

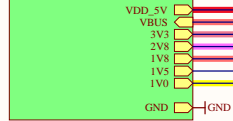
Project: *DM1095*
Current Revision: *R0M0E0*

DM1095 *Revision History:*

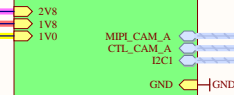
Date	Revision	Reason for Change	Changes Implemented
04/22/2021	Initial release		
06/07/2021	R0M0E0 -> R1M0E1	1. USB SS port direction control issue	1. Switched CC1 CC2 on logic control chip for USB3 SS
06/07/2021	DM1098LUX-D-LITE_R1M0E1 -> DM1095_R0M0E0	1. Update the project naming convention to follow new scheme	1. Updated the project naming convention exported new fabrication documentation
10/09/2021	DM1095_R0M0E0 -> DM1095_R0M0E1	1. Update the camera information 2. Remove 1.5V power supply from assembly	1. Updated the specifications and power sequence for IMX214 and OV7251 cameras. 2. Removed the 1.5V power supply for the OV7251 camera from the Production variant 3. <u>Generated new assembly documentation</u>

Title <i>DM1095</i>			Laxonis Holding 1925 Harmony Park Drive Westminster, CO 80234 United States	
Size: <i>Tabloid</i>	Number: <i>DXXXX</i>	Revision: <i>R0M0E0</i>	Cannot open file C:\Users\BrianLaxonis\Documents\1462	
Date: <i>20/10/2021</i>	Time: <i>10:07:00</i>	Sheet <i>1</i> of <i>9</i>		
Drawn by: <i>David Malovrh</i>				

U_DM1095_Power_Supply
DM1095_Power_Supply.SchDoc



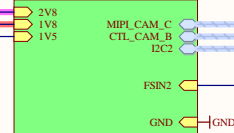
U_DM1095_IMX214
DM1095_IMX214.SchDoc



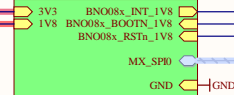
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DM1095_LEFT_OV7251.SchDoc



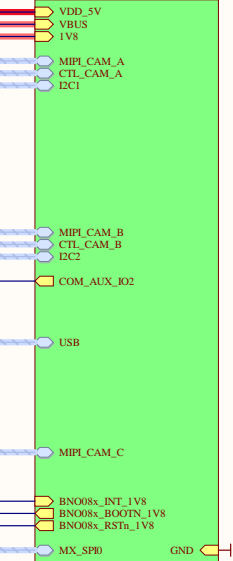
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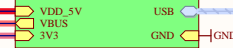
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DM1095_IMU.SchDoc



U_DM1095_Connector
DM1095_Connector.SchDoc



U_DM1095_USB
DM1095_USB.SchDoc



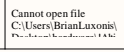
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DM1095_Project_Information.SchDoc



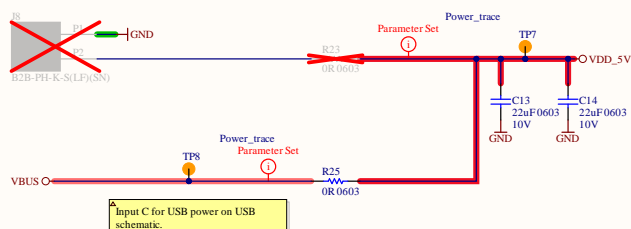
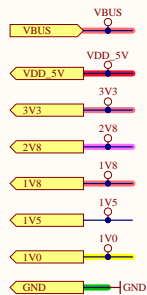
Mounting slots created on PCB
w/ primitives.



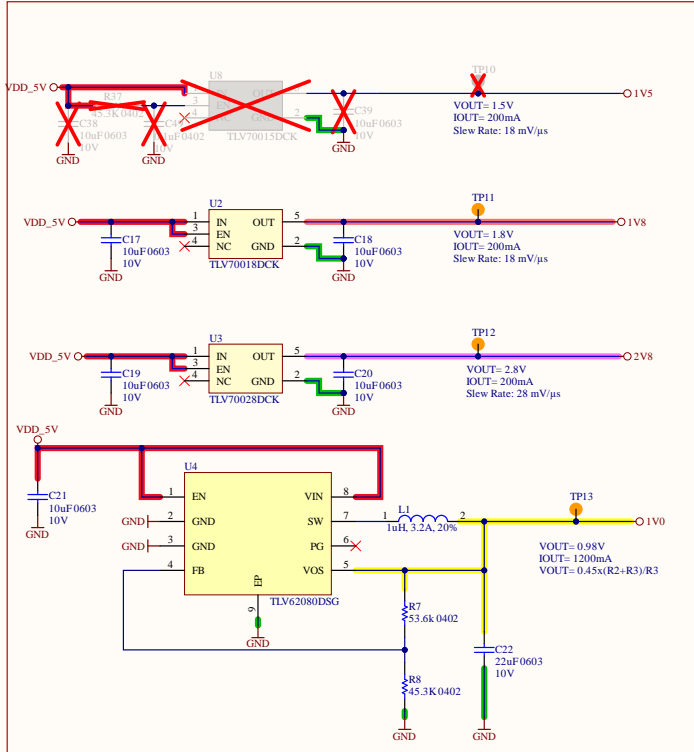
Title DM1095			Laxson Holding 1925 Harmony Park Drive Westminster, CO 80234 United States	
Size: Tabloid	Number: DXXXX	Revision: ROM0ED	Cannot open file C:\Users\BrianLaxson\...	
Date: 20/10/2021	Time: 10:07:00	Sheet 2 of 9		
Drawn by: David Malovrh				



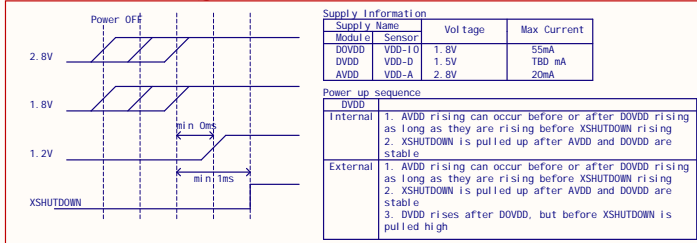
POWER INPUT



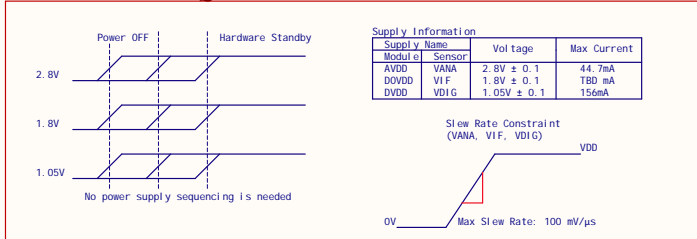
POWER SUPPLIES FOR CAMERA MODULES



OV7251 POWER REQUIREMENTS



IMX214 POWER REQUIREMENTS

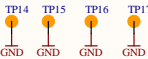
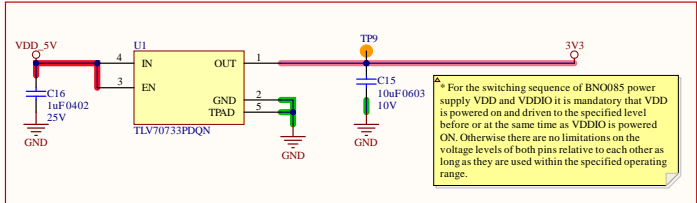


POWER SEQUENCING REQUIREMENTS:

The BW1099 module handles its own power sequencing on-board.

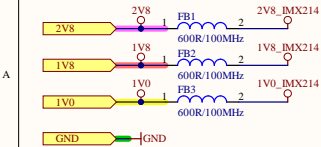
The camera modules have their own power sequencing requirements. The OV7251 have requirements for sequencing, and the IMX214 has a max slew rate requirement. See above.

3.3V USB SW POWER



Title <i>DM1095</i>			<i>Luxonis Holding</i> <i>1925 Harmony Park Drive</i>	Cannot open file C:\Users\BrianLuxonis\Documents\DM1095.dwg
Size: <i>Tabloid</i>	Number: <i>DXXXX</i>	Revision: <i>ROM0E0</i>	<i>Westminster, CO</i> <i>80234</i>	
Date: <i>20/10/2021</i>	Time: <i>10:07:00</i>	Sheet <i>4</i> of <i>9</i>	<i>United States</i>	
Drawn by: <i>David Malovrh</i>				

Place FBs and caps close to their associated camera connector.

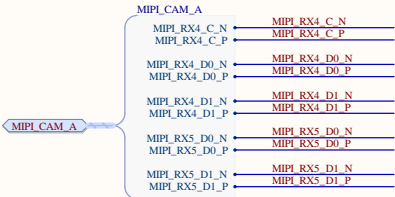


Supply Information			
Supply Name	Module	Voltage	Max Current
AVDD	VANA	2.8V ± 0.1	55mA
DOVDD	VIF	1.8V ± 0.1	2.5mA
DVDD	VDIG	1.05V ± 0.1	446mA

On the BW1097, the IMX214 camera module is hardwired into the "Cam-A" logical position. This means the logic which used to be required to support the module being plugged into different physical connectors (and different logical positions) is no longer needed and can be removed.

Note: It is still a limitation that the clock source for the cameras must be shared between CAMA/C and CAMB/D.

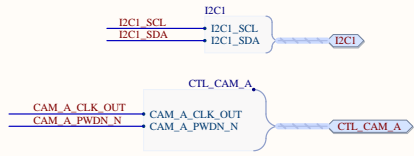
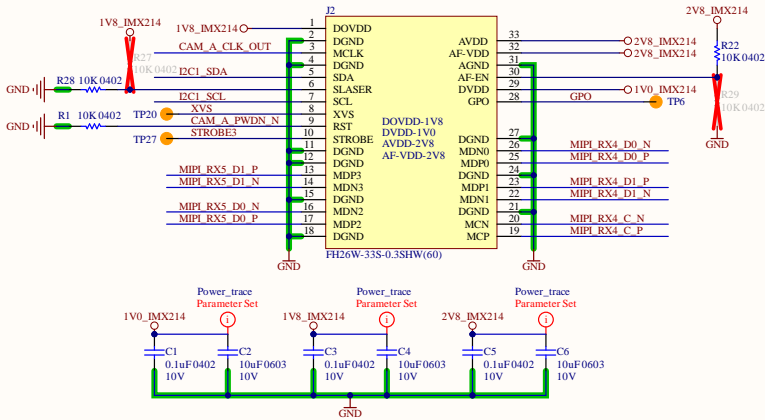
MIPI Lanes:
DPHYv1.2
Max 2.1 Gbps / lane



IMX214 MODULE CONNECTOR

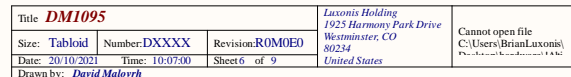
MODULE & SENSOR INFORMATION			
MODULE	Arducam-IMX214 AF or Arducam-IMX214 FF	I2C Clock Rate	400 kHz Max
SENSOR	IMX214-0A0H5-C 13 Mega pixel CMOS	I2C Address (8 bits)	0xxx
MAX RESOLUTION	4224x3200	Sensor Clock Input	6 - 27 MHz

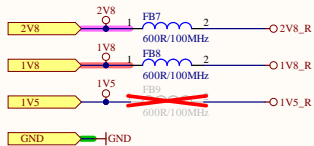
Supply Information		
Supply Name	Module	Voltage
AVDD	VANA	2.8V ± 0.1
DOVDD	VIF	1.8V ± 0.1
DVDD	VDIG	1.05V ± 0.1



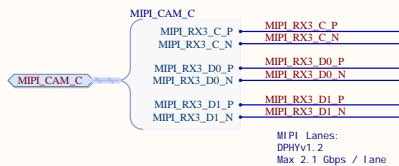
Title DM1095			Laxson Holding 1925 Harmony Park Drive Westminster, CO 80224 United States	
Size: Tabloid	Number: DXXXX	Revision: ROM0ED	Sheet 5 of 9	Cannot open file C:\Users\BrianLaxson\Documents\...
Date: 20/10/2021	Time: 10:07:00	Drawn by: David Malovrh		



B

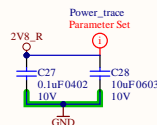
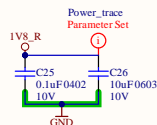
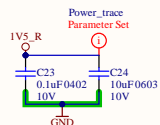
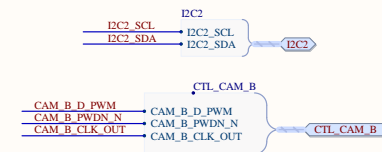
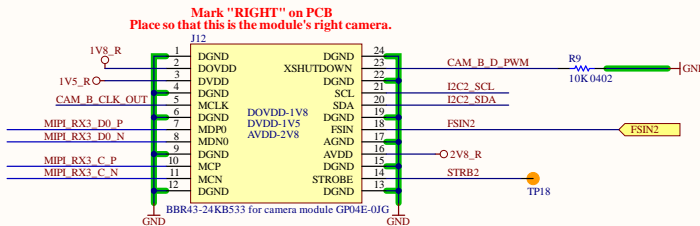


Place FBs and caps close to their associated camera connector.



MODULE & SENSOR INFORMATION			
MODULE	Arducam-0V7251	I2C Clock Rate	400 kHz Max
SENSOR	OV07251-G04A-1G B&W 0.3 Mega pixel CMOS 1/7.5 inch	I2C Address (8 bits)	0xC0(W) 0xC1(R)
MAX RESOLUTION	640x480	Sensor Clock Input	6 - 27 MHz (24 MHz typ.)

Supply Information		
Supply Name	Voltage	Max Current
Module	Sensor	
DOVDD	VDD-I/O 1.8V	55mA
DVDD	VDD-D 1.5V	TBD mA
AVDD	VDD-A 2.8V	20mA



Because the stereo pair of OV9282 modules hard wired to CAM_B (below) no additional reset circuitry is required to account for different conditions. This means that "CAM1" (Left) is reset via CAM_PWDN, and "CAM2" (Right), is reset via CAM_PWM. This also means that the signal CAM_AUX_I01 is no longer required here, as that was only possible if the stereo pair were connected to CAM_C or CAM_D

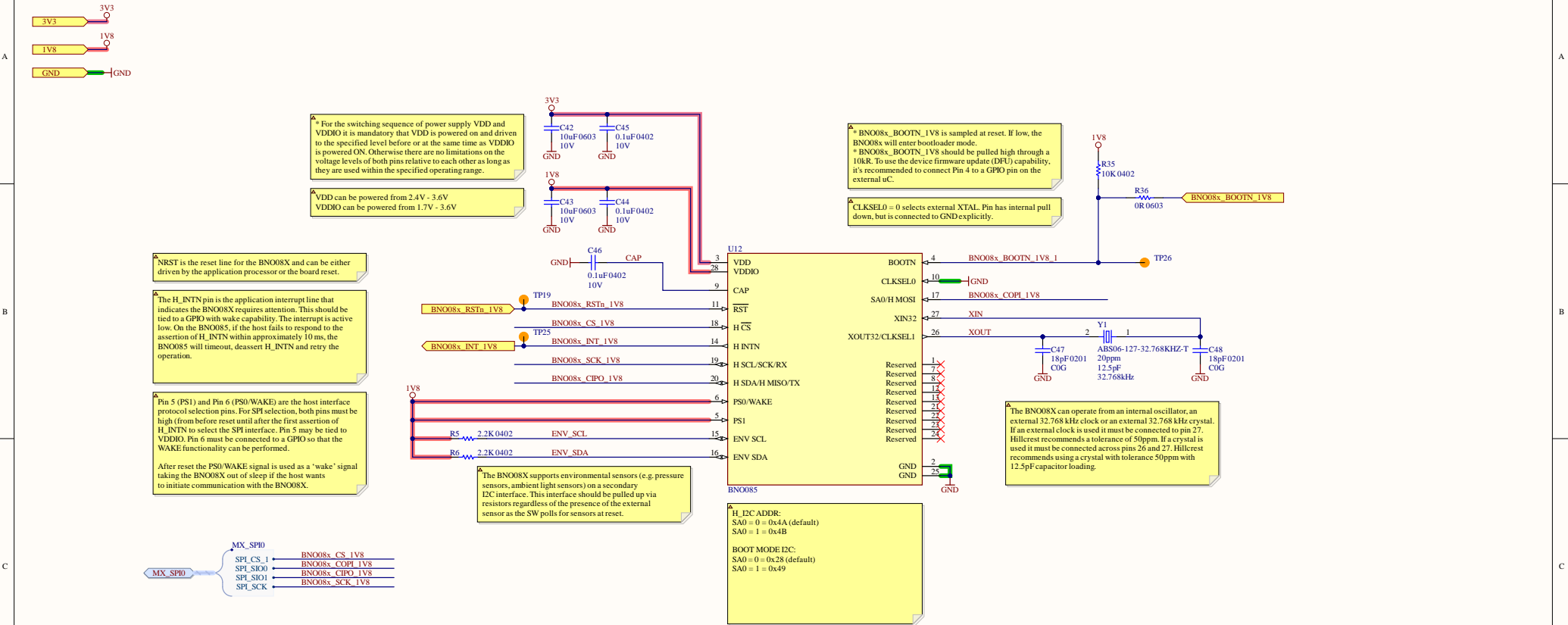
OV9282 sensor I2C address may be changed via I2C protocol. Therefore, in order to assign different I2C address to the sensors on the same I2C bus, one needs to hold the reset the all sensors except one and assign a unique I2C address to the active sensor. This routine should be applied for all sensors in the initialization routine.

CAMERA CONNECTOR RESET CONNECTION TABLE				
CAM NO	CAM_A	CAM_B	CAM_C	CAM_D
CAM 1	CAM_PWDN	CAM_PWDN	CAM_PWDN	CAM_PWDN
CAM 2	CAM_PWM	CAM_PWM	CAM_AUX_I01	CAM_AUX_I01

Title DM1095			Luxonis Holding 1925 Harmony Park Drive Westminster, CO 80234 United States		Cannot open file C:\Users\BrianLuxonis\Documents\...
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inrush current limiter

Title DM1095			Luxonis Holding 1925 Harmony Park Drive Westminster, CO 80234 United States	Cannot open file C:\Users\Brian\Luxonis\Projects\DM1095\DM1095.sch
Size: Tabloid	Number: DXXXX	Revision: ROM0ED		
Date: 20/10/2021	Time: 10:07:00	Sheet 8 of 9		
Drawn by: David Malovrh				



Title <i>DM1095</i>			<i>Luxonis Holding</i> <i>1925 Harmony Park Drive</i> <i>Westminster, CO</i> <i>80234</i> <i>United States</i>	Cannot open file C:\Users\Brian\Luxonis\ Drawing\1095.dwg
Size: <i>Tabloid</i>	Number: <i>DXXXX</i>	Revision: <i>ROM0ED</i>		
Date: <i>20/10/2021</i>	Time: <i>10:07:00</i>	Sheet <i>9</i> of <i>9</i>		
Drawn by: <i>David Malovrh</i>				