AP0101AT2L00XPGAH-GEVB

AP0101AT Evaluation Board User's Manual

ON Semiconductor®

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EVAL BOARD USER'S MANUAL

Evaluation Board Overview

The evaluation boards are designed to demonstrate the features of ON Semiconductor's image sensors products. This headboard is intended to plug directly into the Demo 2× system. Test points and jumpers on the board provide access to the clock, I/Os, and other miscellaneous signals.

Features

- Clock Input
  - Default – 27 MHz Crystal Oscillator
  - Optional Demo 2× Controlled MClk
- Two Wire Serial Interface
- Parallel Interface
- HiSPi (High Speed Serial Pixel) Interface
- ROHS Compliant

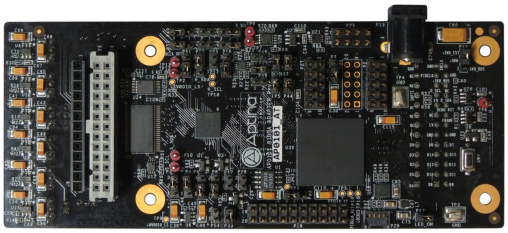

Figure 1. AP0101AT Evaluation Board

Block Diagram

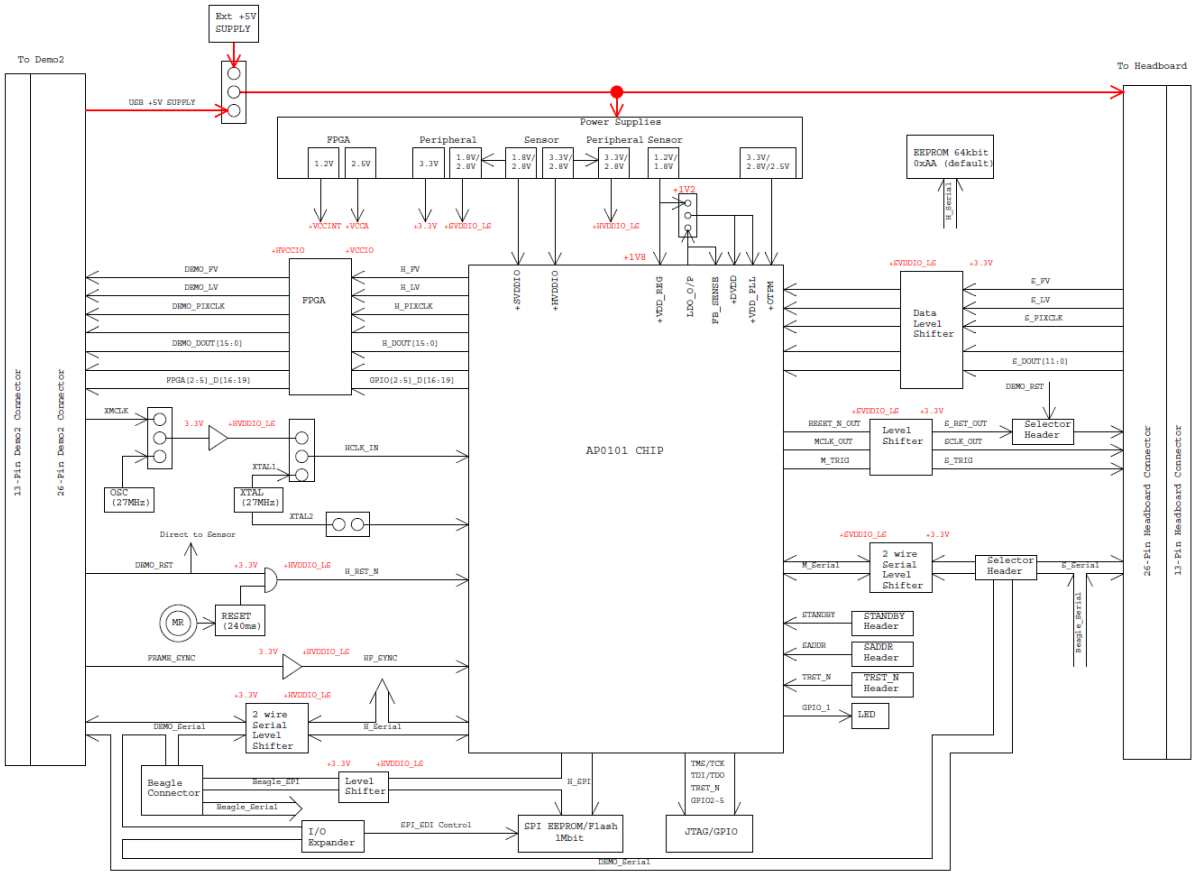

Figure 2. Block Diagram of AP0101AT2L00XPGAH−GEVB

Top View

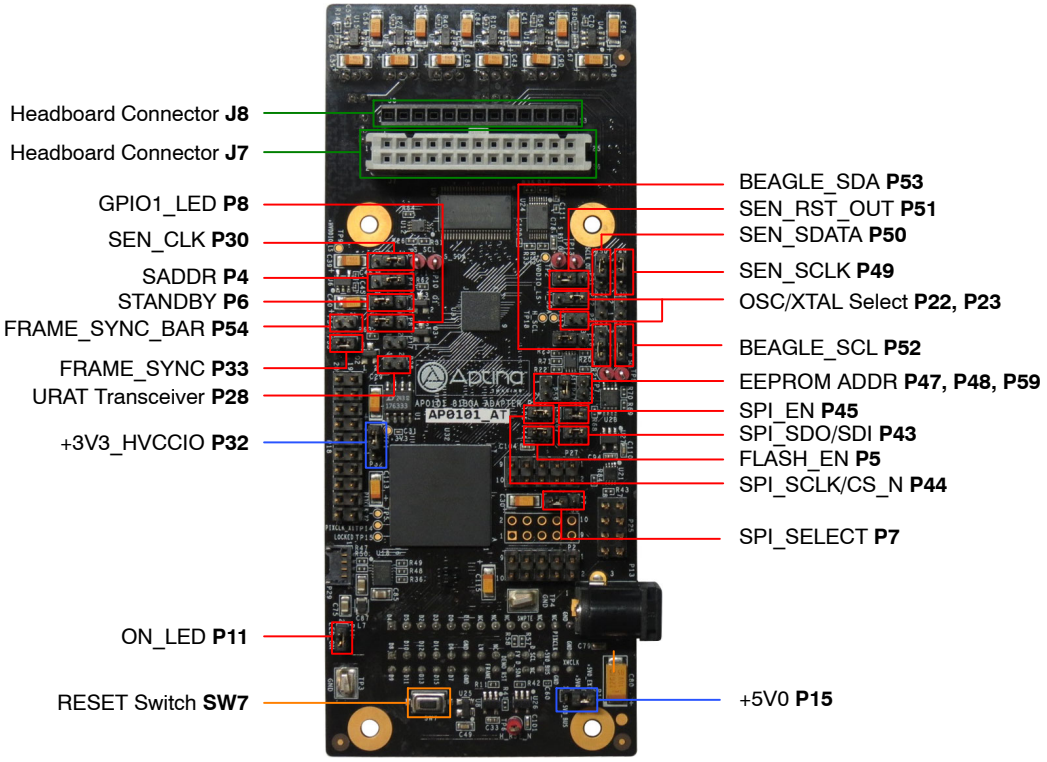

Figure 3. Top View of the Board with Default Jumpers

Bottom View

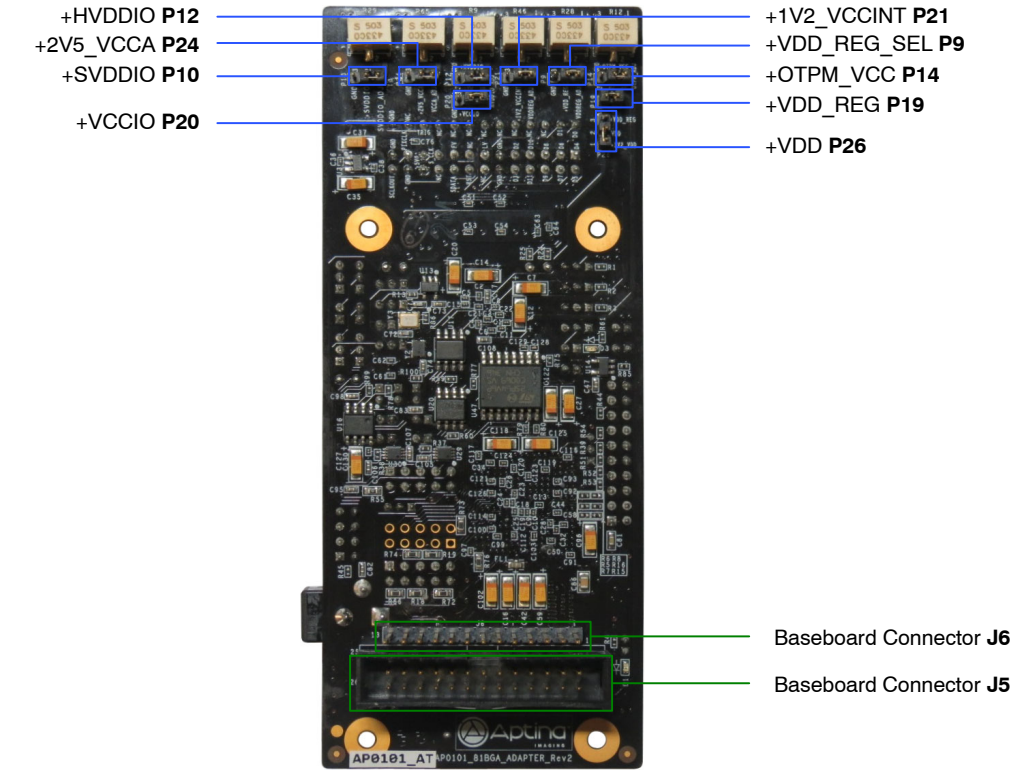

Figure 4. Bottom View of the Board

Jumper Pin Location

The jumpers on headboards start with Pin 1 on the leftmost side of the pin. Grouped jumpers increase in pin size with each jumper added.

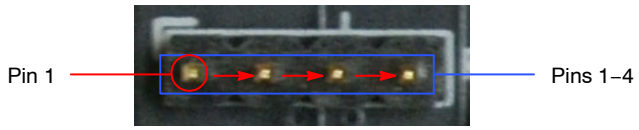

Figure 5. Pin Locations for a Single Jumper. Pin 1 is Located at the Leftmost Side and Increases as it Moves to the Right

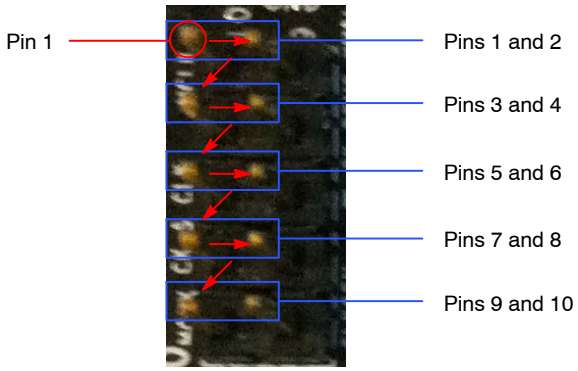

Figure 6. Pin Locations and Assignments of Grouped Jumpers. Pin 1 is Located at the Top-Left Corner and Increases in a Zigzag Fashion Shown in the Picture

Jumper/Header Functions & Default Positions

Table 1. JUMPERS AND HEADERS

Jumper/Header No.	Jumper/Header Name	Pins	Description
P1	VPP	Open	OTPM Programming Voltage Not Supplied
P3	TRST_BAR	2−3 (Default)	Set to Normal Mode
		1−2	TEST Mode
P4	SADDR	2−3 (Default)	I²C Address Set to 0x90
		1−2	I²C Address Set to 0xBA
P5	FLASH_EN	1−2 (Default)	GND; AP0101 in HOST Mode
		Open	SPI_SDI_SEL; AP0101 in FLASH Mode
P6	STANDBY	1−2 (Default)	Active Mode
		2−3	Standby Mode
		Open	I²C IO Expander Control
P7	SPI_SELECT	2−3 (Default)	FLASH Disable
		1−2	EEPROM Disable
P8	GPIO1_LED	1−2 (Default)	Set to GPI
		2−3	Set to GPO
P9	+VDD_REG	1−2 (Default)	Connects to On-Board +VDD_REG Power Supply
		2−3	External Power Supply Connection
P10	+SVDDIO	1−2 (Default)	Connects to On-Board +SVDDIO Power Supply
		2−3	External Power Supply Connection
P11	ON_LED	1−2 (Default)	Connects to On-Board LED to Indicate Power On

Table 1. JUMPERS AND HEADERS (continued)

Jumper/Header No.	Jumper/Header Name	Pins	Description
P12	+HVDDIO	1−2 (Default)	Connects to On-Board +HVDDIO Power Supply
		2−3	External Power Supply Connection
P14	+OTPM_VCC	1−2 (Default)	Connects to On-Board +OTPM_VCC Power Supply
		2−3	External Power Supply Connection
P15	+5V0	1−2 (Default)	USB +5V0_BUS Power Supply Connection
		2−3	Connects to On-Board +5V0_EXT Power Supply
P16	CLK_SELECT	1−2 (Default)	Connects to On-Board Oscillator
		2−3	Connects to XMCLK from Demo2× Baseboard
P17	GPIO1_LED	Open (Default)	Off Frame LED
		1−2	On Frame LED
P19	+VDD_REG	1−2 (Default)	Connects to On-Board +1V8_VDD_REG Power Supply
		2−3	External Power Supply Connection
P20	+VCCIO	1−2 (Default)	Connects to On-Board +VCCIO Power Supply
		2−3	External Power Supply Connection
P21	+1V2_VCCINT	1−2 (Default)	Connects to On-Board +1V2_VCCINT Power Supply
		2−3	External Power Supply Connection
P22, P23	OSC/XTAL Selection	P22 2−3, P23 Open (Default)	Selects Oscillator as AP0101 Input Clock
		P22 2−3, P23 1−2	Selects Crystal as AP0101 Input Clock
P24	+2V5_VCCA	1−2 (Default)	Connects to On-Board +2V5_VCCA Power Suppl
		2−3	External Power Supply Connection
P26	+VDD	1−2 (Default)	Connects to On-Board +1V2_VDD_REG Power Supply
		2−3	External Power Supply Connection
P28	UART Transceiver	Open (Default)	Turn Off UART Transceiver
		1−2	Turn On UART Transceiver
P30	SEN_CLK	Open (Default)	Beagle Serial No Access to Demo 2× & Sensor
		1−2	Beagle Serial Access to Demo 2× & Sensor
P31	SEN_DATA	Open (Default)	Beagle Serial No Access to Demo 2× & Sensor
		1−2	Beagle Serial Access to Demo 2× & Sensor
P32	+3V3_HVCCIO	2−3 (Default)	Connects to On-Board +3V3_HVCCIO
		1−2	External Power Supply Connection
P33	FRAME_SYNC	1−2 (Default)	Demo 2× Access to SYNC Signal
		Open	Demo 2× No Access to SYNC Signal
P43	SP1_SDO/SDI	1−2 (Default)	Beagle SPI Access to Demo 2× & Sensor
		Open	Beagle SPI No Access to Demo 2× & Sensor
P44	SP1_SCLK/CS_N	1−2 (Default)	Beagle SPI Access to Demo 2× & Sensor
		Open	Beagle SPI No Access to Demo 2× & Sensor
P45	SPI_EN	Open (Default)	Data or GND; AP0101 in FLASH/HOST Mode
		1−2	High Z; AP0101 in Auto-Config Mode

Table 1. JUMPERS AND HEADERS (continued)

Jumper/Header No.	Jumper/Header Name	Pins	Description
P47, P48, P59	EEPROM ADDR	P47 1−2, P48 Open, P59 Open (Default)	EEPROM Address Set to 0xAA (Default)
		P47 1−2, P48 1−2, P59 Open	EEPROM Address Set to 0xA2
		P47 Open, P48 1−2, P59 Open	EEPROM Address Set to 0xA6
		P47 Open, P48 Open, P59 Open	EEPROM Address Set to 0xAE
P50	SEN_SDATA	2−3 (Default)	AP0101 Serial Control
		1−2	Demo 2× Serial Control
P51	SEN_RST_OUT	1−2 (Default)	AP0101 Reset
		2−3	Demo 2× Reset
P52	BEAGLE_SCL	1−2 (Default)	Demo 2× Accessed
		2−3	Sensor Accessed
P53	BEAGLE_SDA	1−2 (Default)	Demo 2× Accessed
		2−3	Sensor Accessed
P54	FRAME_SYNC_BAR	2	External Input Signal to FRAME_SYNC
		1	GND
SW7	RESET	N/A	When Pushed, 240 ms Reset Signal will be Sent to AP0101

Interfacing to ON Semiconductor Demo 2× Baseboard

The ON Semiconductor 2× baseboard has a similar 26-pin connector and 13-pin connector which mate with J5 and J6 of the headboard. The four mounting holes secure the baseboard and the headboard with spacers and screws.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales