

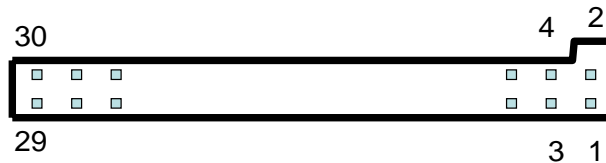
OVERVIEW OF THE PHOTON ELECTRICAL INTERFACE

Pin definitions of the 30-pin board connector for interface to the SAMTEC TFML-115-02-S-D-P connector (J1) are shown below. This is the primary connector interface to the Photon camera.

Power Board to External I/O Connector Pin Definitions

Pin #	Signal Name	Signal Definition
1,2,5,6	GND	Ground
3	3.15V_OUT	3.15V output
4	PWR_IN	Input voltage
7	1.5V_OUT	1.5V output
8	LIN	Do not connect
9	RX2	Spare Serial Communication receive
10	RX	Primary Serial Communication receive
11	TX2	Spare Serial Communication transmit
12	TX	Primary Serial Communication transmit
13	LVDS_VID2+	Digital Port 2 Output Data, positive output
14	SD_DATA-	Digital Port 1 Output Data, negative output
15	LVDS_VID2-	Digital Port 2 Output Data, negative output
16	SD_DATA+	Digital Port 1 Output Data, positive output
17	LVDS_VID1+	Digital Port 2 Sync, positive output
18	SD_FSYNC-	Digital Port 1 Sync, negative output
19	LVDS_VID1-	Digital Port 2 Sync, negative output
20	SD_FSYNC+	Digital Port 1 Sync, positive output
21	LVDS_VID0+	Digital Port 2 Clock, positive output
22	SD_CLK-	Digital Port 1 Clock, negative output
23	LVDS_VID0-	Digital Port 2 Clock, negative output
24	SD_CLK+	Digital Port 1 Clock, positive output
25	TEMP2	Temp Sensor port 2
26	DIS0_EXT	Frame Sync input
27	DIS2_EXT	Discrete Input Channel 2
28	VIDEO_LO	Analog Video, negative output
29	DIS1_EXT	Discrete Input, Channel 1
30	VIDEO_HI	Analog Video, positive output

Note: The mating connector is SAMTEC SFML-115-T1-S-D-K



30-pin SAMTEC (M) connector on camera

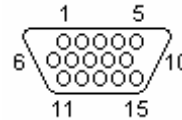
OVERVIEW OF THE PHOTON ELECTRICAL INTERFACE

The 15-pin high density D-Sub connector pin definitions are shown below in the case that the wearsaver adapter is used. The signals on this connector include input power, analog video output, serial communication for camera control, and the digital data output.

Photon 15-pin D-Sub Connector Pin Definitions

Pin #	Signal Name	Signal Definition
1	VIDEO_HI	Analog Video, positive output
2	SD_FSYNC+	Digital Port 1 Sync, positive output
3	GND	Ground
4	GND	Ground
5	GND	Ground
6	VIDEO_LO	Analog Video, negative output
7	SD_CLK+	Digital Port 1 Clock, positive output
8	SD_DATA+	Digital Port 1 Output Data, positive output
9	TX	Primary Serial Communication transmit
10	PWR_IN	Input Voltage
11	SD_CLK-	Digital Port 1 Clock, negative output
12	SD_FSYNC-	Digital Port 1 Sync, negative output
13	SD_DATA-	Digital Port 1 Output Data, negative output
14	RX	Primary Serial Communication receive
15	PWR IN	Input Voltage

15-pin HD D-Sub (M) connector on camera



Power Interface

The camera provides full functionality when voltage as specified in the table below is applied across PWR_IN and GND on the power-board I/O connector.

Parameter	Value	Notes
Minimum voltage	5.0V	<i>Absolute minimum is 4.8V</i>
Maximum voltage	24.0V	<i>Absolute maximum is 26 V</i>
Nominal Load Power	≤ 2000 mW	<i>Typical power is 1600 mW</i>
Peak Load Power at start-up	4000 mW	<i>Assuming no load between HTR and HTR_RTN.</i>

Analog Video Interface

- a. The camera provides differential analog video on the signals named VIDEO_LO and VIDEO_HI.
- b. When the VIDEO_LO signal is tied to ground, the analog video signal meets the timing and voltage requirements of either NTSC or PAL protocol. (The selection between NTSC or PAL is a factory setting that is not selectable during operation.)
- c. The analog video signal is intended to drive a 75-ohm load. Use of coaxial cable with 75 ohm characteristic impedance is recommended.