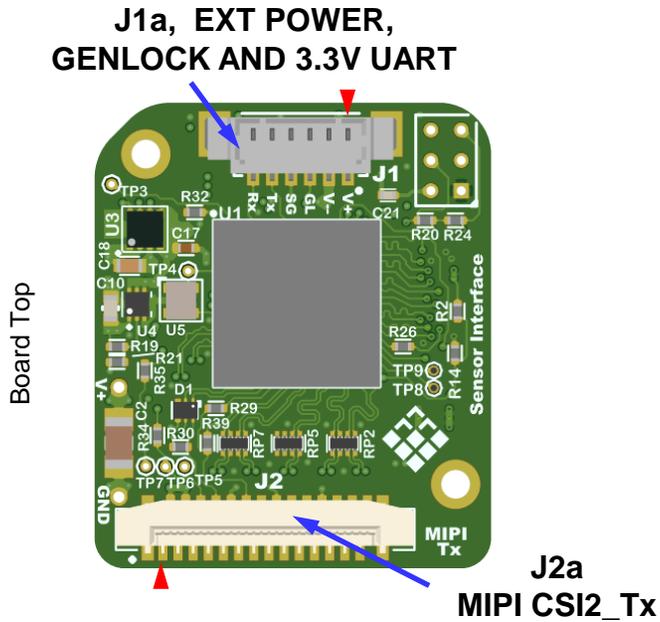


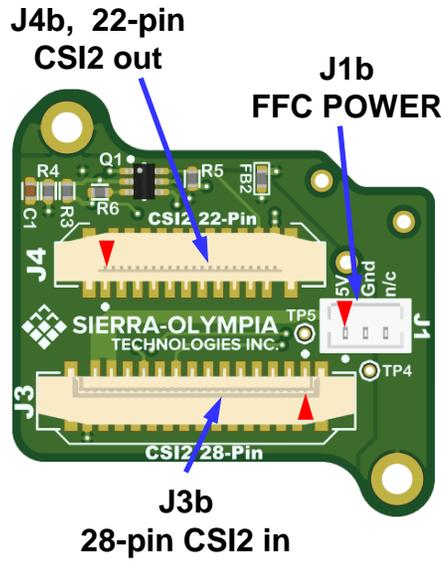
SOTI MIPI Base Board (a)

SOTI p/n: 60-40083, Basler 4-lane pinout



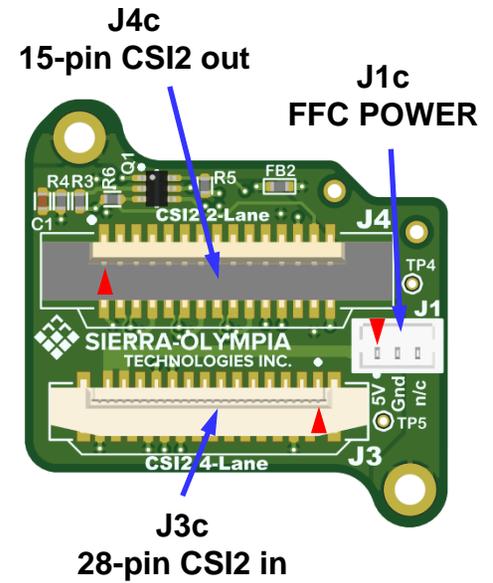
SOTI MIPI 22-pin Adapter (b)

SOTI p/n: 60-40095, Nvidia Orin Nano 4-lane pinout

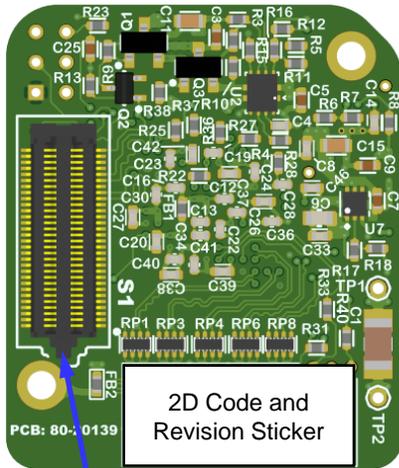


SOTI MIPI 15-pin Adapter (c)

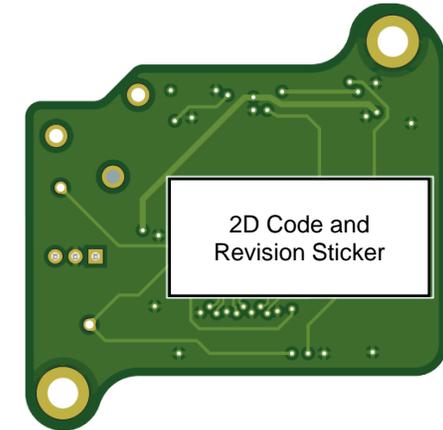
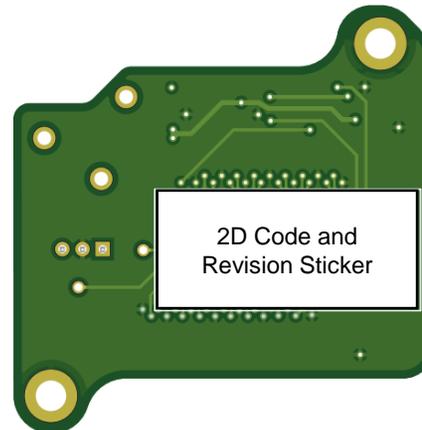
SOTI p/n: 60-40084, Nvidia 2-lane pinout



Board Bottom



OCCUPIED
S1a Connects to
DRS LWIR sensor



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	20-70060 Electrical ICD, Viento Family MIPI	
Product Export Classification Control Number (ECCN): 6A003.b.4.b. This document does not contain export-controlled technology.	Size: A Revision Date: 2024-10-22	Document Rev: B Drawn: W. Kettle
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NOTES:

3. Exceeding Max Ratings could cause damage to components.

These connections exclusive to p/n 60-40083, Base Board

J2a - CSI_Tx (4-lane MIPI output)

Molex 525592852, 28-pos, 0.5mm pitch, FFC connector, Au plating
 +5V FFC power input *is NOT* reverse polarity protected.
 FFC power input *is* overvoltage and fault protected < 1.7A.
 cam_rst, mipi_gpio0, UART signals include 100Ω series isolation.
 UART Rx includes a 100kΩ pull-up for system compatibility.

Position	Name	Direction	Level / Rating
1	Gnd		
2	+5.0 VDC FFC Power	Power Input	4.8 - 5.5V
3			0.5A Typ
4			1.6A Max
5	UART Rx - FFC	Input (pu)	1.8V LVCMOS
6	UART Tx - FFC	Output	(-0.3 - 2.1V)
7	Gnd		
8	i2c_sda	I/O	1.8V
9	i2c_scl	Input	(-0.3 - 2.1V)
10	Gnd		
11	mipi_gpio0	I/O	1.8V LVCMOS
12	cam_rst (active high)	Input	(-0.3 - 2.1V)
13	Gnd		
14	mipi_data0_n	Output	1.8V
15	mipi_data0_p		(-0.3 - 2.1V)
16	Gnd		
17	mipi_data1_n	Output	1.8V
18	mipi_data1_p		(-0.3 - 2.1V)
19	Gnd		
20	mipi_clk_n	Output	1.8V
21	mipi_clk_p		(-0.3 - 2.1V)
22	Gnd		
23	mipi_data2_n	Output	1.8V
24	mipi_data2_p		(-0.3 - 2.1V)
25	Gnd		
26	mipi_data3_n	Output	1.8V
27	mipi_data3_p		(-0.3 - 2.1V)
28	Gnd		

J1a - EXT POWER, GENLOCK, UART

Molex Picoblade 6-position, 1.25 mm pitch
 Mating connector housing: Molex 0510210600
 Connector terminals: Molex 500798001 (26-28 AWG)

+5V Input *is* isolated from J2a 5V FFC input. J1a 5V input *is* reverse polarity, overvoltage protected, fault protected <1.7A. Typical power consumption is less than 2-3W when connected to camera. Peak power consumption occurs during shutter events (<200ms ea). 5V-Ext has priority if applied simultaneously with 5V-FFC (isolated).

If 5V-Ext and 5V-FFC are simultaneously applied, 5V-Ext voltage must be > 0.25V higher than 5V-Ext in order to avoid power source hopping during shutter events (continuous camera reboots).

Genlock and UART signals include 100Ω series isolation.
 See DRS ICD for usage of Genlock signal. I2C commands required to change directions in FW on 60-40083 PCA.
 UART Rx pin includes a weak pull-up (>200kΩ)

Position	Name	Direction	Level / Rating
1	+5V VDC Ext Power	Power Input	4.8 - 5.5V 0.5A Typ 1.6A Max
2	Vin-	Power Return	
3	Genlock - 3.3V	I/O	-0.3V - 3.6V
4	Gnd (tied to Vin-)	Signal Gnd	
5	UART Tx - Ext	ouput	3.3V LVCMOS
6	UART Rx - Ext	input (pu)	(-0.3V - 3.6V)

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NOTES:

3. Exceeding Max Ratings could cause damage to components.

These connections are identical for p/n's 60-40095 and 60-40084

J3b, J3c - CSI_Tx (4-lane MIPI "input")

Molex 525592852, 28-pos, 0.5mm pitch, FFC connector, Au plating
5V power and 1.8V signal pass through. I2C level translated to 1.8V.

Position order inverted to reflect mirrored mating to J2a:

Position	Name	Direction	Level (Rating)
28	Gnd		
27	+5.0 VDC FFC Power	Power "out"	4.8 - 5.5V
26			0.5A Typ
25			1.6A Max
24	UART Rx, FFC	n/c	1.8V
23	UART Tx, FFC	n/c	(-0.3 - 2.1V)
22	Gnd		
21	i2c_sda	i/o	1.8V
20	i2c_scl	"out"	(-0.3 - 2.1V)
19	Gnd		
18	mipi_gpio0	i/o (rsvd)	1.8V
17	cam_rst (active high)	"out"	(-0.3 - 2.1V)
16	Gnd		
15	mipi_data0_n	"in"	1.8V
14	mipi_data0_p		(-0.3 - 2.1V)
13	Gnd		
12	mipi_data1_n	"in"	1.8V
11	mipi_data1_p		(-0.3 - 2.1V)
10	Gnd		
9	mipi_clk_n	"in"	1.8V
8	mipi_clk_p		(-0.3 - 2.1V)
7	Gnd		
6	mipi_data2_n	"in"	1.8V
5	mipi_data2_p		(-0.3 - 2.1V)
4	Gnd		
3	mipi_data3_n	"in"	1.8V
2	mipi_data3_p		(-0.3 - 2.1V)
1	Gnd		

J1b, J1c - FFC POWER INPUT

Molex Picoblade 3-position, 1.25 mm pitch

Mating connector housing: Molex 0510210300

Connector terminals: Molex 500798001 (26-28 AWG)

Pass through connection to J3b, J3c. 5V Input provides power through 28-pin FFC connection to base board (60-40083)

Position	Name	Direction	Level / Rating
1	+5V VDC FFC Power	Power Input	4.8 - 5.5V 0.5A Typ 1.6A Max
2	Vin-	Power Return	
3	n/c	-	

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NOTES:

- Exceeding Max Ratings could cause damage to components.
- Signal integrity (SI) is reduced when using RevA adapter boards. Total FFC cable lengths of 28-pin plus 22-pin connection is reduced to approximately 8inches. 28-pin connection direct to Basler pinout compatible receiver supports up to 2ft FFC length. Future revisions of adapter boards will adjust PCB impedances for better SI.

J4b only on 60-40095

J4b - CSI_Tx (4-lane MIPI "output")

Molex 0525592253, 22-pos, 0.5mm pitch, FFC connector, Au plating
5V power and 1.8V signal pass through. I2C level translated to 3.3V.

Position	Name	Direction	Level (Rating)
1	Gnd		
2	mipi_data3_n	output	1.8V (-0.3 - 2.1V)
3	mipi_data3_p		
4	Gnd		
5	mipi_data2_n	output	1.8V (-0.3 - 2.1V)
6	mipi_data2_p		
7	Gnd		
8	mipi_clk_n	output	1.8V (-0.3 - 2.1V)
9	mipi_clk_p		
10	Gnd		
11	mipi_data1_n	output	1.8V (-0.3 - 2.1V)
12	mipi_data1_p		
13	Gnd		
14	mipi_data0_n	output	1.8V (-0.3 - 2.1V)
15	mipi_data0_p		
16	Gnd		
17	cam_rst (active high)	input	1.8V (-0.3 - 2.1V)
18	mipi_gpio0	i/o	
19	Gnd		
20	i2c_scl_3V3	input	3.3V (-0.3 - 3.6V)
21	i2c_sda_3V3	i/o	
22	n/c	-	3.3V host pwr

J4c only on 60-40084

J4c - CSI_Tx (2-lane MIPI "output")

Molex 0526101572, 15-pos, 1mm pitch, FFC connector, Au plating
5V power and 1.8V signal pass through. I2C level translated to 3.3V.
I2C connection level shifted up to 3.3V

Position	Name	Direction	Level (Rating)
1	Gnd		
2	mipi_data0_n	output	1.8V (-0.3 - 2.1V)
3	mipi_data0_p		
4	Gnd		
5	mipi_data1_n	output	1.8V (-0.3 - 2.1V)
6	mipi_data1_p		
7	Gnd		
8	mipi_clk_n	output	1.8V (-0.3 - 2.1V)
9	mipi_clk_p		
10	Gnd		
11	cam_rst	input	1.8V (-0.3 - 2.1V)
12	mipi_gpio0	i/o	
13	i2c_scl_3V3	input	3.3V (-0.3 - 3.6V)
14	i2c_sda_3V3	i/o	
15	n/c (3.3V on host)		

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Electrical ICD, Viento Family MIPI

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