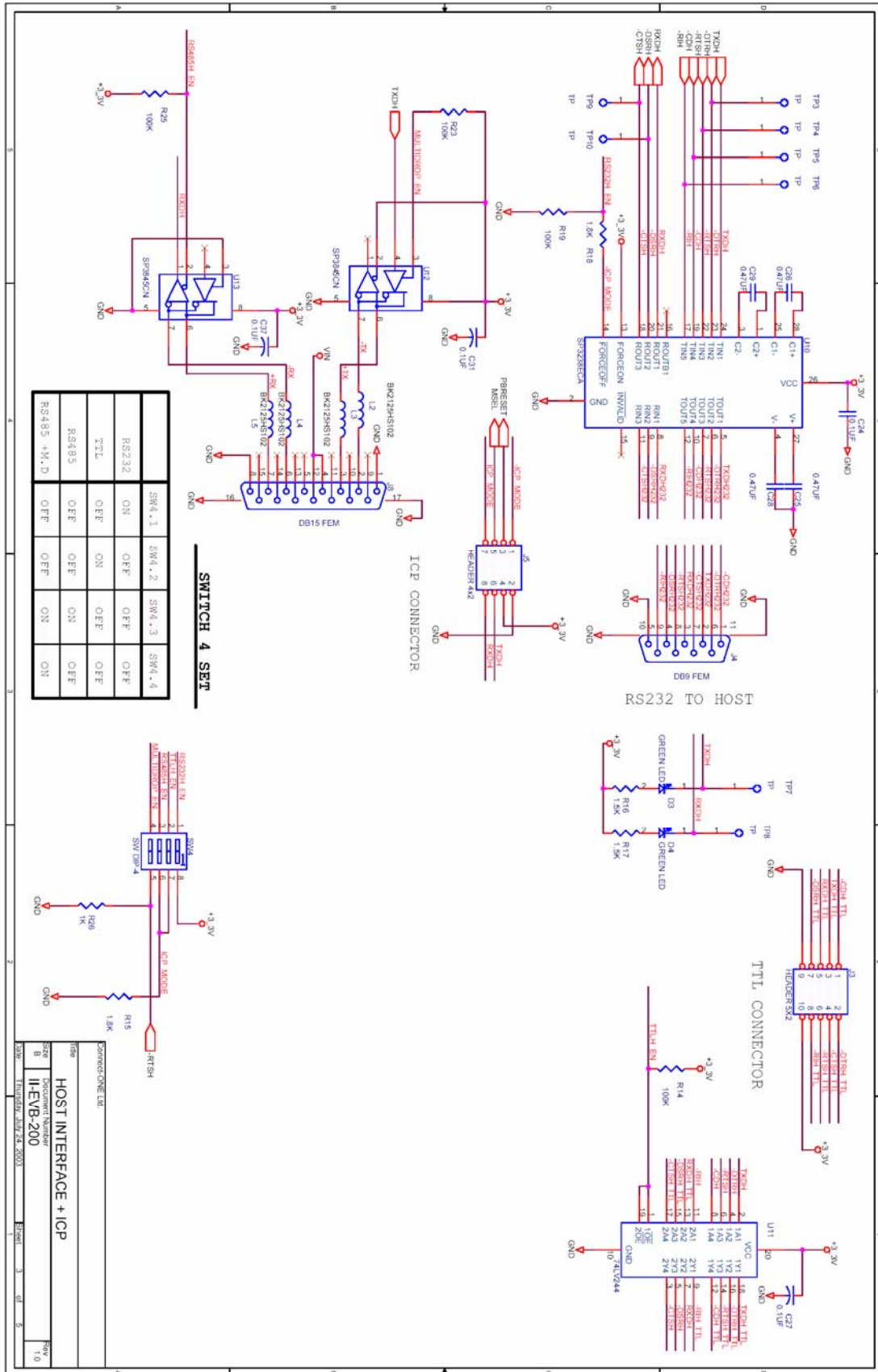


Figure 6: Host Interface and In-Circuit Programming (ICP)

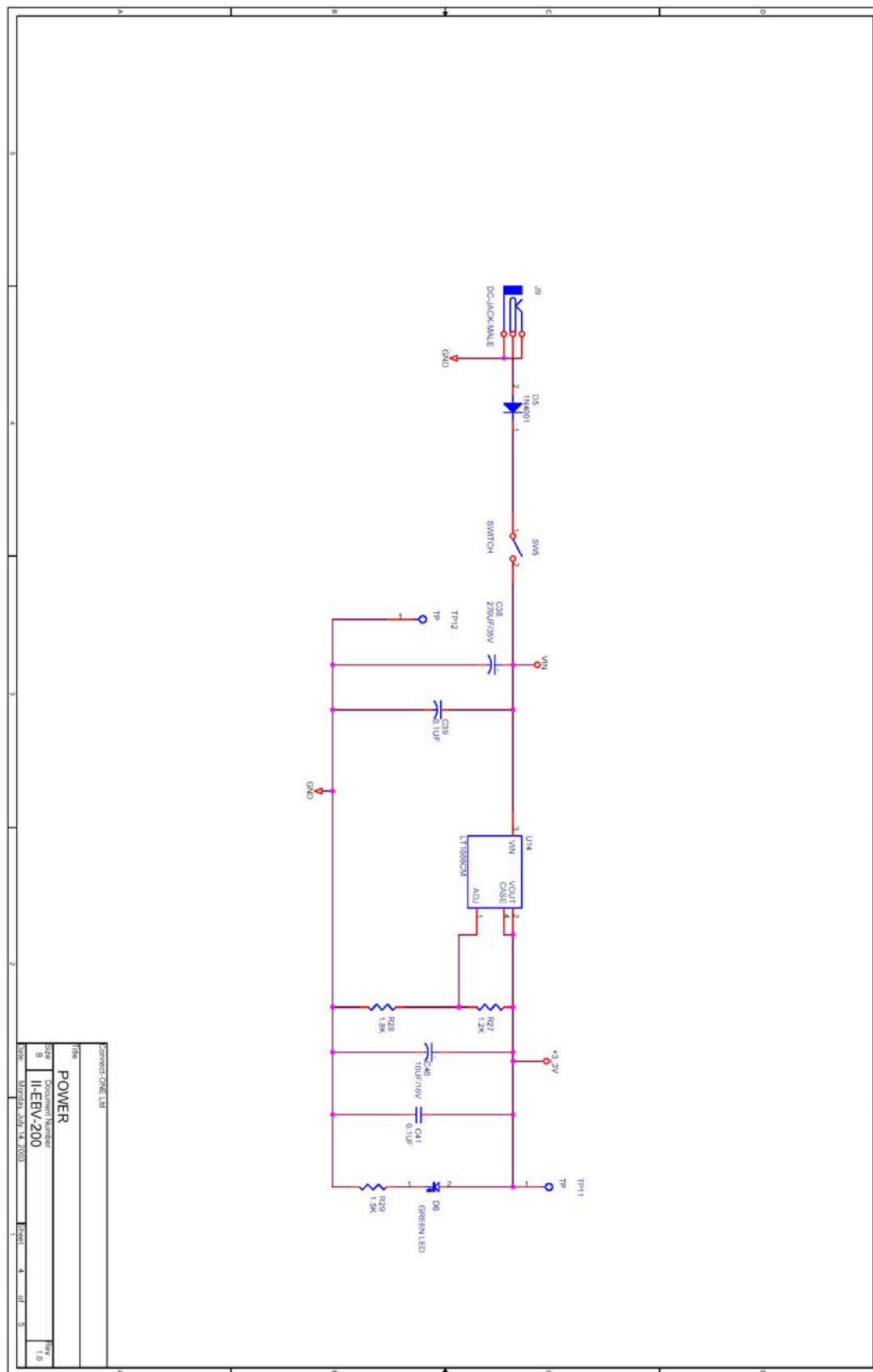


Figure 7: Power Circuit

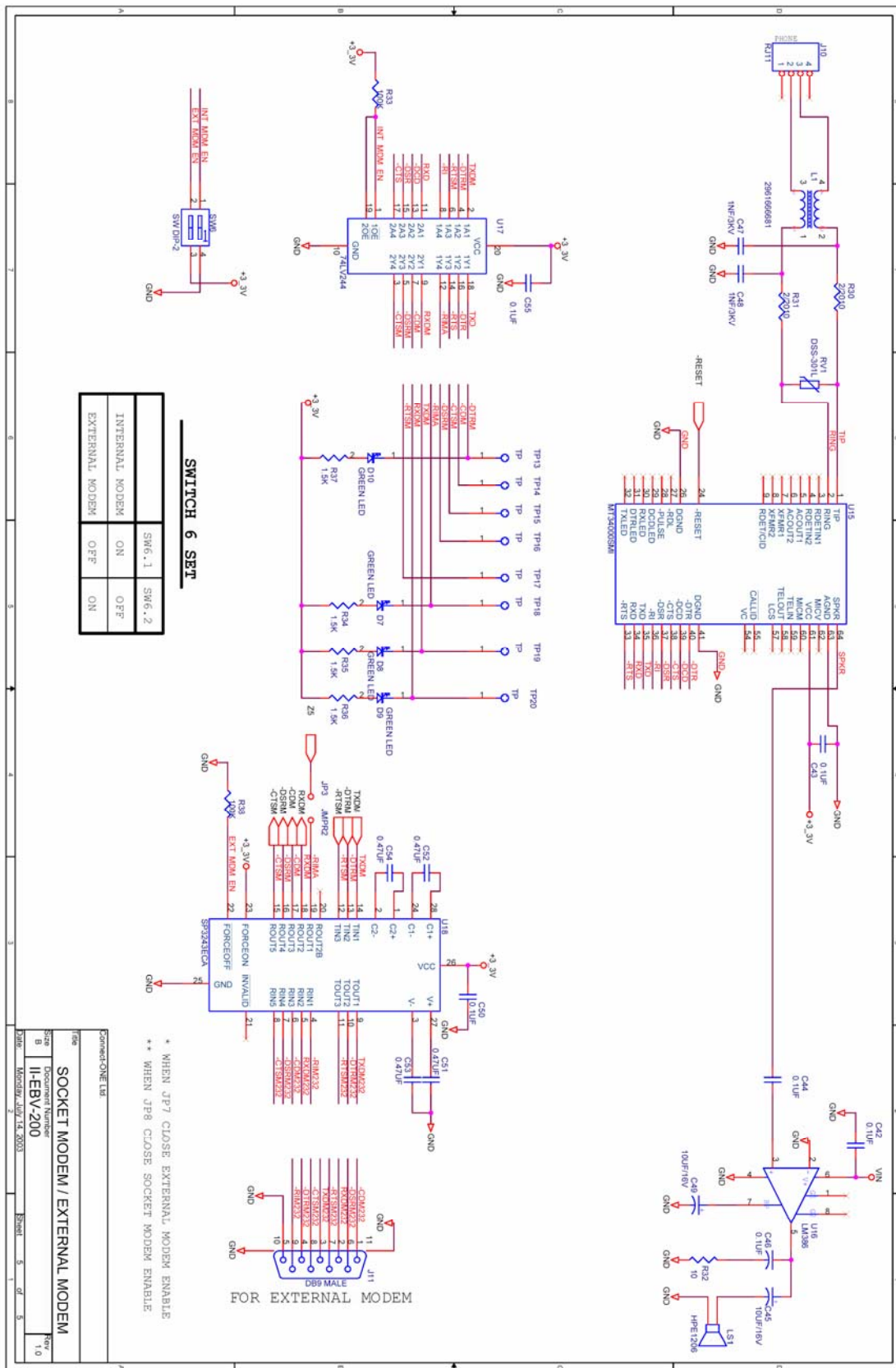


Figure 6: Modem Circuit

# SMsC 10/100BaseT Ethernet LAN Daughter Board

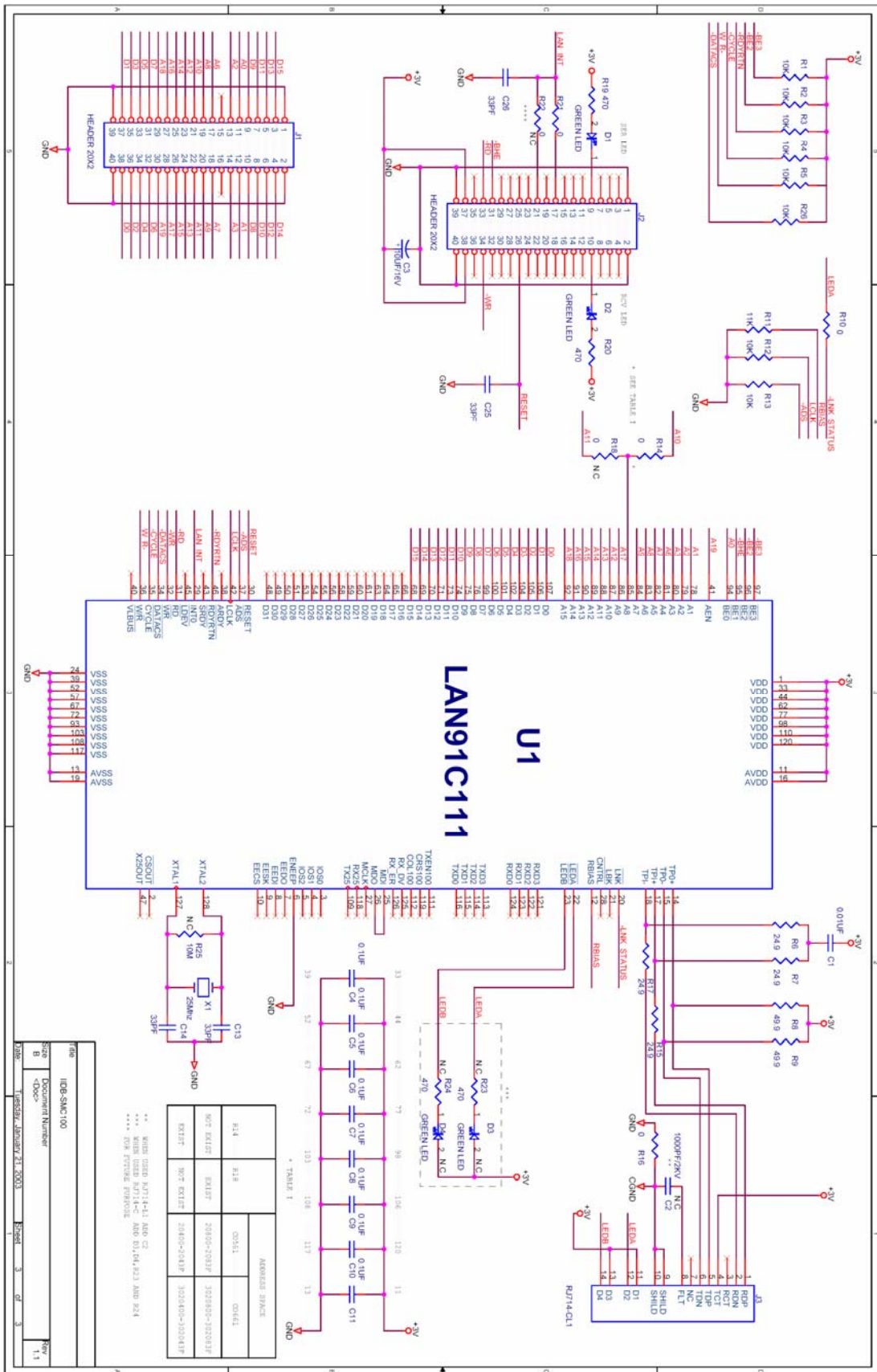


Figure 7: IIDB-SMC100 Schematic



# ASIX 10/100BaseT Ethernet LAN Daughter Board

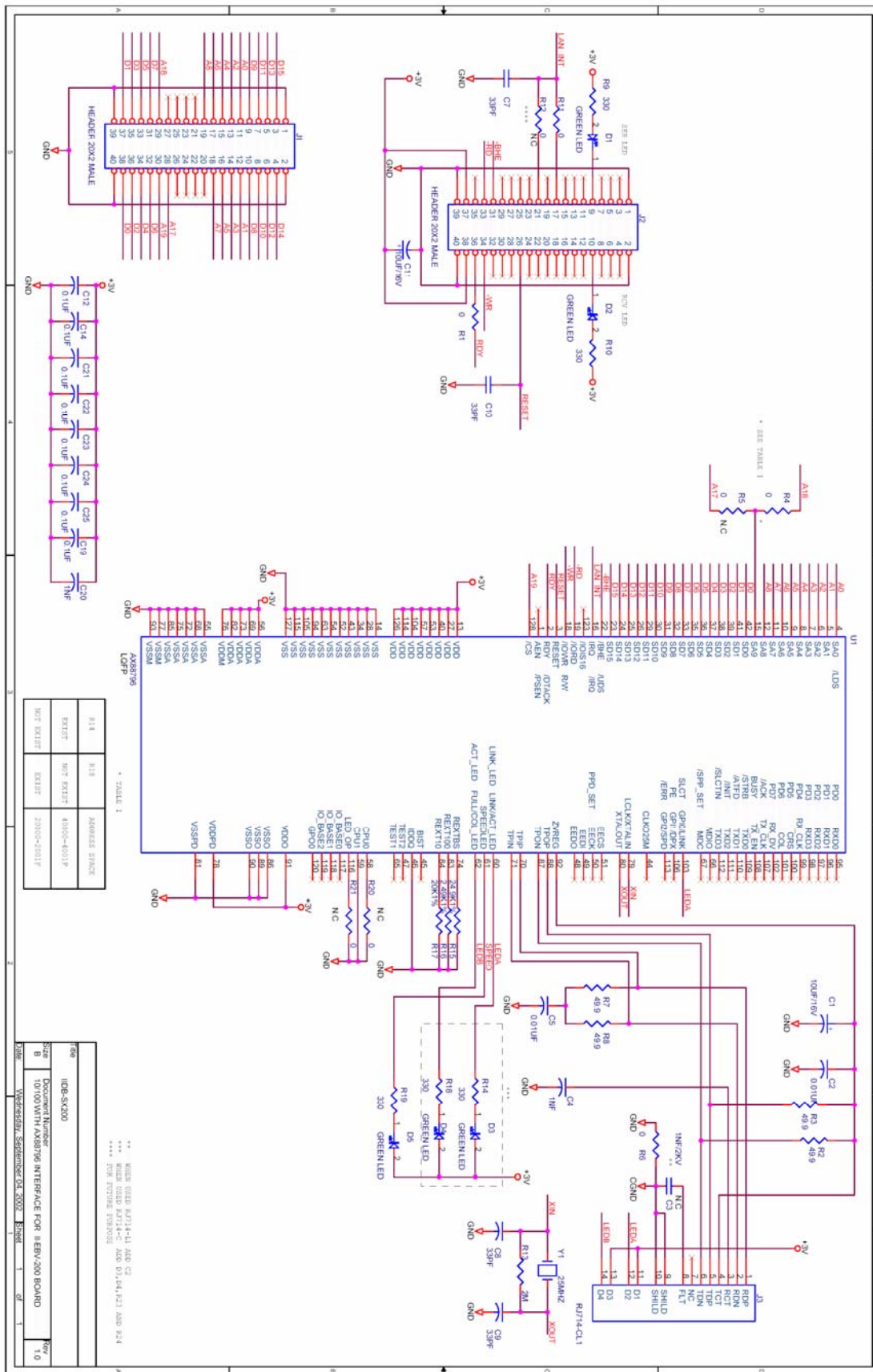


Figure 8: IIDB-SX200 Schematic

# Cirrus Logic Crystal LAN 10BaseT Ethernet LAN Daughter Board

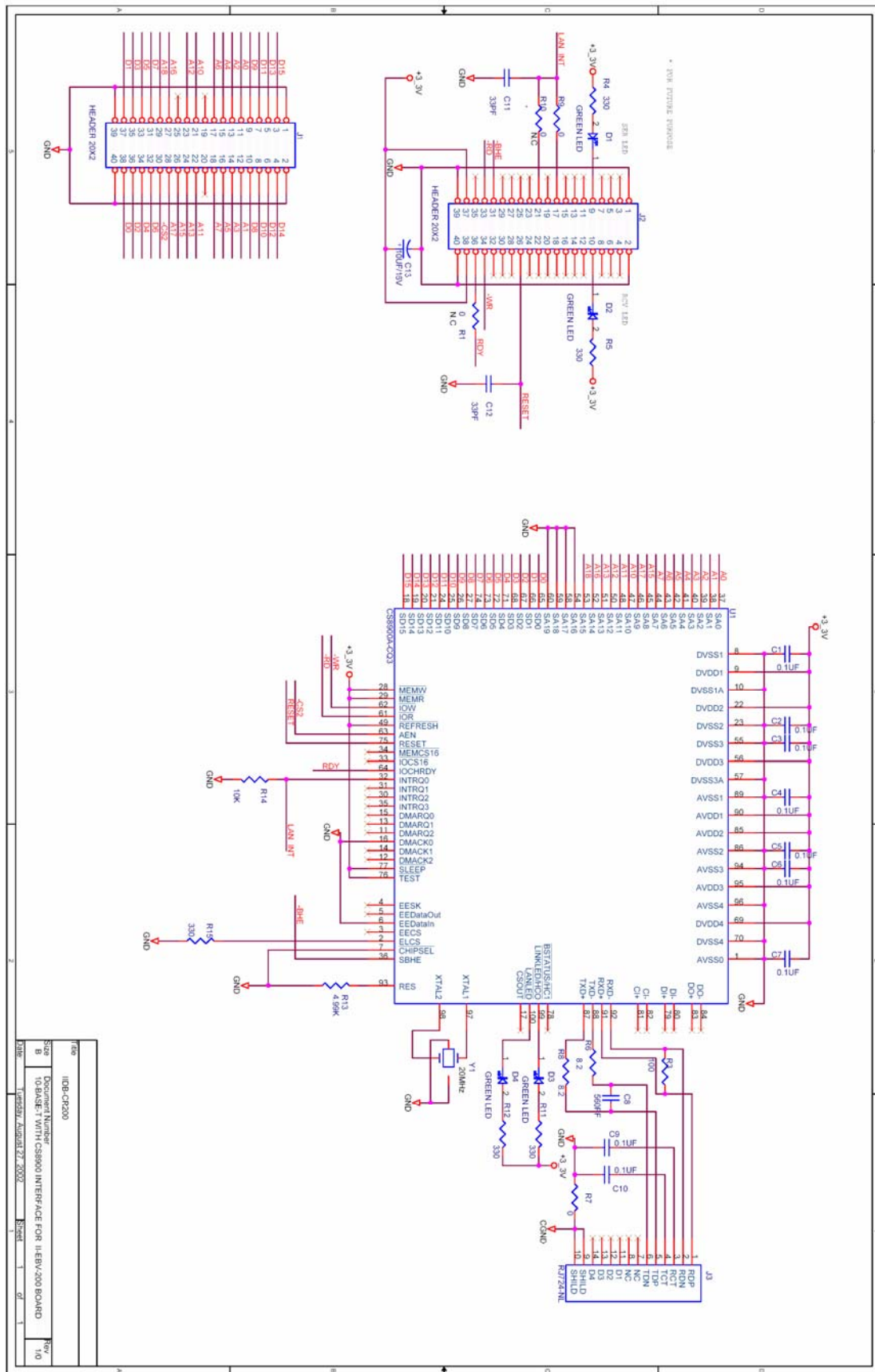


Figure 9: IIDB-CR200