ZTEWelink

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G2000 Dev Board User Guide

Version 1.0, 2015-01-26

G2000

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Revision History

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1.0	2015-01-26	1st version

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Contents

G2000 Dev Board User Guide I

Legal Information II

1 Overview 1

1.1 Introduction to the Dev Board 1

1.2 Modules Support by G2000 1

2 Function Introduction 3

2.1 Functional Diagram 3

2.2 Function Identifying 4

2.3 Function Introduction 5

3 Dev Board schematic diagram 10

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1 Overview

1.1 Introduction to the Dev Board

The G2000 Dev Board provides a complete solution based on the data functions of the CDMA&GSM modules.

The Dev Board consists of two development boards. One is mother board and the other is interface board, and it provides the power supply interface, USB interface, UART interface and some test points.

For designers who adopt the module in their designs, the Dev Board facilitates their module-based programming and troubleshooting at the project development stage. In order to facilities and simplify the use of Dev Board, and support kinds of modules, we use the jumpers as less as possible, and reserve the interfaces as more as possible, to meet the requirement of plug and play.

The Dev Board provides the following interfaces:

- Two RS-232 interfaces, one 8-line UART interface
- Support Standard Subscriber Identity Module (SIM) card interface, can adapt to 1.8V/2.8V level automatically
- Support audio DAC, can be configured by MCU/Module through I2C bus
- Power supply can be switched between USB supply and DC power supply

1.2 Modules Support by G2000

The Dev Board supports MG2639 V1, MG2639 V2, MG2639 V3, MC8332, MC8618, MG2618 modules.

Table 1－1 Module list supported by G2000 Dev board

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Support Modules	Corresponding Interface board	Remark
MG2639 V1	MG2639 V3 CVB_B	
MG2639 V2	MG2639 V3 CVB_B	
MG2639 V3	MG2639 V3 CVB_B	
MC8332	MG2639 V3 CVB_B	
MC8618	MC8618 CVB_B2	
MG2618	MG2618 CVB_B	

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2 Function Introduction

2.1 Functional Diagram

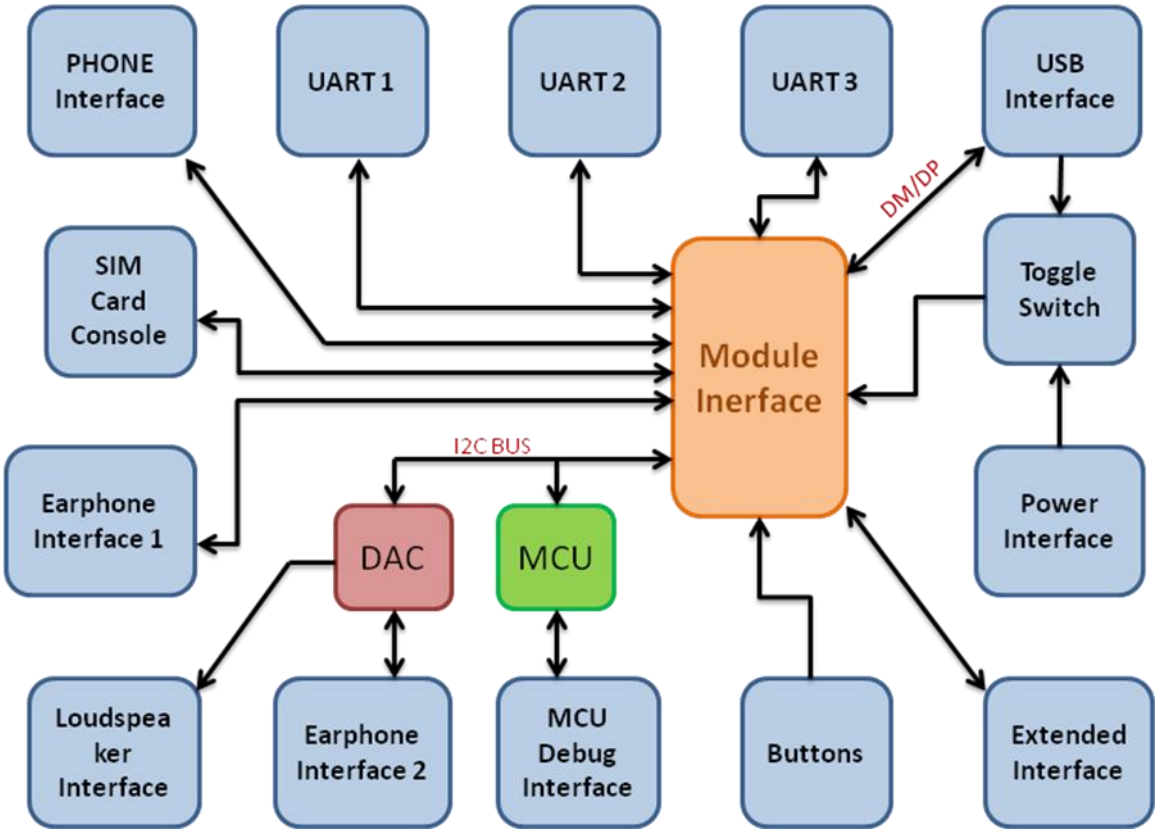

Figure 2－1 G2000 Dev Board Functional Diagram

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2.2 Function Identifying

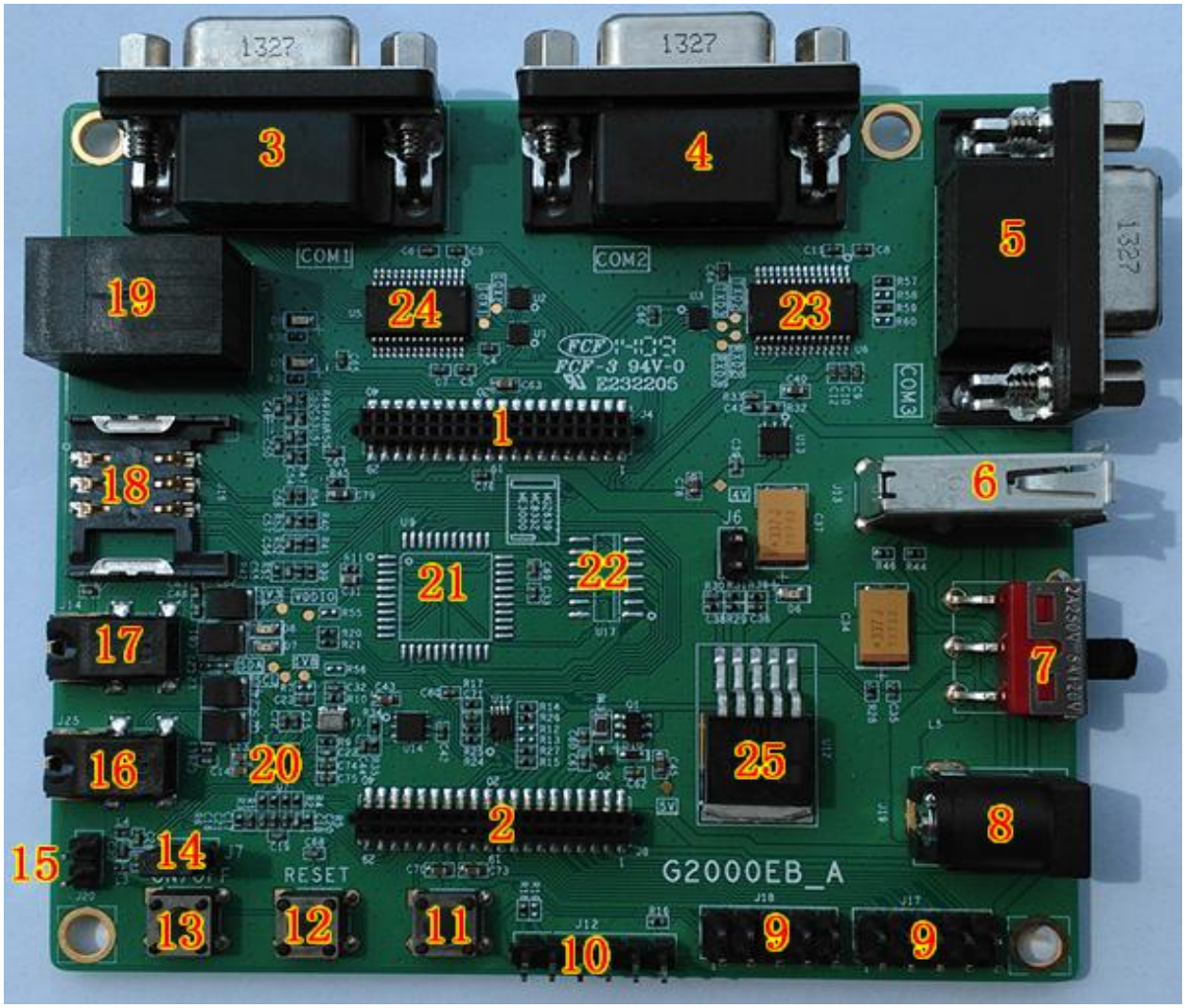

Figure 2－2 The Mother Board and Indentifying

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2.3 Function Introduction

No.	Annotation	Function Introduction																							
1	Module Interface 1 (J4)	The Module Interface's signals Introduction (Marked as J4 on Dev Board)																							
		Signal Description	Receiver MIC2 anode	Receiver MIC2 cathode	NC	Microphone speaker anode	Microphone speaker cathode	Network Signal indicator(LED)	signal indicator(LED)	Power-on/off	Ground	Module Power supply	NC	Data carrier detect	Data terminal is ready	Clear to send	Ready to send	Resetting signal	SIM card power supply	SIM card clock	SIM card data	SIM Card reset
			40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2
		Signal Deification	MIC2_P	MIC2_N	EAR_DET	SPK_1P	SPK_1N	RSSI_LED	SMS_LED	ON/OFF	GND	VCC_4V_3V3	VCHG	DCD	DTR	CTS	RTS	SYS_RESET	V_CARD	CARD_CLK	CARD_DATA	CARD_RST
			MIC1_P	MIC1_N	RECV	SPK_2P	SPK_2N	AUXN	AUXP	V_MSN	GND	VCC_4V_3V3	VCC_4V_3V3	DSR	RI	TXD	RXD	GPIO	CTS2	RTS2	RXD2	TXD2
		Signal Description	39	37	35	33	31	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1
			Receiver MIC1 anode	Receiver MIC1 cathode	NC	Earpiece speaker anode	Earpiece speaker cathode	NC	NC	Interface voltage input	Ground	Module Power supply	Module Power supply	Data is ready	Ring signal indicator	UART1 Transmitting data	UART1 Receiving data	NC	NC	NC	UART2 Receiving data	UART2 Transmitting data

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| | | |

4	UART 2(**COM2**)	The interactive interface (UART 2) of module, which is used to output the debug log
5	UART 3(**COM3**)	The interactive interface (UART 3) of module, which is used to output the GPS location information on module MG2639 V3.
6	USB (**J13**)	Output the signals USB_DM, USB_DP of **J8** module interface, and USB interface connects to +5V voltage input.
7	Power switch (**L5**)	The user can choose the power mode either by DC power supply or +5V power supply through this switch.
8	Power supply interface (**J19**)	The power input of Dev Board is DC power supply, and the voltage range is 6V-9V
9	Function extended Interface (**J18**、**J17**)	The extended Interface's signals Introduction (Marked as **J18** on Dev Board)

Signal Description	I2C clock cable	NC	NC	Ground	1.8V power output
	2	4	6	8	10
Signal Deification	SCL	NC	NC	GND	VCC_1V8
	SDA	NC	NC	GND	VCC_3 V3
Signal Description	1	3	5	7	9
	I2C data cable	NC	NC	Ground	3.3V power output

The extended Interface's signals Introduction (Marked as **J17** on Dev Board)

Signal Description	Extended signal 1	Extended signal 3	Extended signal 5	Extended signal 7	Extended signal 9
	2	4	6	8	10
Signal Deification	GPIO_1	GPIO_3	GPIO_5	GPIO_7	GPIO_9
	GPIO_0	GPIO_2	GPIO_4	GPIO_6	GPIO_8
Signal Description	1	3	5	7	9
	Extended signal 0	Extended signal 2	Extended signal 4	Extended signal 6	Extended signal 8

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<table>
<tr><td>10</td><td>MCU debug interface (J12)</td><td></td><td colspan="7">MCU debug interface’s function introduction
(use ATMEGA32L MCU (Marked as U9 on Dev Board))
<table><tr><td>Signal Deification</td><td>VCC_3V3</td><td>MOSI</td><td>RESET</td><td>SCK</td><td>MISO</td><td>GND</td></tr><tr><td>Signal Description</td><td>1
3.3V power supply</td><td>2
SPI MOSI</td><td>3
Rest signal</td><td>4
SPI clock signal</td><td>5
SPI MISO</td><td>6
Ground</td></tr></table></td><td></td><td colspan="7">MCU debug interface’s function introduction
(Use PIC16F616 MCU (Marked as U17 on Dev Board))
<table><tr><td>Signal Deification</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Signal Description</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td></td></tr>
<tr><td>11</td><td>DOWNLOAD button</td><td colspan="16">This button is connected to the RI signal of J4 module interface, the signal is set to low when press this button.
When press this button, the MG2639 V1/V2/V3, MG2618 modules will enter to DOWNLOAD mode.</td></tr>
<tr><td>12</td><td>RESET button</td><td colspan="16">This button is connected to the SYS_RESET signal of J4 module interface, the SYS_RESET signal is set to low when press this button. When press this button and then release it, the module will be reset.</td></tr>
<tr><td>13</td><td>ON/OFF button</td><td colspan="16">This button is connected to the ON/OFF signal of J4 module interface, the ON/OFF signal is set to low and the module will start up.</td></tr>
<tr><td>14</td><td>Jumper (J7)</td><td colspan="16">This jumper connects to the module signal ON/OFF of J4 interface, when inserts the cap on this jumper, ON/OFF is set to low level, and the module will turn on once connecting to the power supply.</td></tr>
<tr><td>15</td><td>Loudspeaker voice output interface (J20)</td><td colspan="16">DAC speaker voice output interface</td></tr>
</table>

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16	Earphone input/output interface (**J25**)	DAC MIC input and voice output
17	Earphone input/output interface (**J14**)	MIC2 input and earphone voice output
18	SIM card console(**J16**)	This console connects to the signals (V_CARD, CARD_CLK, CARD_DATA, CARD_RST) on the interface **J4.**
19	PHONE interface (**J15**)	Phone interface, can directly connect to the ordinary telephone receiver, input through MIC1, output through SPK_1
20	Audio DAC chip (**U7**)	LM49350 chip, can configure the parameters by MCU(**U9** or **U17**) or module through I2C bus.
21	MCU (**U9**)	ATMEGA32L MCU (NC), can be used for DAC chip configuration through I2C bus.
22	MCU (**U17**)	PIC16F616 MCU (NC), can be used for DAC chip configuration through I2C bus.
23	RS-232 chip (**U5**)	ICL3238 chip, for RS-232 level and TTL level transformation on UART1.
24	RS-232 chip (**U6**)	ICL3238 chip, for RS-232 level and TTL level transformation on UART2 and UART3
25	Main power supply chip (**U12**)	MIC 29302 chip, it can supply +4V power level to the module, and the max. current is 3A.

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3 Dev Board schematic diagram

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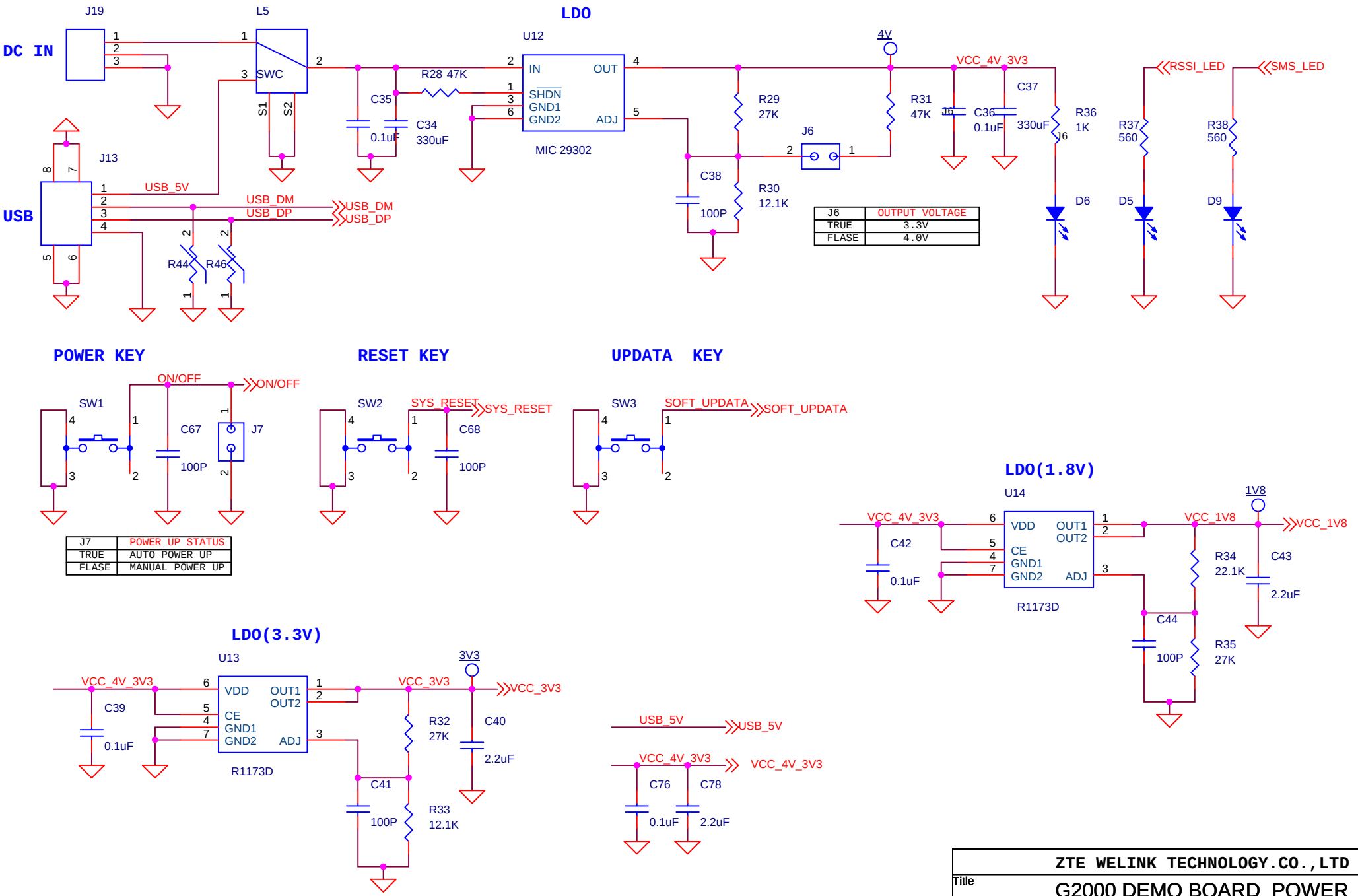

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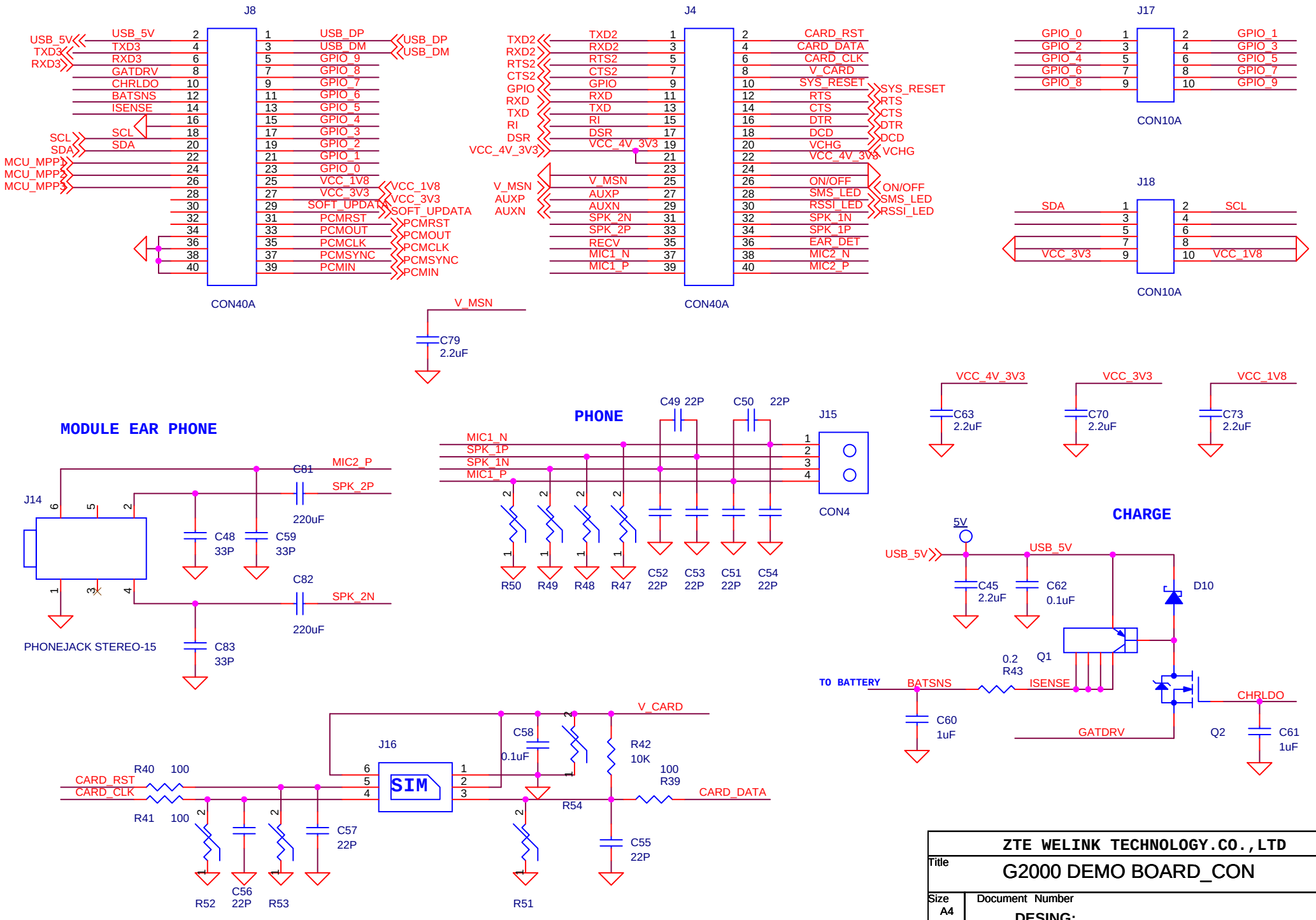

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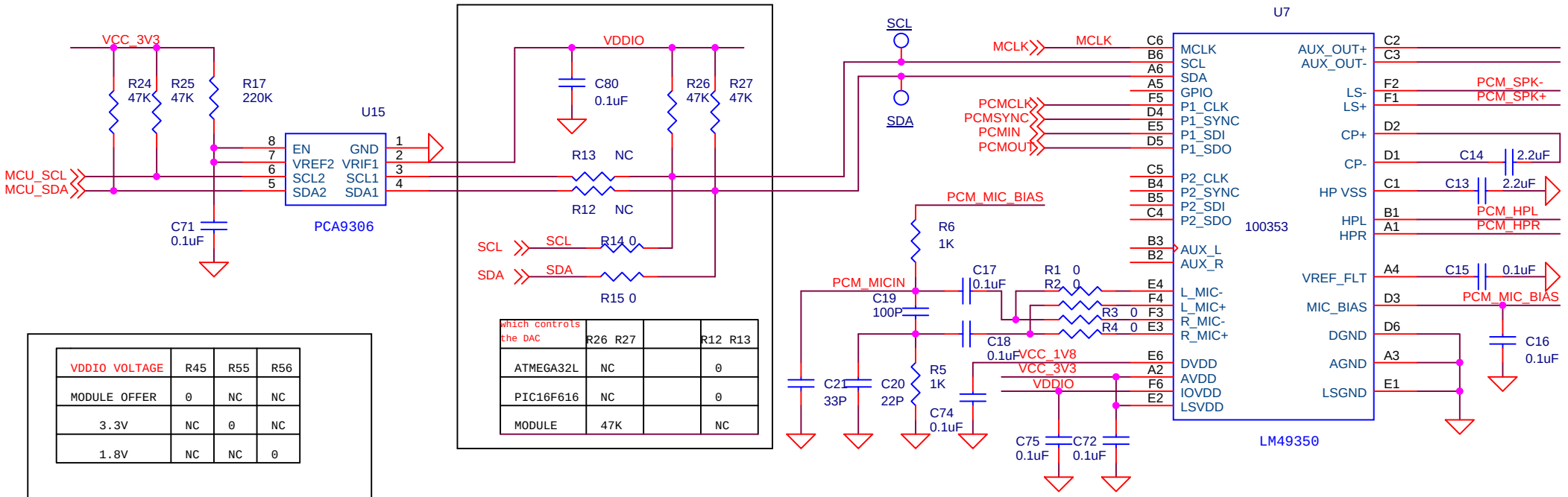
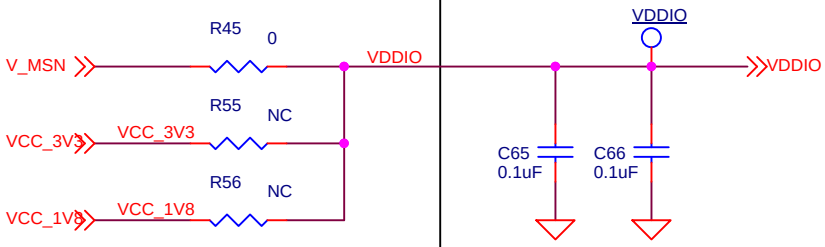
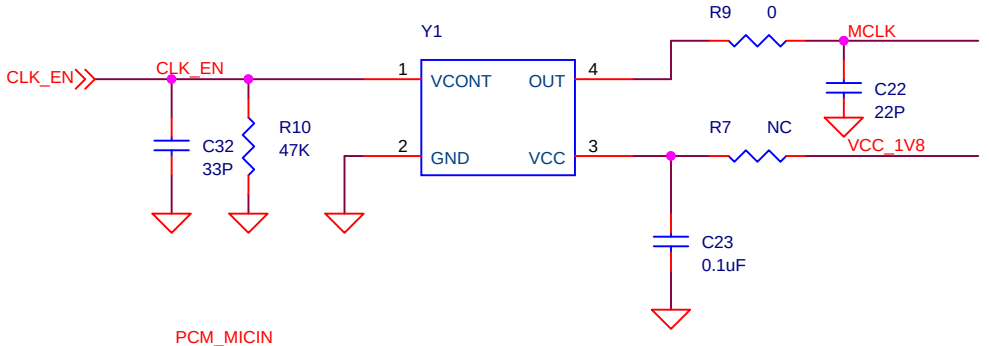
AUDIO DAC



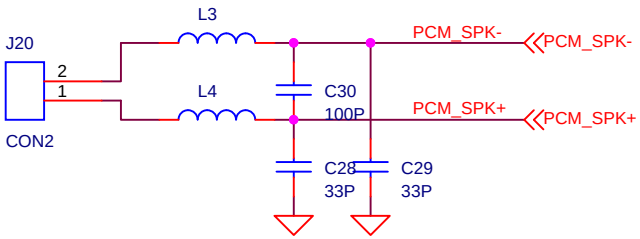
which controls the DAC	R26 R27		R12 R13
ATMEGA32L	NC		0
PIC16F616	NC		0
MODULE	47K		NC

VDDIO VOLTAGE	R45	R55	R56
MODULE OFFER	0	NC	NC
3.3V	NC	0	NC
1.8V	NC	NC	0

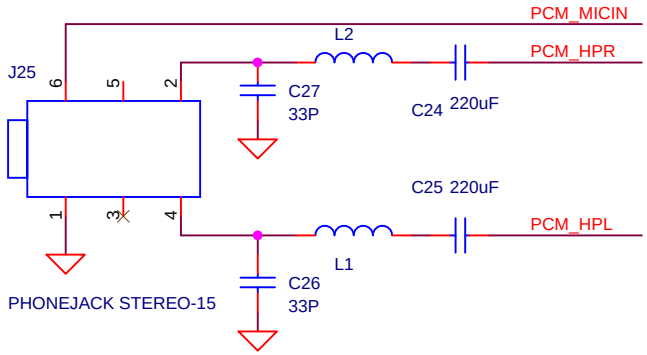




SPK OUT



DAC EAR PHONE



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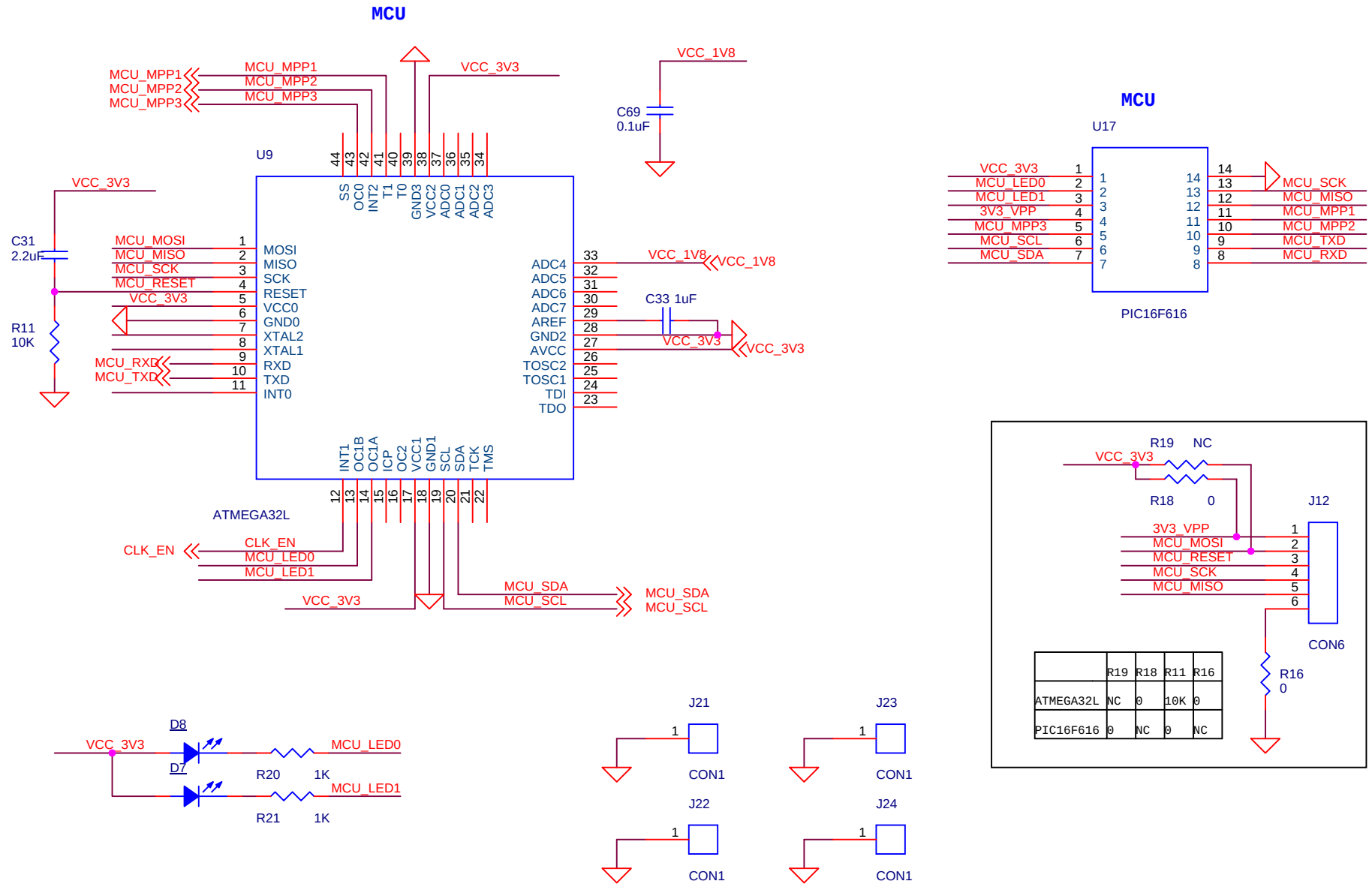

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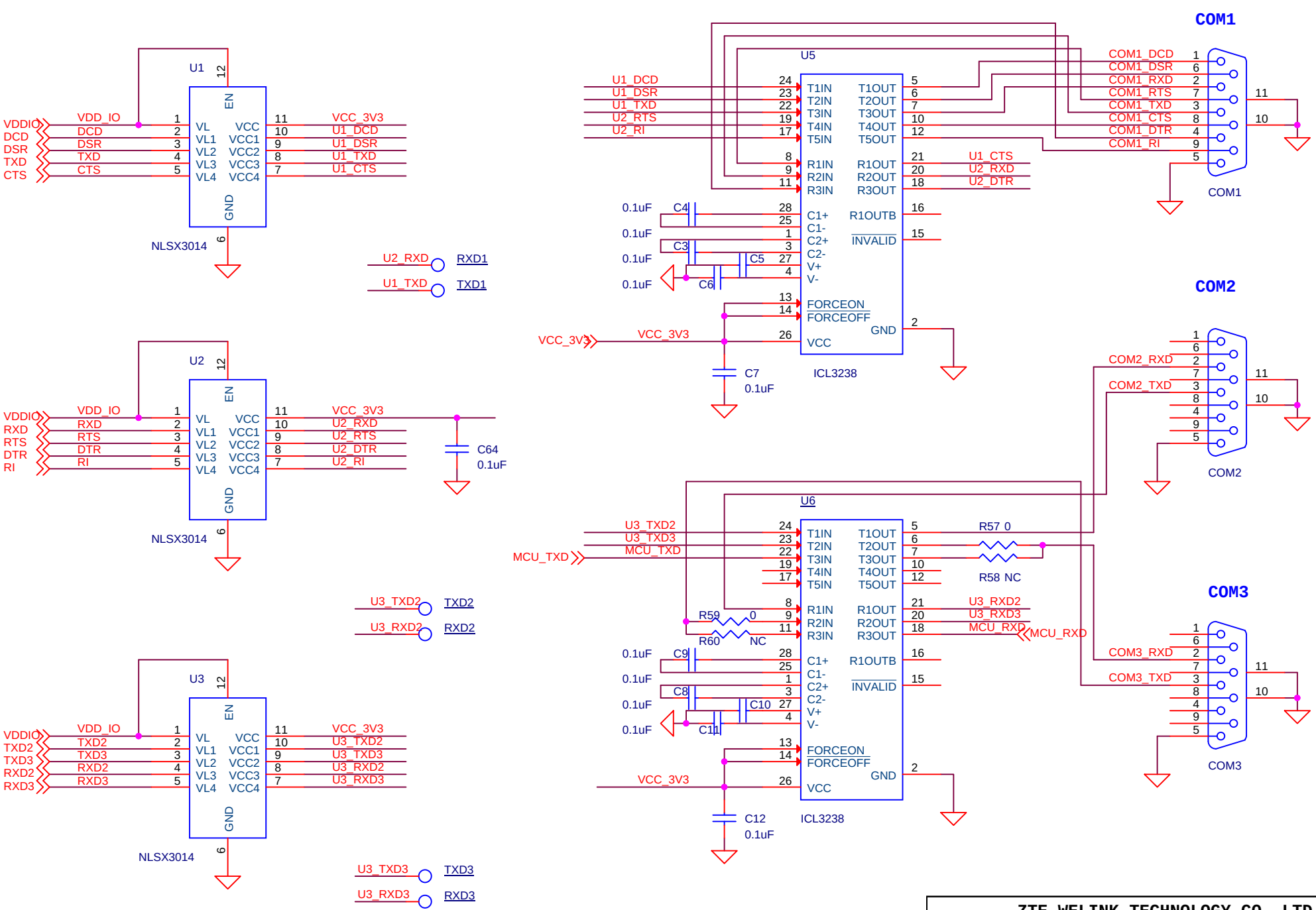

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