REVISIONS				
REV	DESCRIPTION	ECO	DATE	Eng.
A	Initial Release	1802	2024-10-22	WK
B	Clarifications to J3b/c pinout table	1842	2025-03-06	WK
C	Added DRS MIPI Part # table, and additional information for the additional variants.	1905	2025-08-19	GO

Viento Family MIPI Electrical ICD

SOTI offers a variety of backend hardware options for transmitting MIPI CSI-2 video from DRS LWIR sensors. Below is a table outlining the various options. Images and pinouts for each variant is included in this document.

DRS MIPI Family Part Number *	Description	Backend PCA Part Number					
		60-40083	60-40095	60-40120	60-40084	60-40139	60-40138
SL-X5-XXX8-XX-M05	28-pin Base Board, Basler Pinout	X					
SL-X5-XXX8-XX	22-pin Orin Nano Adapter	X	X				
SL-X5-XXX8-XX-M03	22-pin Allied Vision/Connect Tech Adapter	X		X			
SL-X5-XXX8-XX-M04	15-pin Jetson Nano/rPi Adapter	X			X		
SL-X5-XXX8-XX-M01	30-pin I-PEX CA					X	
SL-X5-XXX8-XX-M02	20-pin I-PEX CA-II						X

* The X's in the "DRS MIPI Family Part Number" column are place holders for the various sensor and lens options. Contact Sales for available options.

For all MIPI I2C interface configurations, reference SOTI Document 10-80023, Viento Family MIPI API.

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Electrical ICD, Viento Family MIPI

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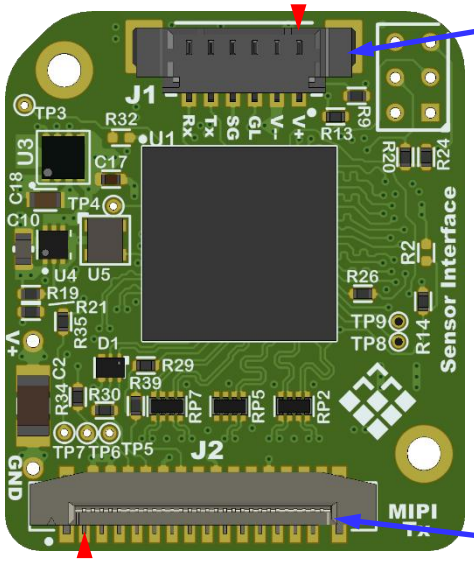
LEGEND: ► Position 1 indicator.

28-pin Base Board, Basler Pinout
SL-X5-XXX8-XX-M05 Variant
60-40083 Only

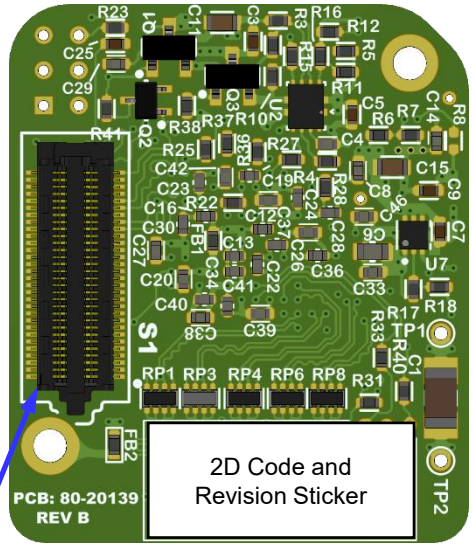
Board Top View



J1
EXT POWER, GENLOCK, UART

J2
MIPI CSI Tx

Board Bottom View



OCCUPIED
S1 Connects to
DRS LWIR sensor

Image for reference only,
sensor and lens options vary.

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	20-70060 Electrical ICD, Viento Family MIPI		
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Caution: Exceeding Max Ratings could cause damage to components.

28-pin Base Board, Basler Pinout
SL-X5-XXX8-XX-M05 Variant
60-40083 Only

J2 - MIPI CSI Tx

Molex 525592852, 28-pos, 0.5mm pitch, FFC connector, Au plating

5V-FFC ***is NOT*** reverse polarity protected.
5V-FFC ***is*** overvoltage and fault protected over 1.7A.

cam_rst and mipi_gpio signals include 100Ω series isolation.
cam_rst includes an internal 22kΩ pull-down resistor.
mipi_gpio2 includes an internal 100kΩ pull-up resistor.
I2C lines include internal 4.99kΩ pull-up resistors.

Position	Name	Direction	Level / Rating
1	GND	-	-
2	5V-FFC Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
3			
4			
5	mipi_gpio2 - 1.8V	I/O (pu)	1.8V (-0.3 - 2.1V)
6	mipi_gpio1 - 1.8V	I/O	
7	GND	-	-
8	i2c_sda - 1.8V	I/O (pu)	1.8V (-0.3 - 2.1V)
9	i2c_scl - 1.8V	Input (pu)	
10	GND	-	-
11	mipi_gpio0 - 1.8V	I/O	1.8V (-0.3 - 2.1V)
12	cam_rst - 1.8V	Input (pd)	
13	GND	-	-
14	mipi_data0_n	Output	1.8V (-0.3 - 2.1V)
15	mipi_data0_p		
16	GND	-	-
17	mipi_data1_n	Output	1.8V (-0.3 - 2.1V)
18	mipi_data1_p		
19	GND	-	-
20	mipi_clk_n	Output	1.8V (-0.3 - 2.1V)
21	mipi_clk_p		
22	GND	-	-
23	mipi_data2_n	Output	1.8V (-0.3 - 2.1V)
24	mipi_data2_p		
25	GND	-	-
26	mipi_data3_n	Output	1.8V (-0.3 - 2.1V)
27	mipi_data3_p		
28	GND	-	-

J1 - 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-EXT is not required; only needed if 5V-FFC is unavailable or insufficient to power the camera. Typical power consumption in steady state is 2-3W, but does experience ~100ms peaks up to 1.6A during shutter actuation depending on camera model.

5V-EXT ***is*** isolated from 5V-FFC.
5V-EXT ***is*** reverse polarity, overvoltage protected, and fault protected over 1.7A.

If 5V-EXT and 5V-FFC are supplied concurrently, 5V-EXT has priority. However, 5V-EXT voltage must be 0.25V greater than 5V-FFC in order to avoid power source hopping during shutter events, which will result in continuous camera reboots.

I2C commands required to change Genlock direction. Genlock is also configurable to use any mipi_gpio on the FFC. Refer to Viento Family MIPI API for more information.

Genlock and UART signals include 100Ω series isolation.
UART Rx pin includes an internal weak pull-up (>200kΩ) resistor.
UART Configuration: 192600-8-N-1

Position	Name	Direction	Level / Rating
1	5V-EXT Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	GND	-	-
3	Genlock - 3.3V	I/O	-0.3V - 3.6V
4	GND	-	-
5	Sensor UART Tx - 3.3V	Ouput	3.3V LVCMOS (-0.3V - 3.6V)
6	Sensor UART Rx - 3.3V	Input (pu)	

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Electrical ICD, Viento Family MIPI

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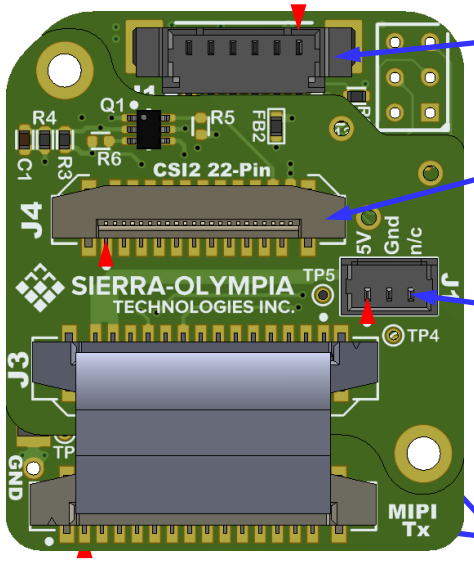
LEGEND: ► Position 1 indicator.

Caution: **J4** only compatible with Orin Nano pinout. Connecting 22-pin FFC to Allied Vision host adapter will short host camera power to Gnd, possibly melting FFC but is unlikely to damage camera device.

22-pin Orin Nano Adapter
SL-X5-XXX8-XX Variant
60-40083 + 60-40095

Board Stack Top View



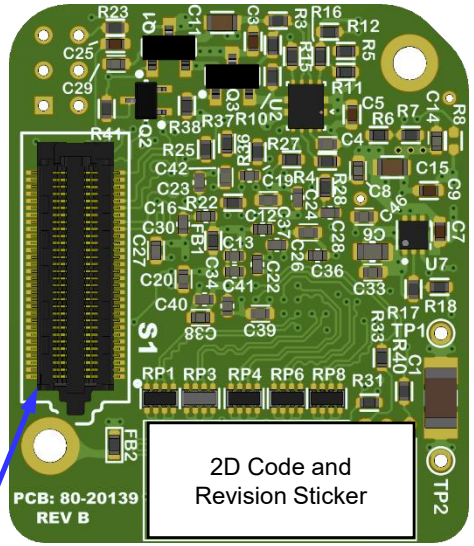
J1s
EXT POWER, GENLOCK, UART

J4a
MIPI CSI Tx

J1a
FFC POWER

OCCUPIED

Board Stack Bottom View



OCCUPIED
S1 Connects to
DRS LWIR sensor

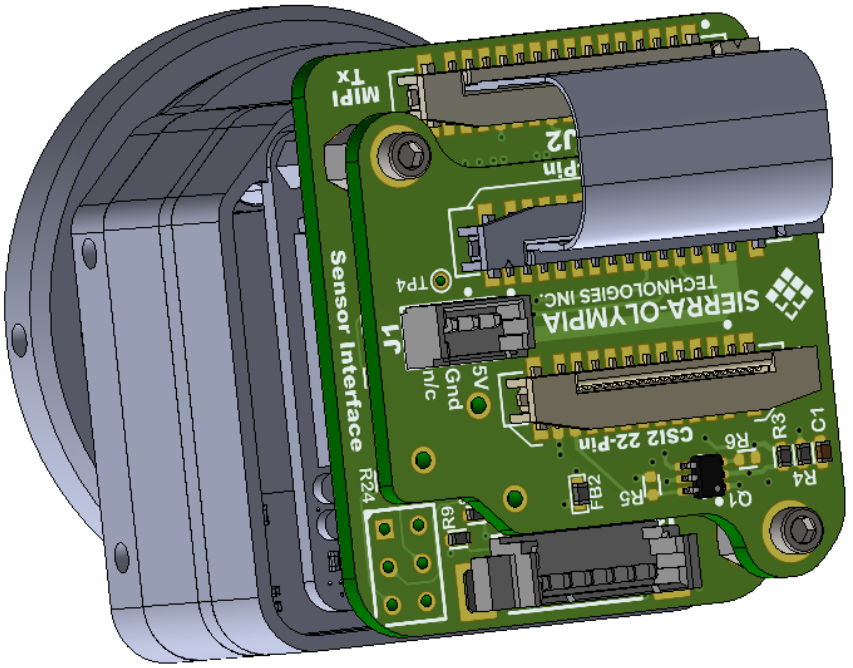


Image for reference only,
sensor and lens options vary.

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Caution: Exceeding Max Ratings could cause damage to components.

22-pin Orin Nano Adapter
SL-X5-XXX8-XX Variant
60-40083 + 60-40095

J1s - 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-EXT is not required; only needed if 5V-FFC is unavailable or insufficient to power the camera. Typical power consumption in steady state is 2-3W, but does experience ~100ms peaks up to 1.6A during shutter actuation depending on camera model.

5V-EXT ***is*** isolated from 5V-FFC.
5V-EXT ***is*** reverse polarity, overvoltage protected, and fault protected over 1.7A.

If 5V-EXT and 5V-FFC are supplied concurrently, 5V-EXT has priority. However, 5V-EXT voltage must be 0.25V greater than 5V-FFC in order to avoid power source hopping during shutter events, which will result in continuous camera reboots.

I2C commands required to change Genlock directions. Genlock is also configurable to use mipi_gpio0 on the FFC. Refer to Viento Family MIPI API for more information.

Genlock and UART signals include 100Ω series isolation.
UART Rx pin includes an internal weak pull-up (>200kΩ) resistor.
UART Configuration: 192600-8-N-1

Position	Name	Direction	Level / Rating
1	5V-EXT Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	GND	-	-
3	Genlock - 3.3V	I/O	-0.3V - 3.6V
4	GND	-	-
5	Sensor UART Tx - 3.3V	Ouput	3.3V LVCMOS (-0.3V - 3.6V)
6	Sensor UART Rx - 3.3V	Input (pu)	

J1a - FFC POWER

Molex Picoblade 3-position, 1.25 mm pitch
Mating connector housing: Molex 0510210300
Connector terminals: Molex 500798001 (26-28 AWG)

See notes in J1s Table for information regarding 5V-FFC vs 5V-EXT.
5V-FFC ***is NOT*** reverse polarity protected.
5V-FFC ***is*** overvoltage and fault protected over 1.7A.

Position	Name	Direction	Level / Rating
1	5V-FFC Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	GND	-	-
3	No Connect	N/C	-

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Caution: Exceeding Max Ratings could cause damage to components.

Caution: **J4** only compatible with Orin Nano pinout. Connecting 22-pin FFC to Allied Vision host adapter will short host camera power to Gnd, possibly melting FFC but is unlikely to damage camera device.

22-pin Orin Nano Adapter
SL-X5-XXX8-XX Variant
60-40083 + 60-40095

J4a - MIPI CSI Tx

Molex 0525592253, 22-pos, 0.5mm pitch, FFC connector, Au plating

3.3V Power Input is required for level shifting of I2C lines only.
Camera Power is supplied by J1s 5V-EXT or J1a 5V-FFC.

cam_rst and mipi_gpio0 signals include 100Ω series isolation.
cam_rst includes an internal 22kΩ pull-down resistor.
I2C signals are level shifted to 3.3V, ***no*** pull-up resistors on-board, integrator is required to provide pull-up resistors.

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	mipi_data2_n	Output	1.8V (-0.3 - 2.1V)
12	mipi_data2_p		
13	GND	-	-
14	mipi_data3_n	Output	1.8V (-0.3 - 2.1V)
15	mipi_data3_p		
16	GND	-	-
17	cam_rst - 1.8V	Input (pd)	1.8V (-0.3 - 2.1V)
18	mipi_gpio0 - 1.8V	I/O	
19	GND	-	-
20	i2c_scl - 3.3V	Input	3.3V (-0.3 - 3.6V)
21	i2c_sda - 3.3V	I/O	
22	3.3V Power Input	Input	3.3V +/-5%

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Electrical ICD, Viento Family MIPI

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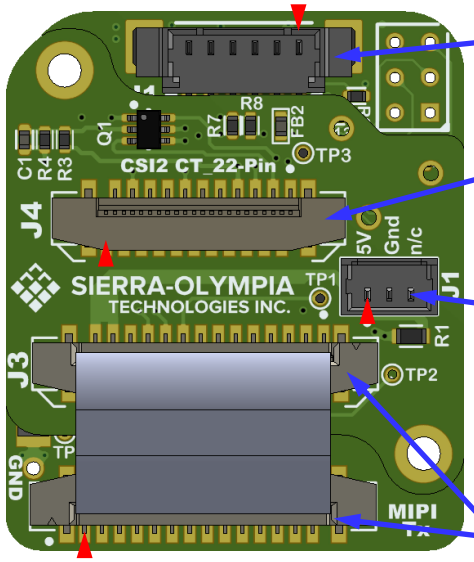
LEGEND: ► Position 1 indicator.

Caution: **J4** only compatible with Allied Vision pinout. Connecting 22-pin FFC to Orin Nano host adapter will short host camera power to Gnd, possibly melting FFC but is unlikely to damage camera device.

22-pin Allied Vision/Connect Tech Adapter
SL-X5-XXX8-XX-M03 Variant
60-40083 + 60-40120

Board Stack Top View



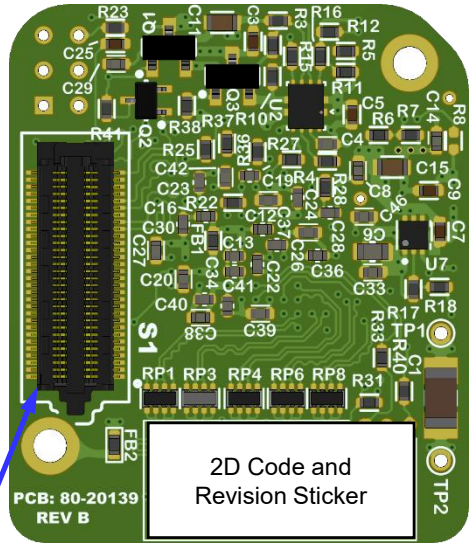
J1s
EXT POWER, GENLOCK, UART

J4a
MIPI CSI2 Tx

J1a
OPTIONAL FFC POWER

OCCUPIED

Board Stack Bottom View



OCCUPIED
S1 Connects to DRS LWIR sensor

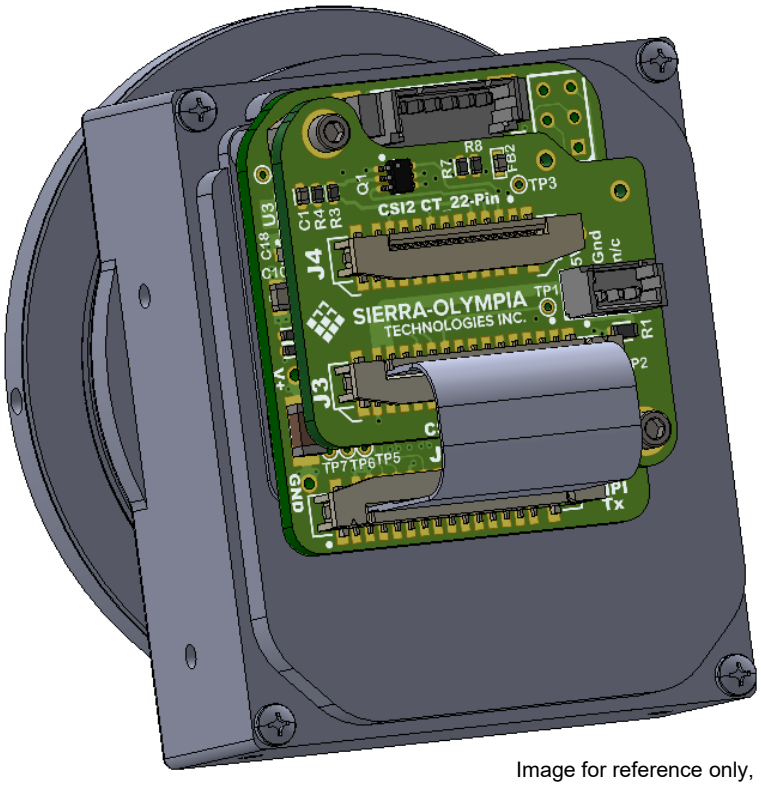


Image for reference only,
sensor and lens options vary.

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Caution: Exceeding Max Ratings could cause damage to components.

Caution: **J4** only compatible with Allied Vision pinout. Connecting 22-pin FFC to Orin Nano host adapter will short host camera power to Gnd, possibly melting FFC but is unlikely to damage camera device.

22-pin Allied Vision/Connect Tech Adapter
SL-X5-XXX8-XX-M03 Variant
60-40083 + 60-40120

J4a - MIPI CSI_Tx

Molex 0525592253, 22-pos, 0.5mm pitch, FFC connector, Au plating

See notes in J1s Table for information regarding 5V-FFC vs 5V-EXT.
5V-FFC ***is NOT*** reverse polarity protected.
5V-FFC ***is*** overvoltage and fault protected over 1.7A.
CAUTION: Do *NOT* supply 5V-FFC to J1a and J4a concurrently.

cam_rst and mip_gpio0 are level shifted to 3.3V and include an internal pull-down resistor.
I2C signals are level shifted to 3.3V, ***no*** pull-up resistors on-board, integrator is required to provide pull-up resistors.

Position	Name	Direction	Level / Rating
1	5V-FFC Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	i2c_scl - 3.3V	Input	3.3V (-0.3 - 3.6V)
3	i2c_sda - 3.3V	I/O	
4	5V-FFC Power Input	Power Input	See Above
5	*mipi_gpio0 - 3.3V	Input (pd)	3.3V (-0.3 - 3.6V)
6	cam_rst - 3.3V	Input (pd)	
7	5V-FFC Power Input	Power Input	See Above
8	mipi_data3_n	Output	1.8V (-0.3 - 2.1V)
9	mipi_data3_p		
10	GND	-	-
11	mipi_data2_n	Output	1.8V (-0.3 - 2.1V)
12	mipi_data2_p		
13	GND	-	-
14	mipi_clk_n	Output	1.8V (-0.3 - 2.1V)
15	mipi_clk_p		
16	GND	-	-
17	mipi_data1_n	Output	1.8V (-0.3 - 2.1V)
18	mipi_data1_p		
19	GND	-	-
20	mipi_data0_n	Output	1.8V (-0.3 - 2.1V)
21	mipi_data0_p		
22	GND	-	-

* RevA of 60-40120 and earlier have pin 5 as No Connect, but can be connected to mipi_gpio0 with blue wire modification. Contact SOTI for more information if you have a RevA or earlier board.

J1a - OPTIONAL FFC POWER

Molex Picoblade 3-position, 1.25 mm pitch
Mating connector housing: Molex 0510210300
Connector terminals: Molex 500798001 (26-28 AWG)

See notes in J1s Table for information regarding 5V-FFC vs 5V-EXT.
5V-FFC ***is NOT*** reverse polarity protected.
5V-FFC ***is*** overvoltage and fault protected over 1.7A.
CAUTION: Do *NOT* supply 5V-FFC to J1a and J4a concurrently.

Position	Name	Direction	Level / Rating
1	5V-FFC Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	GND	-	-
3	Not Connected	N/C	-

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20-70060

Electrical ICD, Viento Family MIPI

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Caution: Exceeding Max Ratings could cause damage to components.

22-pin Allied Vision/Connect Tech Adapter
SL-X5-XXX8-XX-M03 Variant
60-40083 + 60-40120

J1s - 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-EXT is not required; only needed if 5V-FFC is unavailable or insufficient to power the camera. Typical power consumption in steady state is 2-3W, but does experience ~100ms peaks up to 1.6A during shutter actuation depending on camera model.

5V-EXT ***is*** isolated from 5V-FFC.
5V-EXT ***is*** reverse polarity, overvoltage protected, and fault protected over 1.7A.

If 5V-EXT and 5V-FFC are supplied concurrently, 5V-EXT has priority. However, 5V-EXT voltage must be 0.25V greater than 5V-FFC in order to avoid power source hopping during shutter events, which will result in continuous camera reboots.

I2C commands required to change Genlock direction. Refer to Viento Family MIPI API for more information.

Genlock and UART signals include 100Ω series isolation.
UART Rx pin includes an internal weak pull-up (>200kΩ) resistor.
UART Configuration: 192600-8-N-1

Position	Name	Direction	Level / Rating
1	5V-EXT Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	GND	-	-
3	Genlock - 3.3V	I/O	-0.3V - 3.6V
4	GND	-	-
5	Sensor UART Tx - 3.3V	Ouput	3.3V LVCMOS (-0.3V - 3.6V)
6	Sensor UART Rx - 3.3V	Input (pu)	

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Electrical ICD, Viento Family MIPI

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Size: **A** | Revision Date: 2025-08-19 | Document Rev: **C**

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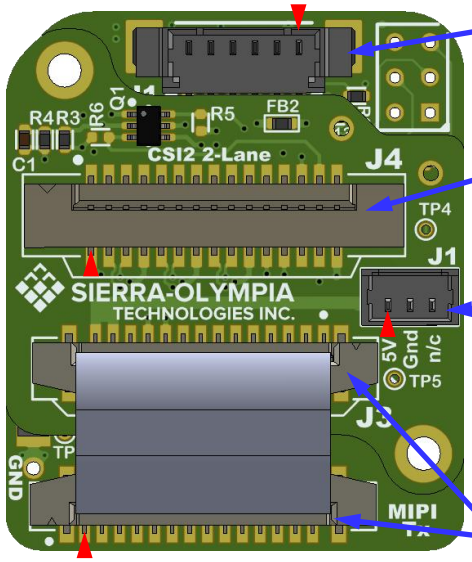
LEGEND: ► Position 1 indicator.

15-pin Jetson Nano/rPi Adapter
SL-X5-XXX8-XX-M04 Variant
60-40083 + 60-40084

Board Stack Top View



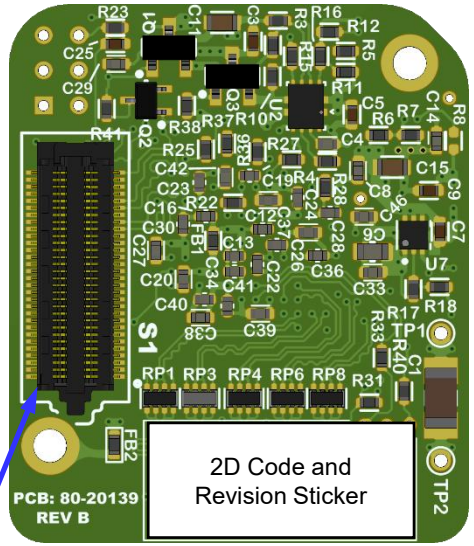
J1s
EXT POWER,
GENLOCK, UART

J4a
MIPI CSI2 Tx

J1a
EXT POWER

OCCUPIED

Board Stack Bottom View



OCCUPIED
S1 Connects to
DRS LWIR sensor

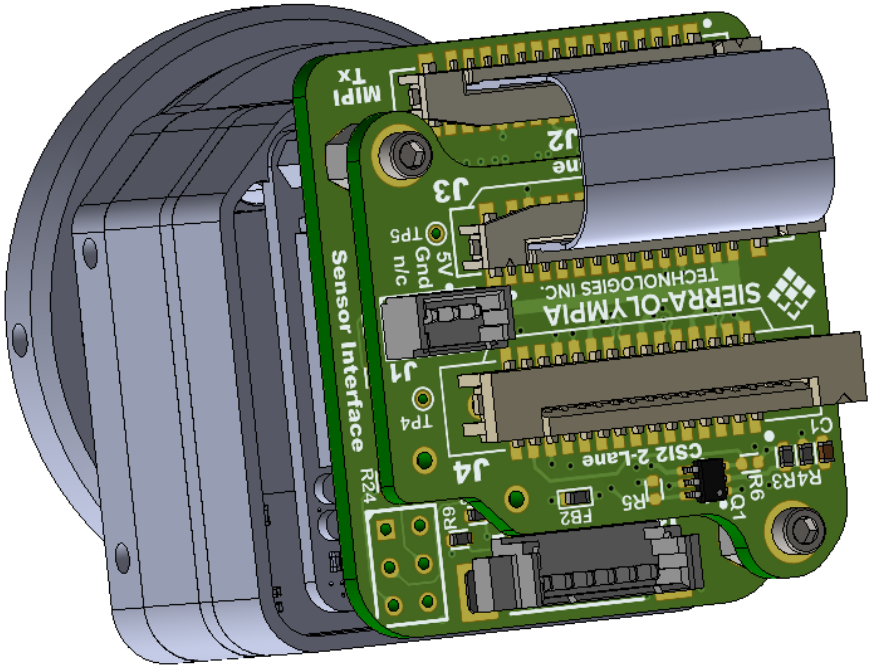


Image for reference only,
sensor and lens options vary.

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Caution: Exceeding Max Ratings could cause damage to components.

15-pin Jetson Nano/rPi Adapter
SL-X5-XXX8-XX-M04 Variant
60-40083 + 60-40084

J4a - MIPI CSI Tx

Molex 0526101572, 15-pos, 1mm pitch, FFC connector, Au plating

3.3V Power Input is required for level shifting of I2C lines only.
Camera Power is supplied by J1s 5V-EXT or J1a 5V-FFC.

cam_rst and mipi_gpio0 signals include 100Ω series isolation.
cam_rst includes an internal 22kΩ pull-down resistor.
I2C signals are level shifted to 3.3V, ***no*** pull-up resistors on-board, integrator is required to provide pull-up resistors.

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 - 1.8V	Input (pd)	1.8V (-0.3 - 2.1V)
12	mipi_gpio0 - 1.8V	I/O	
13	i2c_scl - 3.3V	Input	3.3V (-0.3 - 3.6V)
14	i2c_sda - 3.3V	I/O	
15	3.3V Power Input	Input	3.3V +/-5%

J1a - FFC POWER

Molex Picoblade 3-position, 1.25 mm pitch
Mating connector housing: Molex 0510210300
Connector terminals: Molex 500798001 (26-28 AWG)

See notes in J1s Table for information regarding 5V-FFC vs 5V-EXT.
5V-FFC ***is NOT*** reverse polarity protected.
5V-FFC ***is*** overvoltage and fault protected over 1.7A.

Position	Name	Direction	Level / Rating
1	5V-FFC Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	GND	-	-
3	No Connect	N/C	-

J1s - 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-EXT is not required; only needed if 5V-FFC is unavailable or insufficient to power the camera. Typical power consumption in steady state is 2-3W, but does experience ~100ms peaks up to 1.6A during shutter actuation depending on camera model.

5V-EXT ***is*** isolated from 5V-FFC.
5V-EXT ***is*** reverse polarity, overvoltage protected, and fault protected over 1.7A.

If 5V-EXT and 5V-FFC are supplied concurrently, 5V-EXT has priority. However, 5V-EXT voltage must be 0.25V greater than 5V-FFC in order to avoid power source hopping during shutter events, which will result in continuous camera reboots.

I2C commands required to change Genlock direction. Genlock is also configurable to use mipi_gpio0 on the FFC. Refer to Viento Family MIPI API for more information.

Genlock and UART signals include 100Ω series isolation.
UART Rx pin includes an internal weak pull-up (>200kΩ) resistor.
UART Configuration: 192600-8-N-1

Position	Name	Direction	Level / Rating
1	5V-EXT Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	GND	-	-
3	Genlock - 3.3V	I/O	-0.3V - 3.6V
4	GND	-	-
5	Sensor UART Tx - 3.3V	Ouput	3.3V LVCMOS (-0.3V - 3.6V)
6	Sensor UART Rx - 3.3V	Input (pu)	

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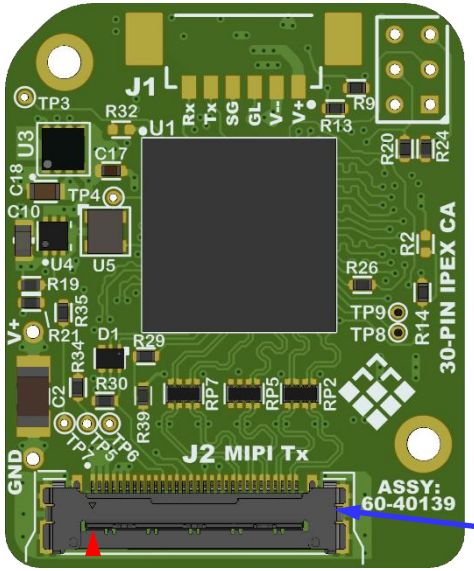
LEGEND: ► Position 1 indicator.

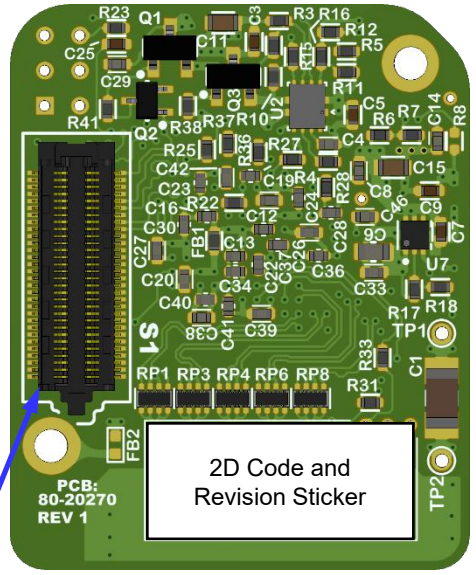
30-pin I-PEX CA
SL-X5-XXX8-XX-M01 Variant
60-40139 Only

Board Top View



J2
MIPI CSI2 Tx

Board Bottom View



OCCUPIED
S1 Connects to
DRS LWIR sensor

Image for reference only,
sensor and lens options vary.

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Caution: Exceeding Max Ratings could cause damage to components.

30-pin I-PEX CA
SL-X5-XXX8-XX-M01 Variant
60-40139 Only

J2 - MIPI CSI Tx

I-PEX 20525-030E-02, 30-pos Micro-coax connector
Requires custom cable with discrete wires in position 1-9, blank in position 10 and then micro-coax in positions 11-30. Contact I-Pex for cable customizations. SOTI may be able to provide low volumes.

5V-FFC ***is NOT*** reverse polarity protected.
5V-FFC ***is*** overvoltage and fault protected over 1.7A.

I2C commands required to configure mipi_gpio functionality. Refer to Viento Family MIPI API for more information.

cam_rst and mipi_gpio signals include 100Ω series isolation.
cam_rst includes an internal 22kΩ pull-down resistor.
I2C lines include internal 4.99kΩ pull-up resistsors.

Position	Name	Direction	Level / Rating
1 thru 3	5V Input Power	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
4 thru 6	GND	-	-
7 thru 10	No Connect	N/C	-
11	mipi_gpio1 - 1.8V	I/O	1.8V (-0.3 - 2.1V)
12	No Connect	N/C	-
13	i2c_sda - 1.8V	I/O (pu)	1.8V (-0.3 - 2.1V)
14	No Connect	N/C	-
15	i2c_scl - 1.8V	Input (pu)	1.8V (-0.3 - 2.1V)
16	No Connect	N/C	-
17	mipi_gpio0 - 1.8V	I/O	1.8V (-0.3 - 2.1V)
18	No Connect	N/C	-
19	cam_rst - 1.8V	Input (pd)	1.8V (-0.3 - 2.1V)
20	No Connect	N/C	-
21	mipi_data3_n	Output	1.8V (-0.3 - 2.1V)
22	mipi_data3_p		
23	mipi_data2_n	Output	1.8V (-0.3 - 2.1V)
24	mipi_data2_p		
25	mipi_clk_n	Output	1.8V (-0.3 - 2.1V)
26	mipi_clk_p		
27	mipi_data1_n	Output	1.8V (-0.3 - 2.1V)
28	mipi_data1_p		
29	mipi_data0_n	Output	1.8V (-0.3 - 2.1V)
30	mipi_data0_p		

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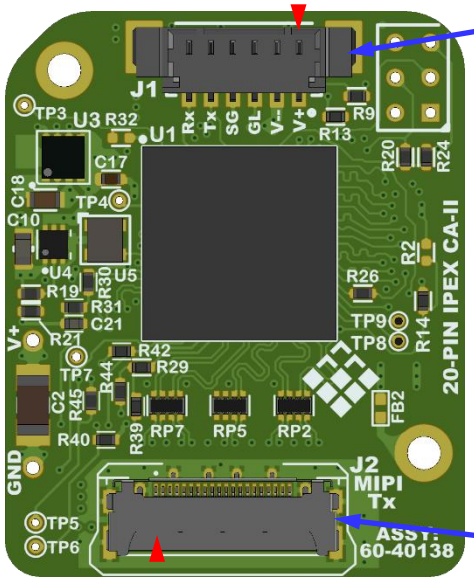
LEGEND: ► Position 1 indicator.

Note: **J2** pinout is mirrored vs. host. Cable harness is pin1 to pin20. Power conductors on harness should be adjacent to pin1 marked below. Reversed cable will not damage unit but there will be no video.

20-pin I-PEX CA-II
SL-X5-XXX8-XX-M02 Variant
60-40138 Only

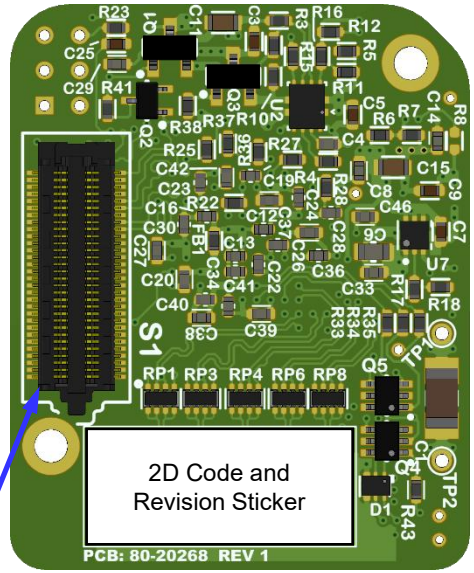
Board Top View



J1
EXT POWER, GENLOCK, UART

J2
MIPI CSI2 Tx

Board Bottom View



OCCUPIED
S1 Connects to
DRS LWIR sensor

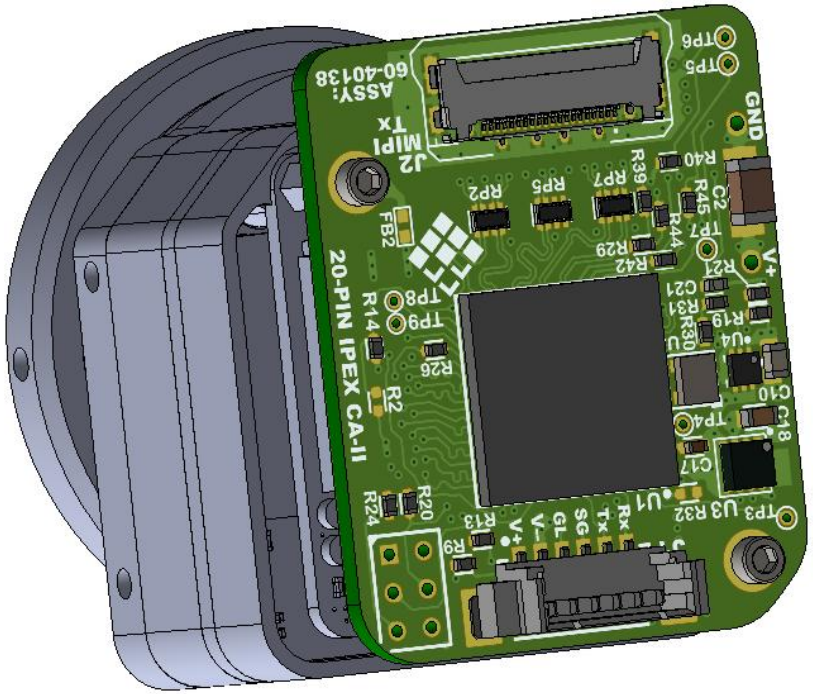


Image for reference only,
sensor and lens options vary.

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Caution: Exceeding Max Ratings could cause damage to components.

Note: **J2** pinout is mirrored vs. host. Cable harness is pin1 to pin20. Power conductors on harness should be adjacent to pin1 marked above. Reversed cable will not damage unit but there will be no video.

20-pin I-PEX CA-II
SL-X5-XXX8-XX-M02 Variant
60-40138 Only

J2 - MIPI CSI Tx

I-PEX 20682-020E-02, 20-pos Micro-coax connector
Requires custom cable with discrete wires in position 1-4, blank in position 5 and then micro-coax in positions 6-20. Contact I-Pex for cable customizations. SOTI may be able to provide low volumes.

See notes in J1 Table for information regarding 5V-FFC vs 5V-EXT.
5V-FFC ***is NOT*** reverse polarity protected.
5V-FFC ***is*** overvoltage and fault protected over 1.7A.

cam_rst, mipi_gpio, and I2C signals are level shifted to 3.3V.
cam_rst includes an internal pull-down resistor.
mipi_gpio signals include internal 10kΩ pull-up resistors.
I2C signals do ***not*** include pull-up resistors on-board, integrator is required to provide pull-up resistors.

Position	Name	Direction	Level / Rating
1	5V-FFC Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2			
3			
4			
5	No Connect	N/C	-
6	cam_rst - 3.3V	Input (pd)	3.3V (-0.3 - 3.6V)
7	mipi_data3_n	Output	1.8V (-0.3 - 2.1V)
8	mipi_data3_p		
9	mipi_data2_n	Output	1.8V (-0.3 - 2.1V)
10	mipi_data2_p		
11	mipi_clk_n	Output	1.8V (-0.3 - 2.1V)
12	mipi_clk_p		
13	mipi_data1_n	Output	1.8V (-0.3 - 2.1V)
14	mipi_data1_p		
15	mipi_data0_n	Output	1.8V (-0.3 - 2.1V)
16	mipi_data0_p		
17	i2c_scl - 3.3V	Input	3.3V (-0.3 - 3.6V)
18	i2c_sda - 3.3V	I/O	
19	mipi_gpio0 - 3.3V	I/O (pu)	3.3V (-0.3 - 3.6V)
20	mipi_gpio1 - 3.3V	I/O (pu)	

J1 - 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-EXT is not required; only needed if 5V-FFC is unavailable or insufficient to power the camera. Typical power consumption in steady state is 2-3W, but does experience ~100ms peaks up to 1.6A during shutter actuation depending on camera model.

5V-EXT ***is*** isolated from 5V-FFC.
5V-EXT ***is*** reverse polarity, overvoltage protected, and fault protected over 1.7A.

If 5V-EXT and 5V-FFC are supplied concurrently, 5V-EXT has priority. However, 5V-EXT voltage must be 0.25V greater than 5V-FFC in order to avoid power source hopping during shutter events, which will result in continuous camera reboots.

I2C commands required to change Genlock direction. Genlock is also configurable to use any mipi_gpio on the FFC. Refer to Viento Family MIPI API for more information.

Genlock and UART signals include 100Ω series isolation.
UART Rx pin includes an internal weak pull-up (>200kΩ) resistor.
UART Configuration: 192600-8-N-1

Position	Name	Direction	Level / Rating
1	5V-EXT Power Input	Power Input	4.8 - 5.5V 0.5A Typ, 1.6A Max
2	GND	-	-
3	Genlock - 3.3V	I/O	-0.3V - 3.6V
4	GND	-	-
5	Sensor UART Tx - 3.3V	Ouput	3.3V LVCMOS (-0.3V - 3.6V)
6	Sensor UART Rx - 3.3V	Input (pu)	

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