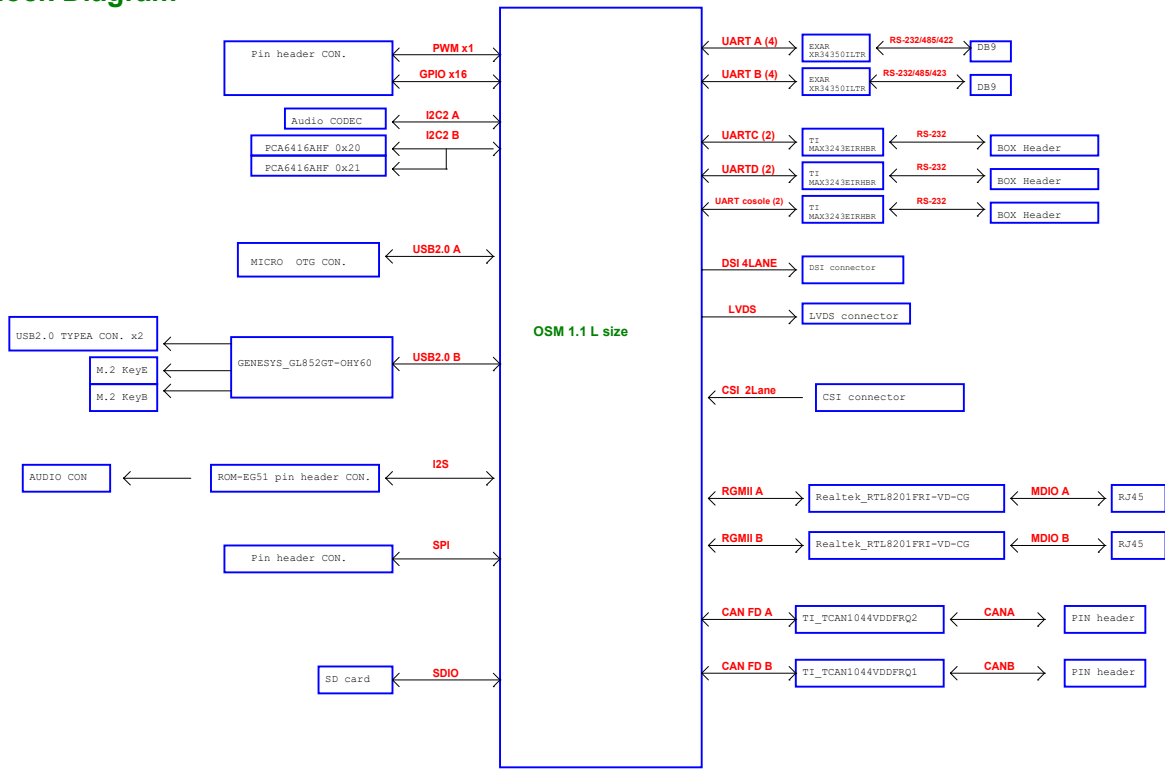
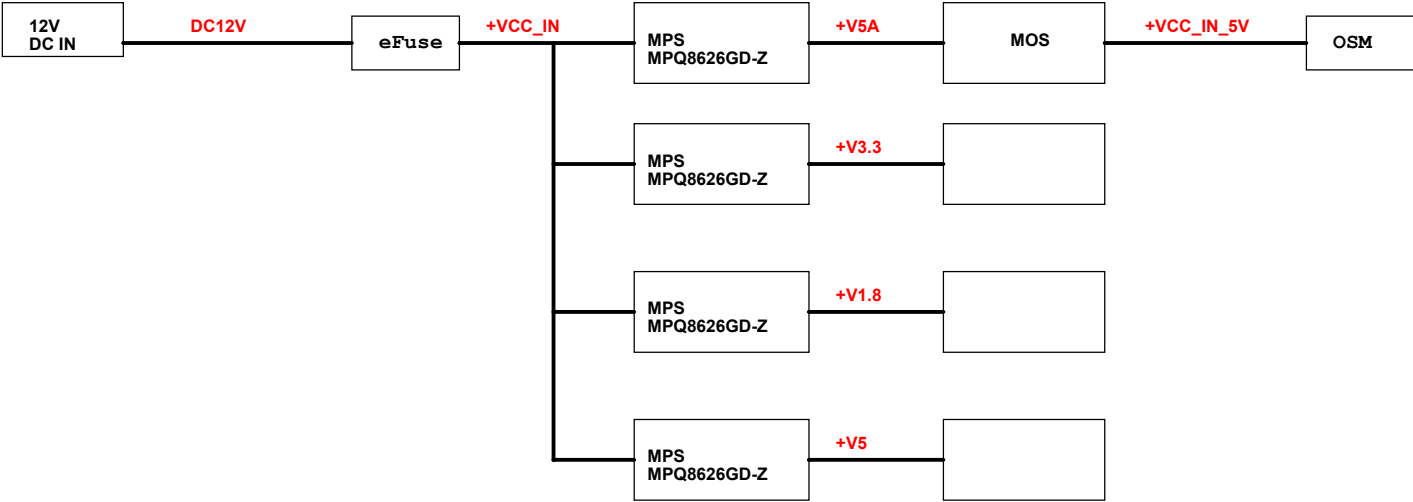


PAGE	DESCRIPTION	Module ID	REV.
1	Title Page		
2	System Block Diagram		
3	Power Block Diagram		
4	Power Enable Sequence		
5	Revision History		
6	OSM_PINS/PCB		
7	DCIN / +V5A		
8	PWR +V5_MOD/+V3.3/+V3.8		
9	PWR +V1.8/+V5		
10	BOOTCFG / PWR & RST Button		
11	UART		
12	USB		
13	CSI		
14	DSI		
15	LVDS		
16	LAN A		
17	LAN B		
18	CAN BUS		
19	Audio		
20	SD / M2E		
21	M2B		
22	GPIO/SPI/PWM/JTAG		
23	I2C EXP		

Block Diagram

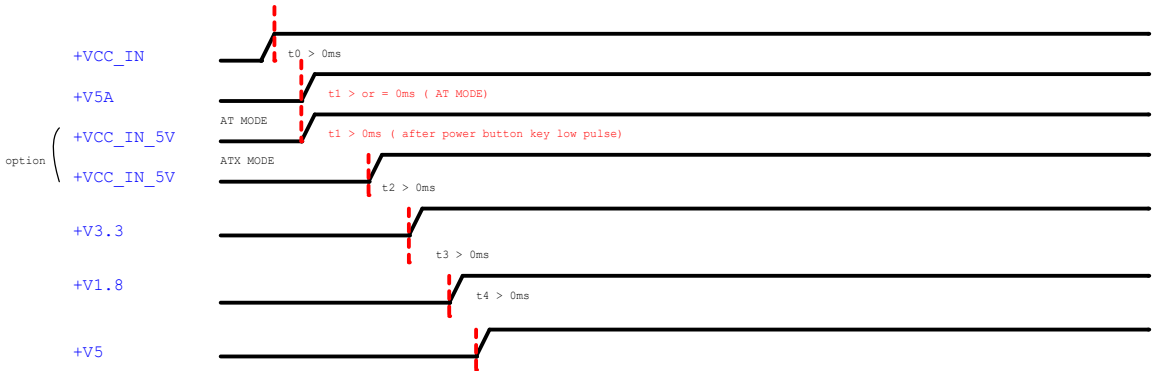


Power Distribution



ADVANTECH		Classification Level	CONFIDENTIAL	CONFIDENTIAL DRAWINGS OWNED BY ADVANTECH. THE RECIPIENT SHALL MAINTAIN THE CONFIDENTIALITY AND SHALL BE LIABLE FOR BREACH.
Title		03-Power Block Diagram		
Size A4	PCB Name ROM-ED93		Rev A101-2	
Date: 2	Friday, December 29, 2023		Sheet 1	3 of 23

Power On Sequence



ADVANTECH		Classification Level	CONFIDENTIAL	CONFIDENTIAL DRAWINGS OWNED BY ADVANTECH. THE RECIPIENT SHALL MAINTAIN THE CONFIDENTIALITY AND SHALL BE LIABLE FOR BREACH.
Title		04-Power enable sequence		
Size	PCB Name		Rev	
A4	ROM-ED93		A101-2	
Date:	Friday, December 29, 2023		Sheet	4 of 23
2			1	

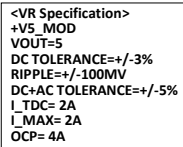
ROM-ED91 A101-1 PCB: 19A6ED9300-01 BOM: 9696ED93000 DATE : 2023/08/23

1. Initial Released

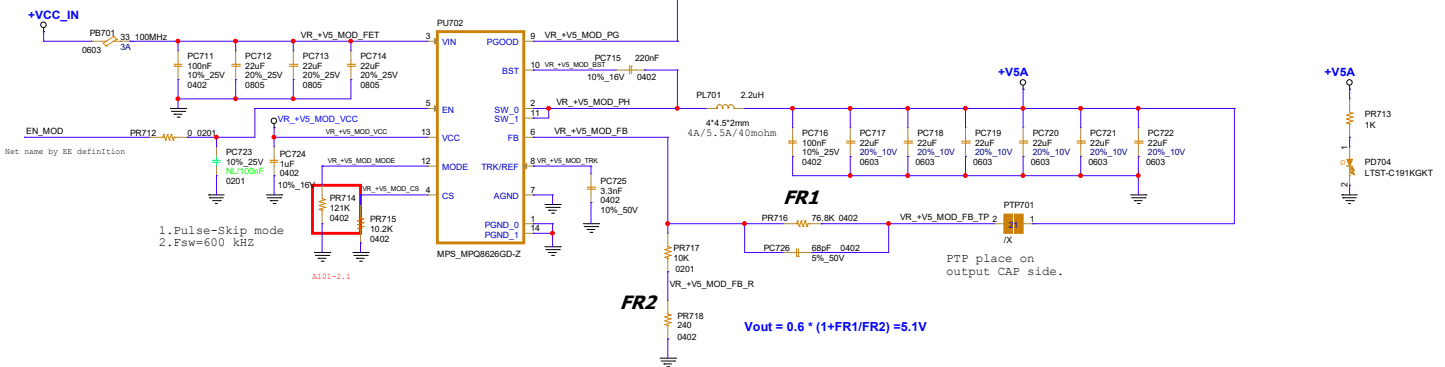
ROM-ED91 A101-1 PCB: 19A6ED9301-01 BOM: 9696ED93000 DATE :

- 01. PR714 changes from 60.4K to 121K. Page7
- 02. PR706 changes from 124K to 130K. Page7
- 03. PR709 changes from 249ohm to 182ohm. Page7
- 04. MOD_PWREN adds pull-up resistor 10K to +V5A. Page8
- 05. MDI lines add TVS(D2108~D2119). Page16
- 06. UR_SEL_R adds pull-up resistor 10K to +V3.3(unmount) and pull-down 10K to GND(mount). Page23
- 07. LVDS signals add 5pF to GND. Page15
- 08. USB_A_ID adds in series of resistor 0 ohm. Page12
- 09. Input of PU701 adds the 0.1uF and TVS. Page7
- 10. PD701 changes from 1300006216-01 to 1300006691-01. Page7
- 11. PU701 changes to 1410029538-01. Page7
- 12. mount PD702. Page8
- 13. D1801~D1804 change form 1300006216-01 to 1300006405-01. Page18
- 14. D2110 rename to D1701. Page17
- 15. C1210,C1211 replace from 16pF to 22pF. Page12
- 16. C1604,C1603 replace from 10pF to 12pF. Page16
- 17. C1704,C1703 replace from 10pF to 12pF. Page17

+V5A

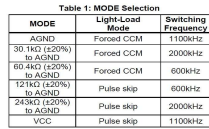


VR_+V5_MOD_VCC

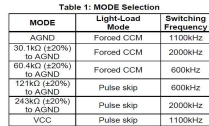


$$V_{out} = 0.6 * (1 + R_1/R_2) = 5.1V$$

<VR Specification>
+V1.8
VOUT=1.8V
DC TOLERANCE=+/-3%
RIPPLE=+/-36MV
DC+AC TOLERANCE=+/-5%
I_TDC= 2A
I_MAX= 2A
OCP= 4A

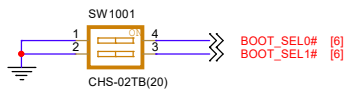


<VR Specification>
+V5_MOD
VOUT=5
DC TOLERANCE=+/-3%
RIPPLE=+/-100mV
DC+AC TOLERANCE=+/-5%
I_TDC= 3A
I_MAX= 3A
OCP= 4A



MODE	Light-Load Mode	Switching Frequency
AGND	Forced CCM	1100kHz
30.1k Ω ($\pm 20\%$) to AGND	Forced CCM	2000kHz
60.4k Ω ($\pm 20\%$) to AGND	Forced CCM	600kHz
121k Ω ($\pm 20\%$) to AGND	Pulse skip	600kHz
243k Ω ($\pm 20\%$) to AGND	Pulse skip	2000kHz
VCC	Pulse skip	1100kHz

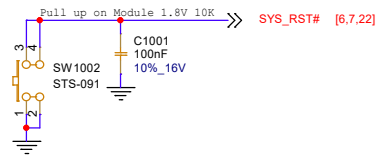
ADANTECH		Classification Level CONFIDENTIAL	CONFIDENTIAL: INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE BY THE CLASSIFICATION AUTHORITY OR BY THE CLASSIFICATION AUTHORITY'S SUCCESSORS.
Title 09-PWR +V1.8/+V5			
Size A3	PCB Name ROM-ED93		Rev A101-2
Date:	Friday, December 29, 2023	Sheet	9 of 23



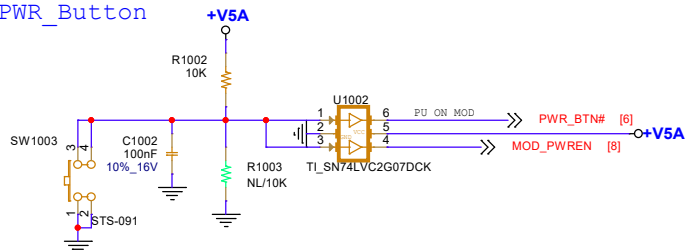
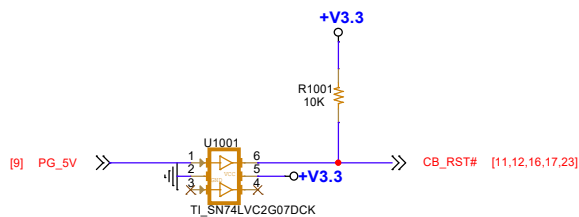
Pull Hing on module

	BOOT_SEL1#	BOOT_SEL0#
SD card	GND	GND
eMMC	GND	Floating
Serial Download	Floating	GND

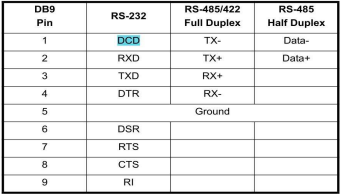
RESET_Button



PWR_Button

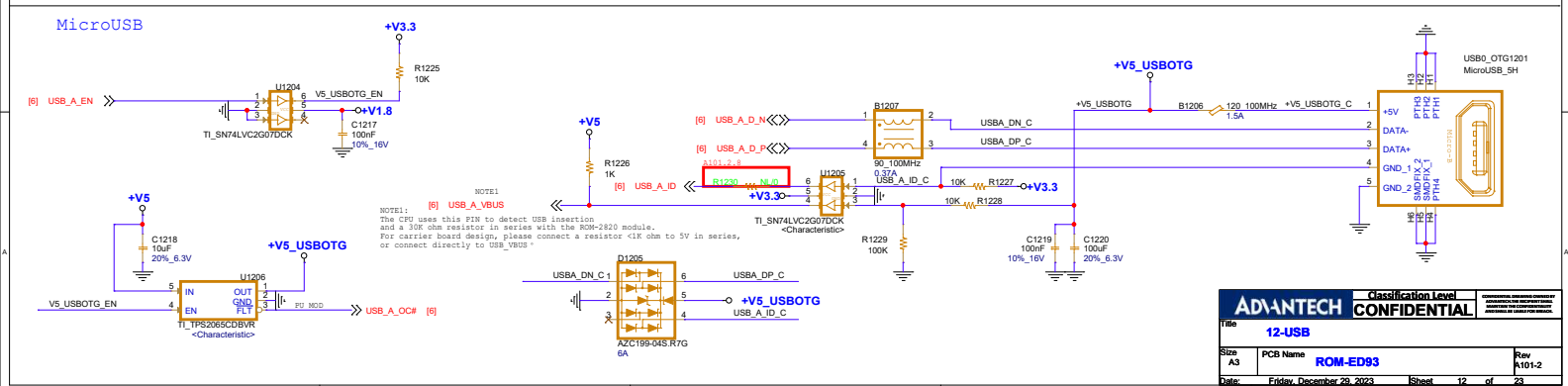


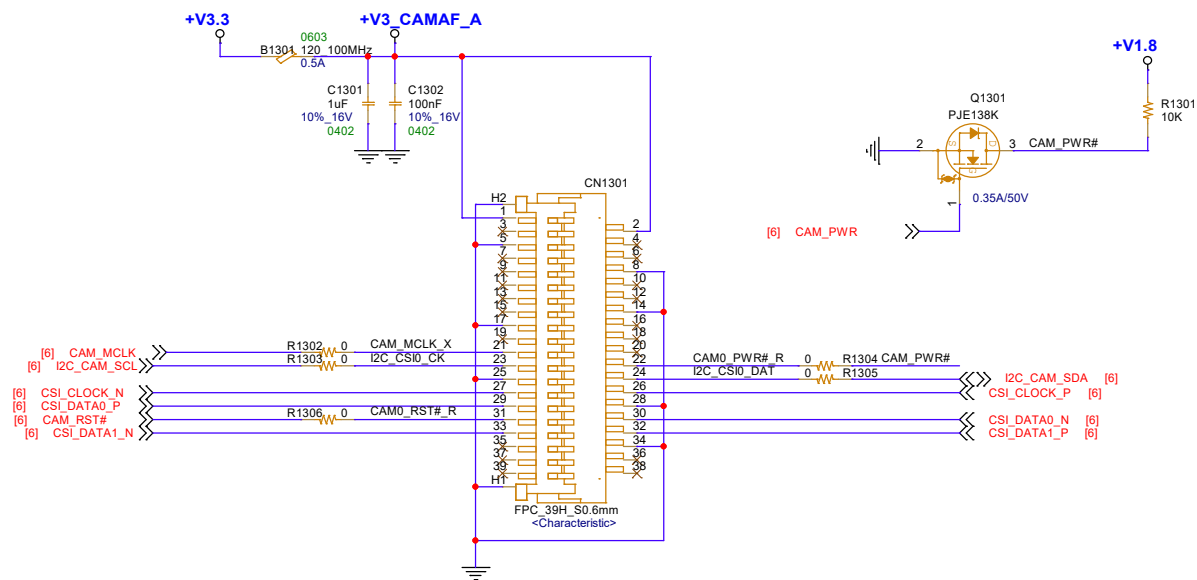
ADVANTECH		Classification Level	CONFIDENTIAL	CONFIDENTIAL DRAWINGS OWNED BY ADVANTECH. THE RECIPIENT SHALL MAINTAIN THE CONFIDENTIALITY AND SHALL BE LIABLE FOR BREACH.
Title 10-BOOTCFG / PWR & RST Button				
Size A4	PCB Name ROM-ED93			Rev A101-2
Date: Friday, December 29, 2023	Sheet 10 of 23			



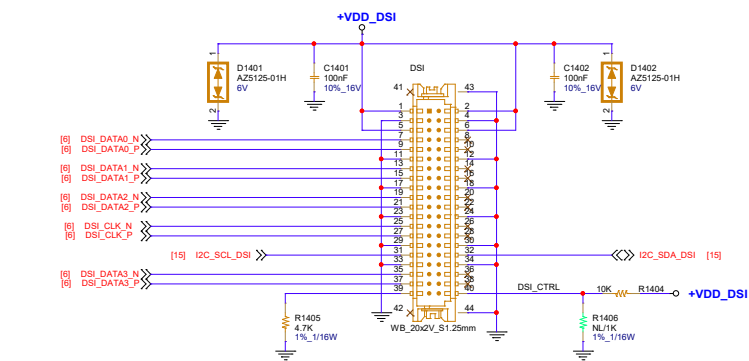
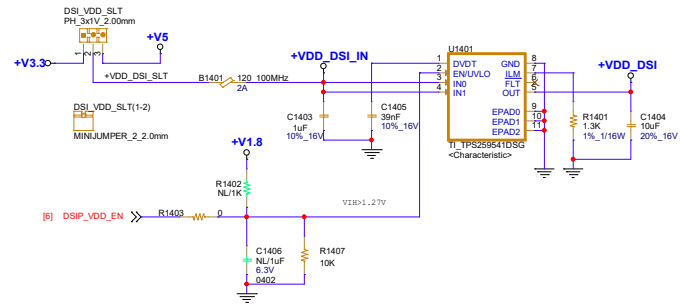
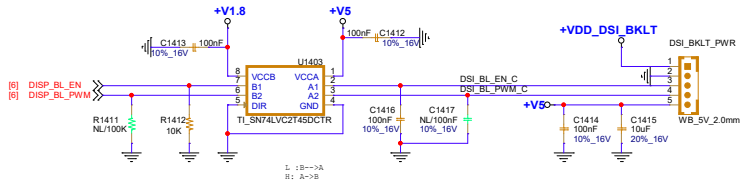
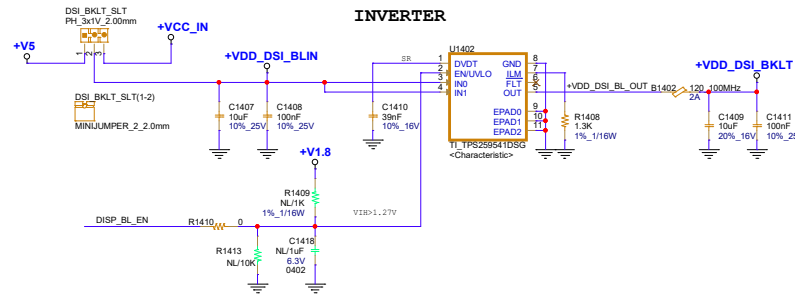
DB9 Pin	RS-232	RS-485/422 Full Duplex	RS-485 Half Duplex
1	DCD	TX-	Data-
2	TXD	TX+	Data+
3	RXD	RX+	
4	DTR	RX-	
5		Ground	
6	DSR		
7	RTS		
8	CTS		
9	RI		

ADVANTECH		CONFIDENTIAL	
Title: 11-UART			
Size: A2	PCB Name: ROM-ED93	Rev: R101-2	
Date: Friday, December 29, 2023	Sheet: 11	of 23	

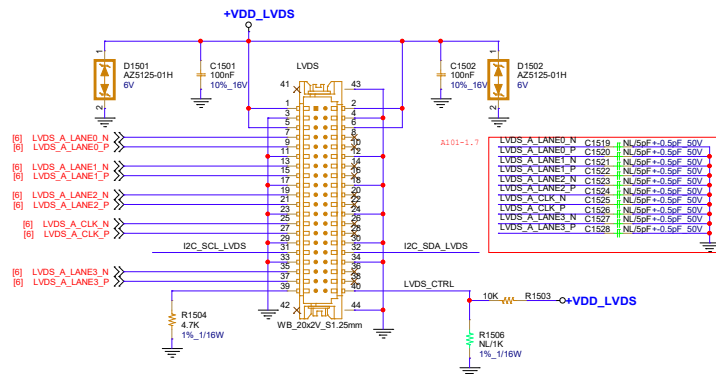
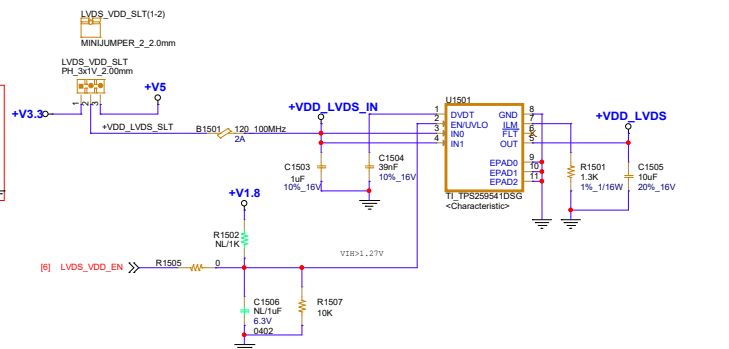
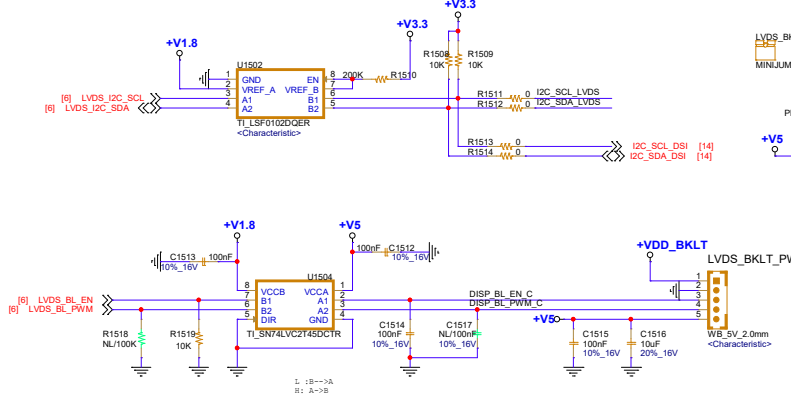
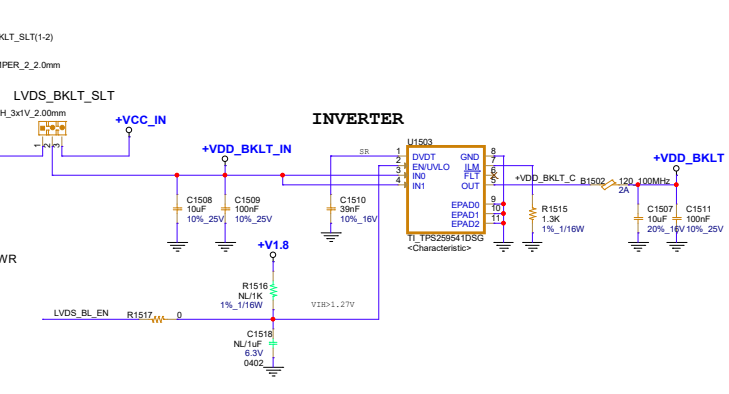


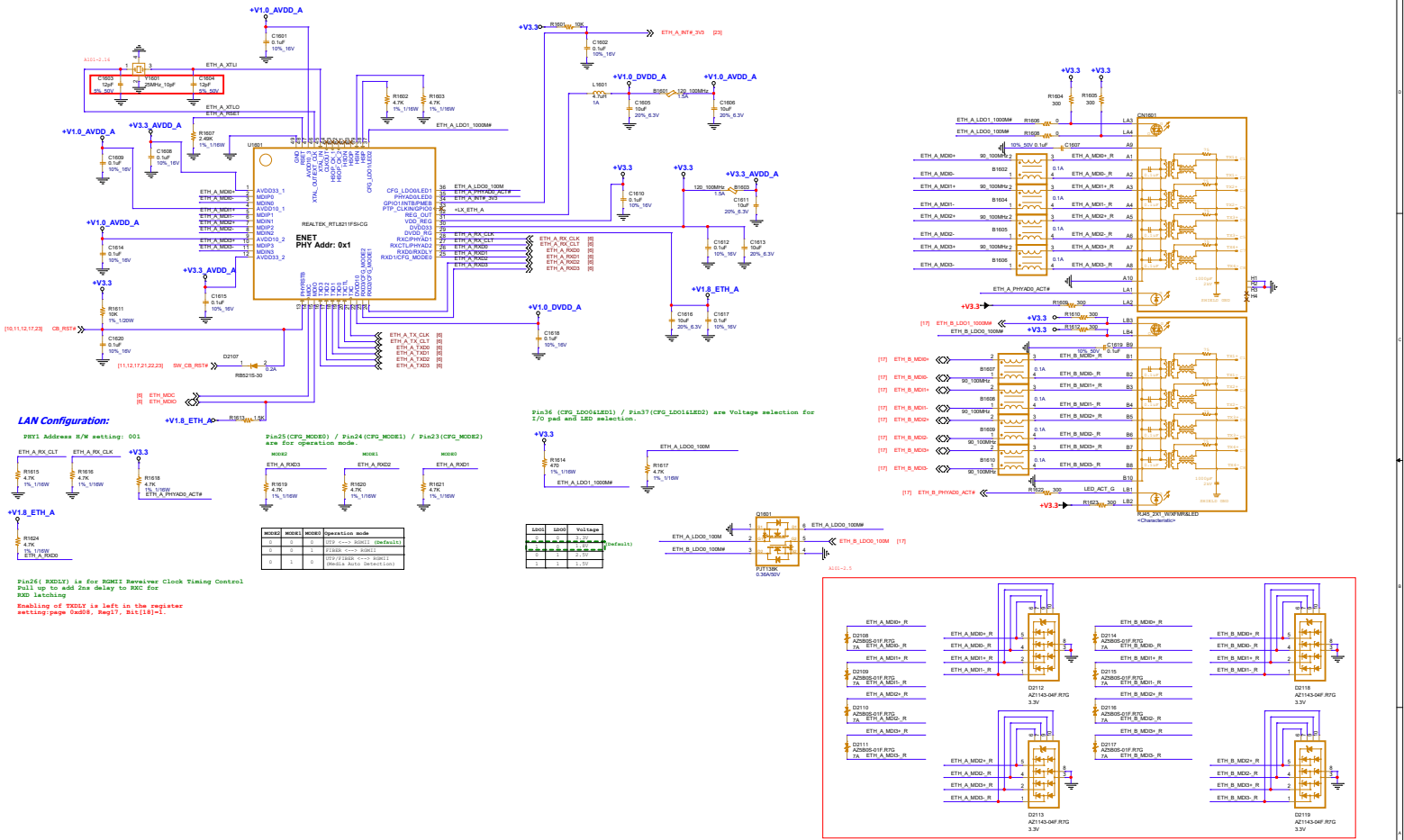


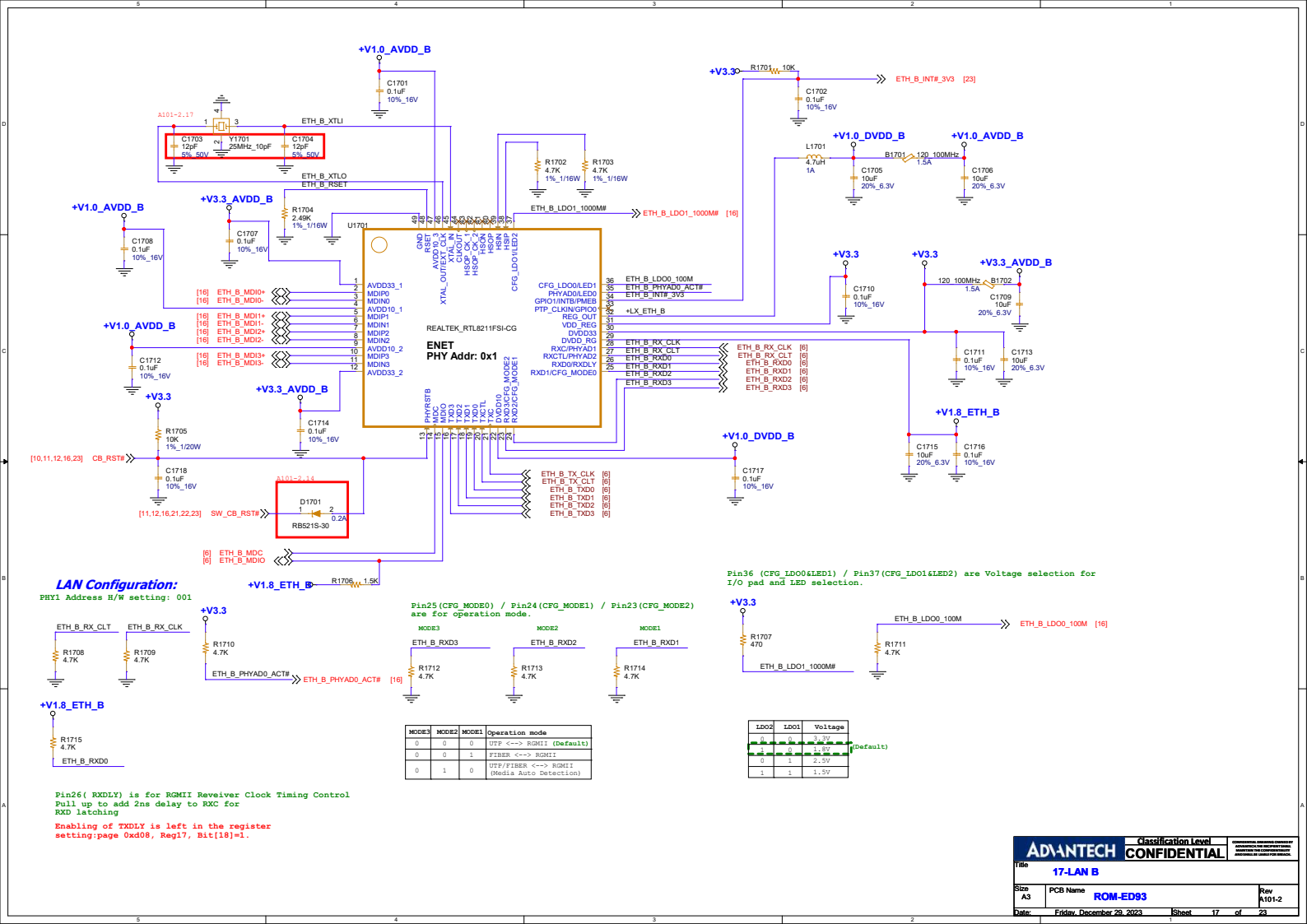
ADVANTECH		Classification Level	CONFIDENTIAL	CONFIDENTIAL DRAWINGS OWNED BY ADVANTECH. THE RECIPIENT SHALL MAINTAIN THE CONFIDENTIALITY AND SHALL BE LIABLE FOR BREACH.
Title		13-CSI		
Size	A4	PCB Name	ROM-ED93	Rev
Date:		Friday, December 29, 2023	Sheet	13 of 23



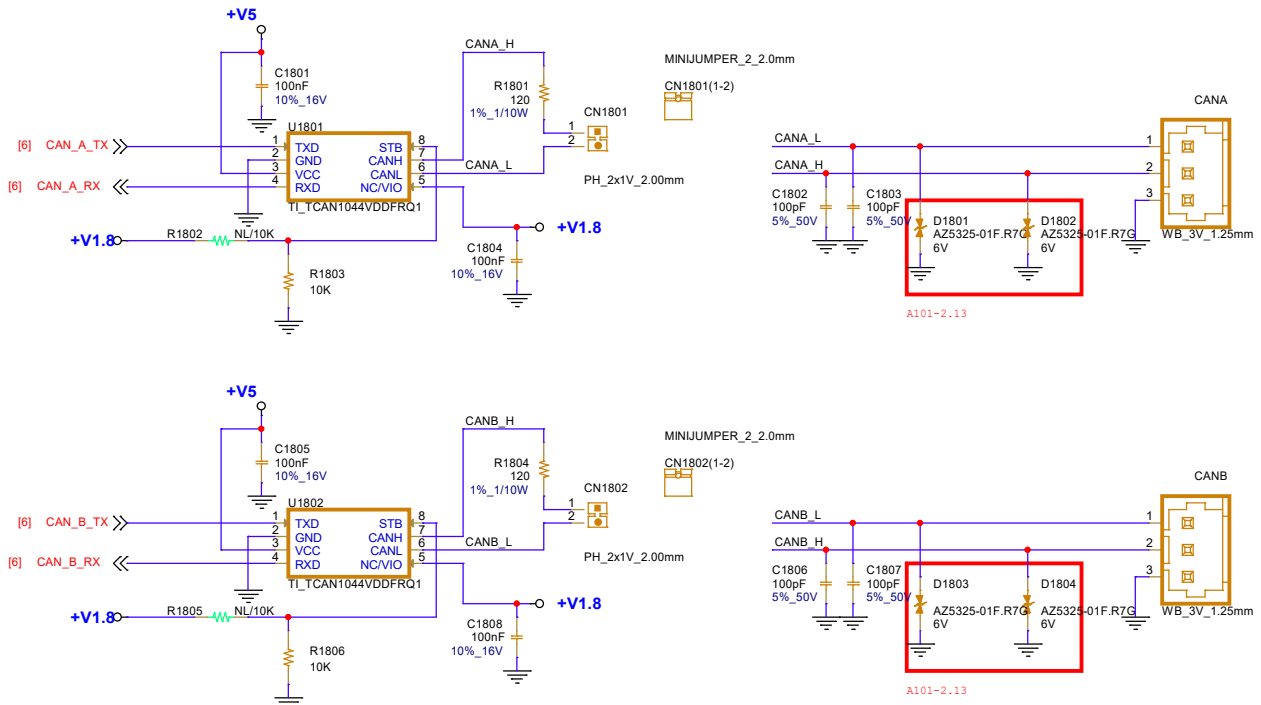
ADANTECH		Classification Level		Revision History	
14-DSI		CONFIDENTIAL		Revision 1.0	
Size	AS	PCB Name	ROM-ED93	Rev	1101-2
Date	Friday, December 29, 2023	Sheet	14	of	23





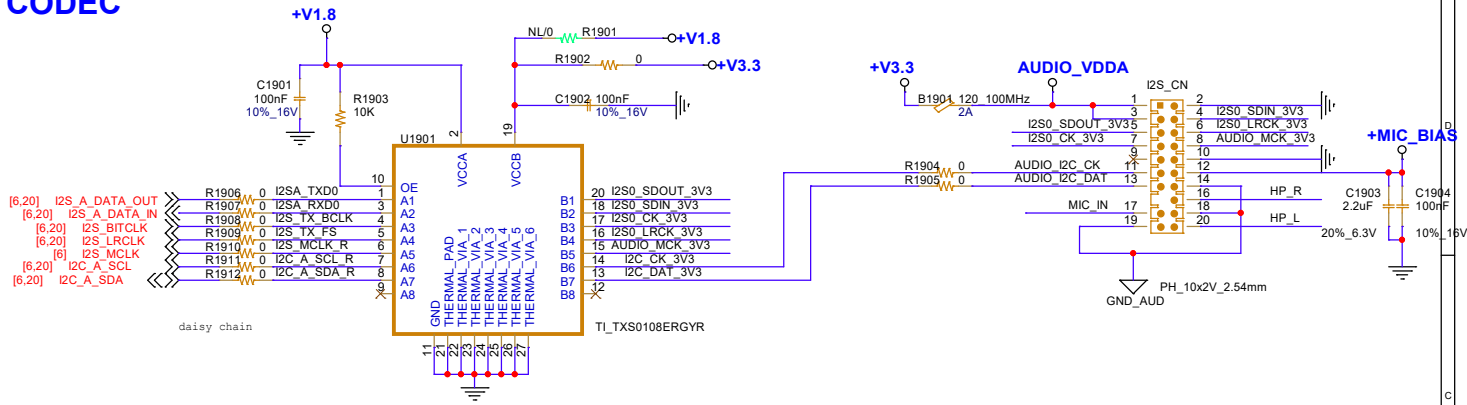
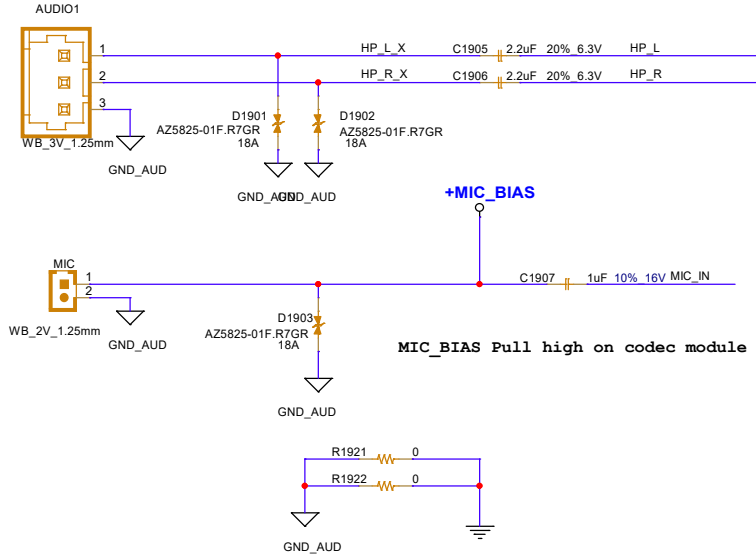


CAN



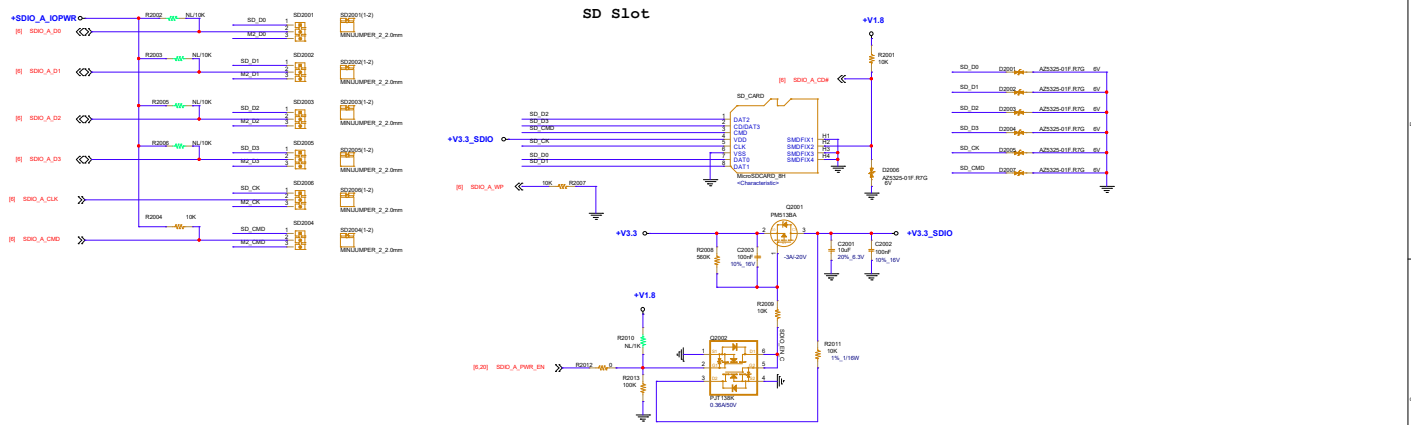
ADVANTECH		Classification Level	CONFIDENTIAL	CONFIDENTIAL DRAWINGS OWNED BY ADVANTECH. THE RECIPIENT SHALL MAINTAIN THE CONFIDENTIALITY AND SHALL BE LIABLE FOR BREACH.
Title		18-CAN BUS		
Size A4	PCB Name		ROM-ED93	Rev A101-2
Date	Friday, December 29, 2023		Sheet 18	of 23

Audio JACK

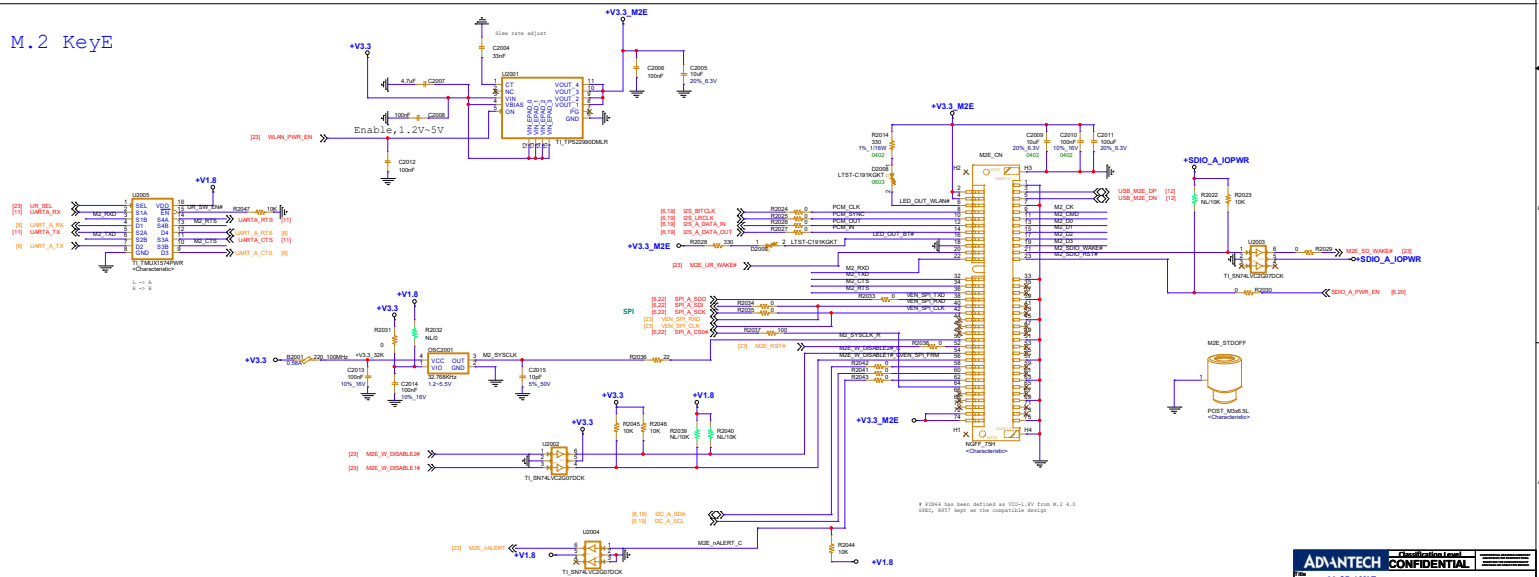


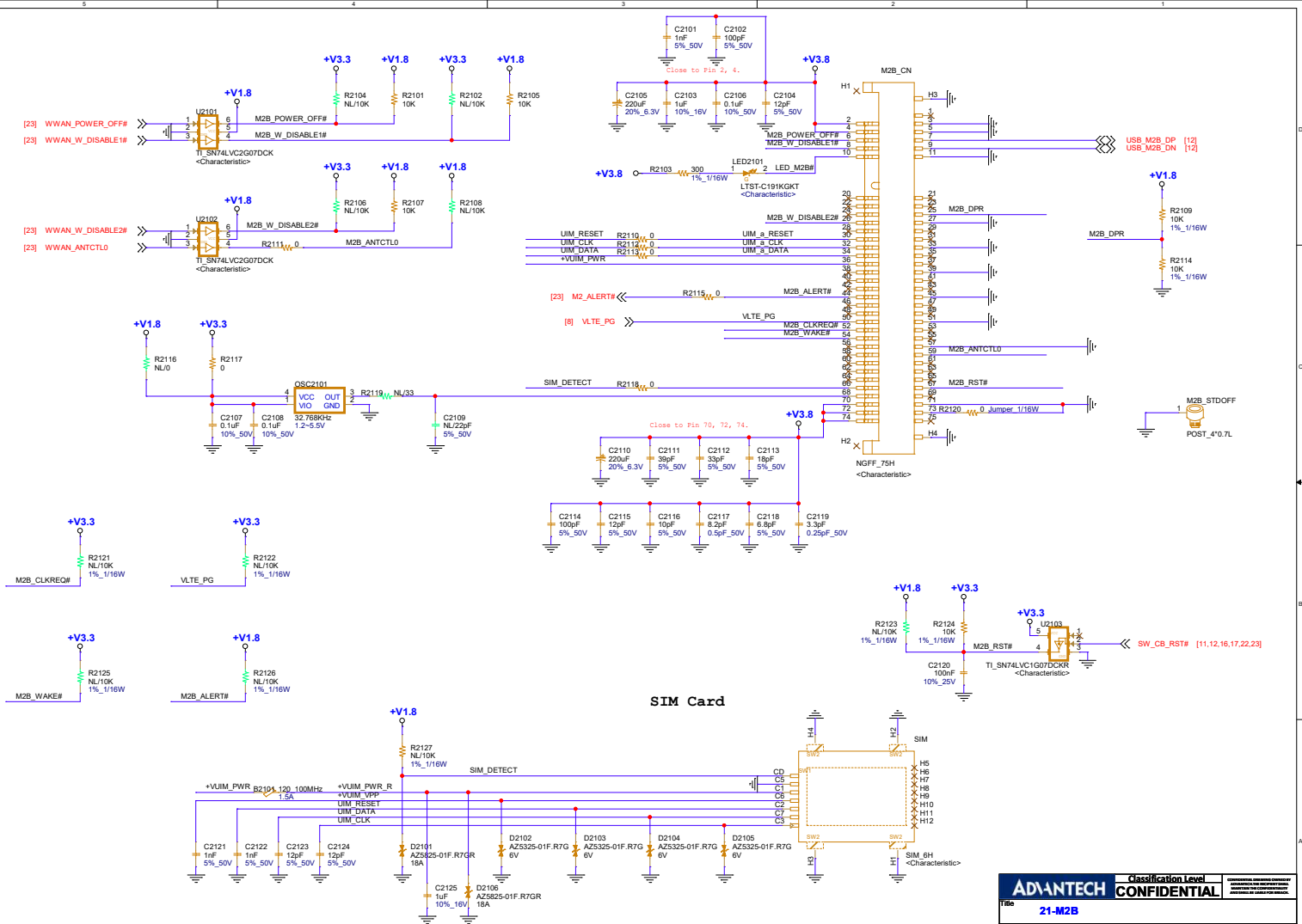
ADANTECH		Classification Level	CONFIDENTIAL	CONFIDENTIAL. DRAWINGS ORNED BY ADANTECH ARE THE PROPERTY OF ADANTECH. THE CONFIDENTIALITY AND SHALL BE SUBJECT FOR LEGAL.
Title				
19-Audio				
Size	PCB Name			Rev
A4	ROM-ED93			A101-2
Date:	Friday, December 29, 2023	Sheet	19	of 23

SD Card



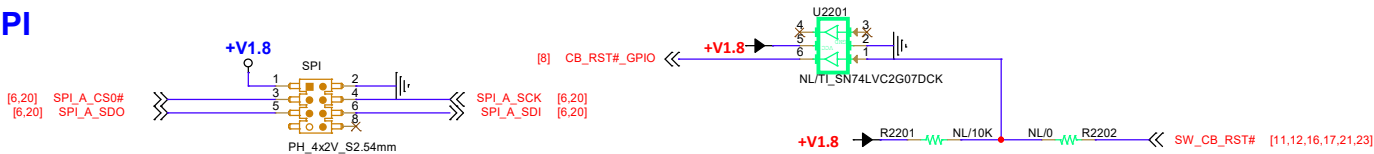
M.2 KeyE



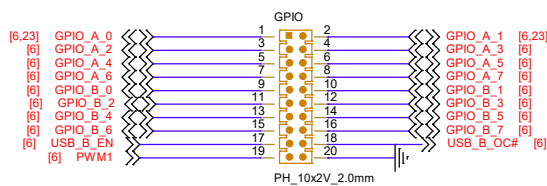
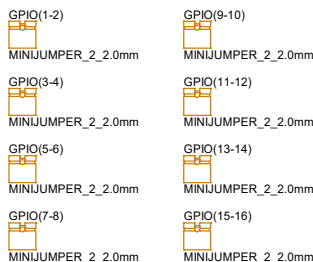


ADVANTECH		Classification Level CONFIDENTIAL	CONFIDENTIAL: UNCLASSIFIED CHANGES BY ADVANTECH TECH INCORPORATED SHALL BE INDICATED BY A DASHED LINE FOR REVISION.
Title 21-M2B			
Size A3	PCB Name ROM-ED93		Rev A101-2
Date:	Friday, December 29, 2023	Sheet	21 of 23

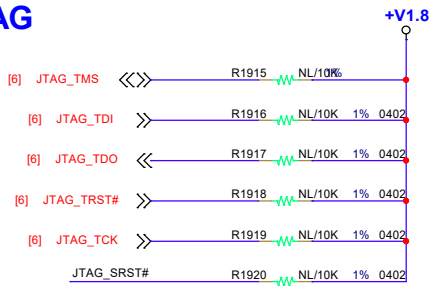
SPI



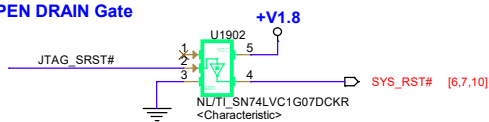
GPIO / PWM / PIN Header



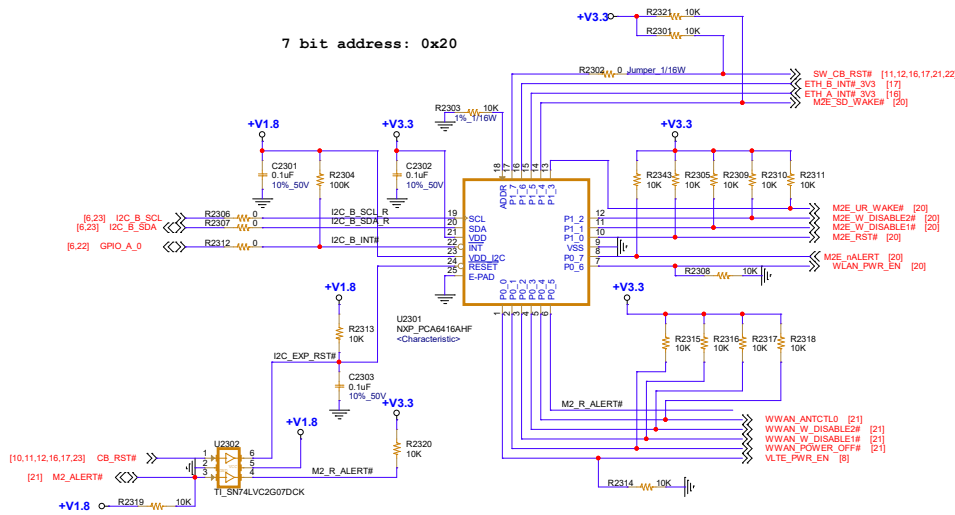
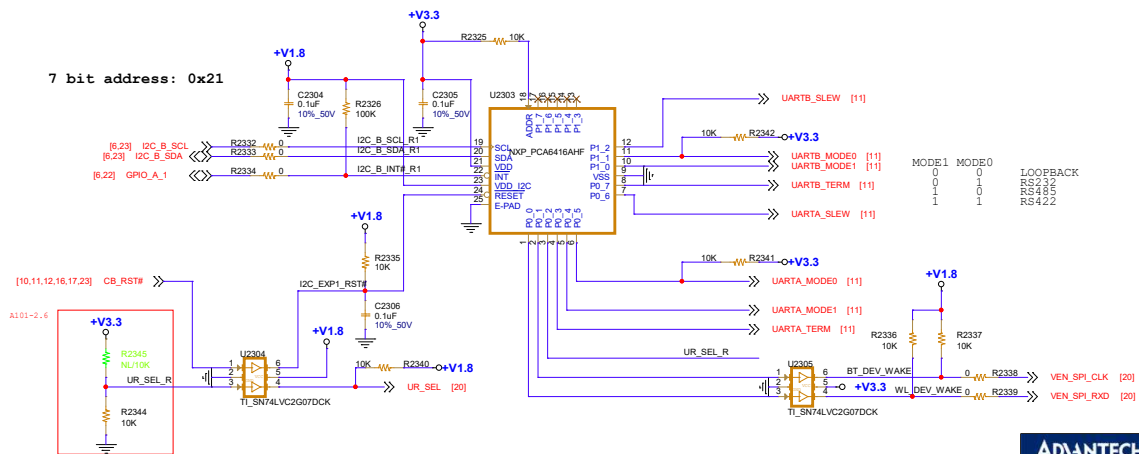
JTAG



OPEN DRAIN Gate



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Title		22-GPIO/SPI/PWM/JTAG		
Size A4	PCB Name		ROM-ED93	Rev A101-2
Date:	Friday, December 29, 2023		Sheet 22 of 23	



```

MODE1 MODE0      LOOPBACK
  0      0      RS232
  0      1      RS485
  1      0      RS422
  1      1

```