

# AR0331 Evaluation Board User's Manual

## EVBUM2828/D

### Evaluation Board Overview

The evaluation boards are designed to demonstrate the features of onsemi's image sensors products. This headboard is intended to plug directly into the Demo 2X 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 2X Controlled MClk
- Two Wire Serial Interface
  - ◆ Selectable Base Address
- Parallel Interface
- HiSPi (High Speed Serial Pixel) Interface
- ROHS Compliant

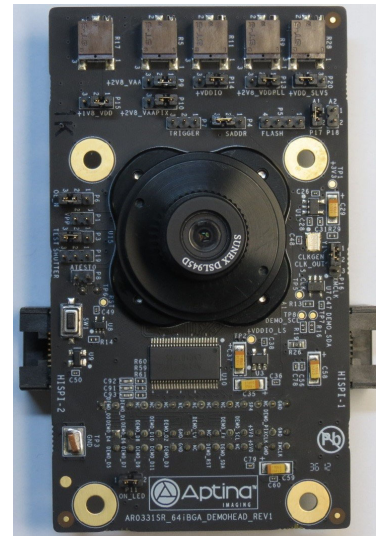


Figure 1. AR0331 Evaluation Board

### Block Diagram

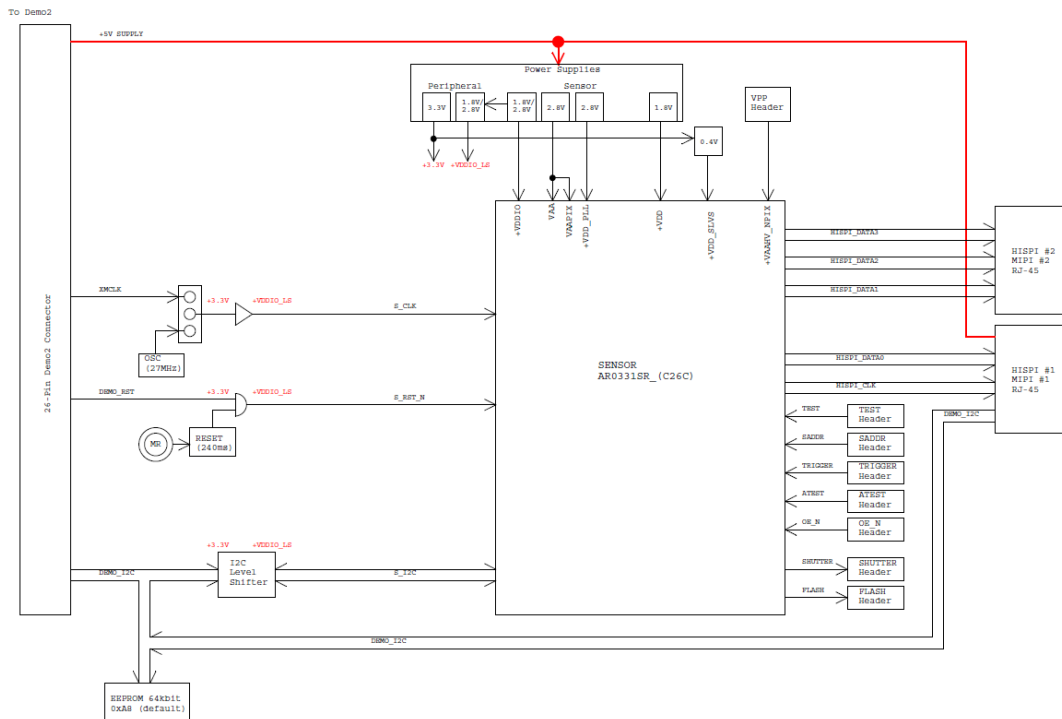


Figure 2. Block Diagram of AR0331SRSC00XUEAH-GEVB

# EVBUM2828/D

Top View

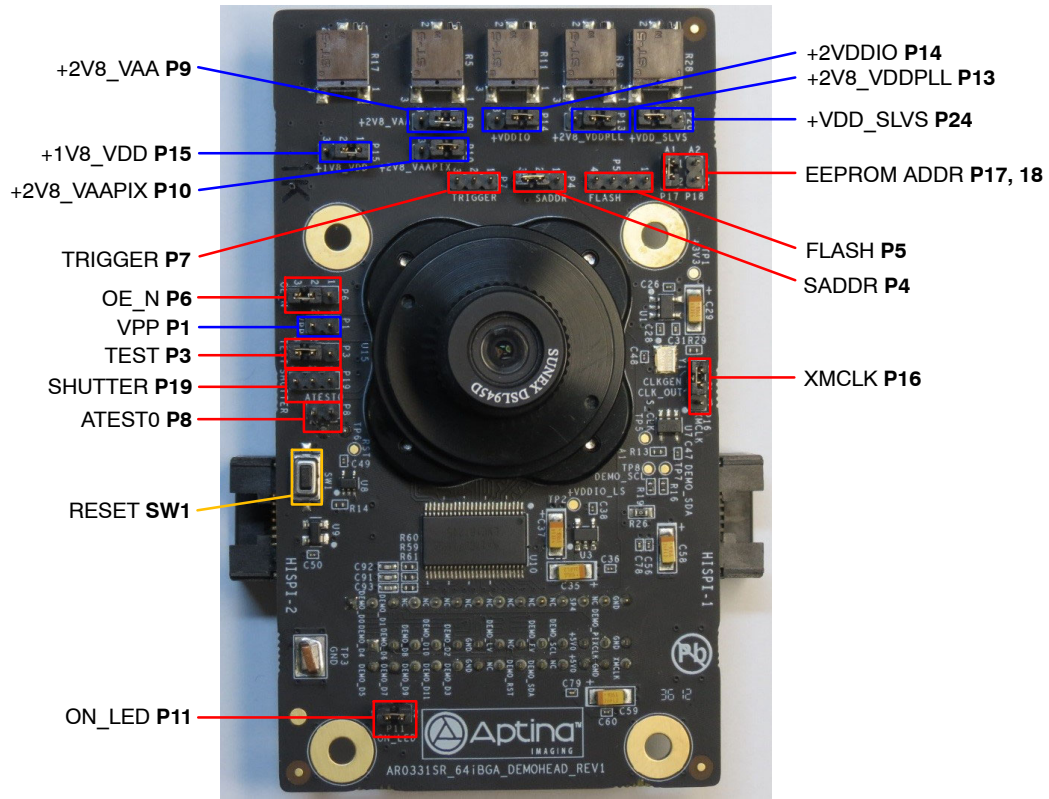


Figure 3. Top View of the Evaluation Board – Default Jumpers

Bottom View

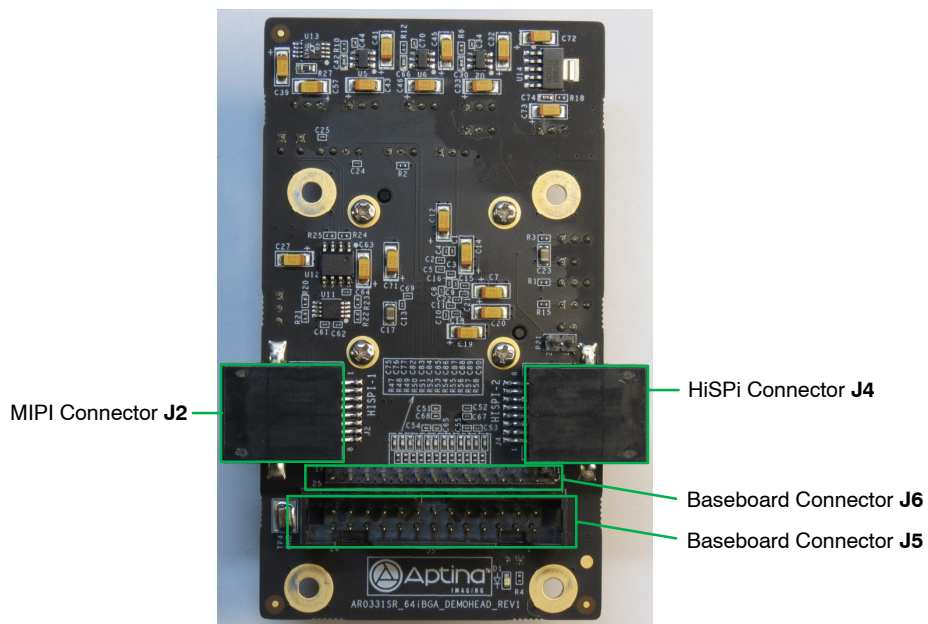
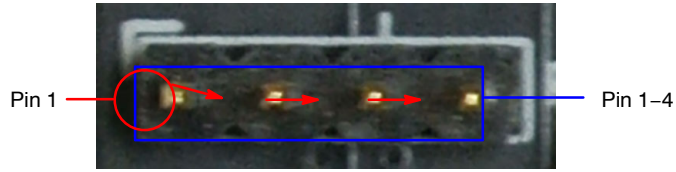


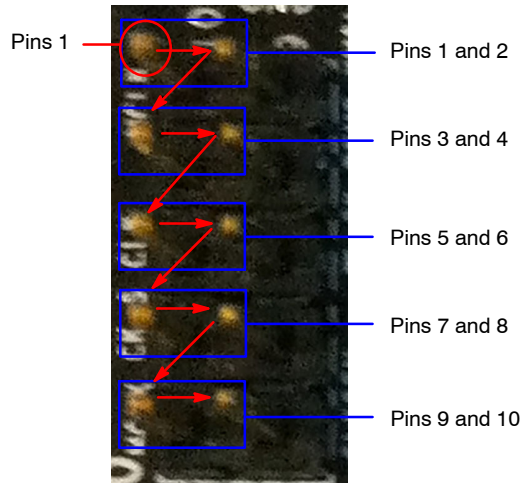
Figure 4. Bottom View of the Evaluation Board – Connector

*Jumper Pin Locations*

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 Location 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 Assignment 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 Position*

**Table 1. JUMPERS AND HEADERS**

Jumper/Header No.	Jumper/Header Name	Pins	Description
P1	VPP	Open	OTPM programming voltage not supplied
P3	TEST	2-3 (Default)	Normal Mode
		1-2	Test Mode
P4	SADDR	2-3 (Default)	I <sup>2</sup> C Address set to 0 × 20
		1-2	I <sup>2</sup> C Address set to 0 × 30
P5	FLASH	1	+5V0
		2	GND
		3	FLASH
		4	+3V3
P6	OE_N	2-3 (Default)	Parallel Output Enabled
		Open	Parallel Output Disabled; HiSPi Output Enabled
P7	TRIG	1	Demo 2X Snapshot Trigger
		2	External Snapshot Trigger
P8	ATEST0	2	Test Pin
P9	+2V8_VAA	1-2 (Default)	Connects to on-board +2V8_VAA power supply
		2-3	External power supply connection
P10	+2V8_VAAPIX	1-2 (Default)	Connects to on-board +2V8_VAAPIX power supply
		2-3	External power supply connection
P11	ON_LED	1-2 (Default)	Connects to on-board LED to indicate “power on”
P13	+2V8_VDDPLL	1-2 (Default)	Connects to on-board +2V8_VDDPLL power supply
		2-3	External power supply connection
P14	+VDDIO	1-2 (Default)	Connects to on-board +VDDIO power supply
		2-3	External power supply connection
P15	+1V8_VDD	1-2 (Default)	Connects to on-board +1V8_VDD power supply
		2-3	External power supply connection
P16	S_CLK	1-2 (Default)	On-board oscillator
		2-3	Demo 2X Clock
P17, P18	EEPROM Addr. Sel	A2 Open & A1 Closed (Default)	EEPROM Address set to 0 × A8
		A2 Open & A1 Open	EEPROM Address set to 0 × AC
		A2 Closed & A1 Open	EEPROM Address set to 0 × A4
		A2 CLosed & A1 Closed	EEPROM Address set to 0 × A0
P19	SHUTTER	2	Snapshot shutter
P20	+VDD_SLVS	1-2 (Default)	Connects to on-board +VDD_SLVS power supply
		2-3	External power supply connection
SW1	RESET	N/A	When pushed, 240 ms reset signal will be sent to AR0331AT

**Interfacing to onsemi Demo 2X Baseboard**

The onsemi Demo 2X 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.

*Shorted Jumpers for Power Measurement*

Different supplies to the evaluation board are provided by trace shorted jumper, for any voltage and power measurements. To conduct current for current measurement on a given power rail, cut the trace between the two pins of their respective JP, and insert an ammeter prior to powering up the system. The figure below shows where the trace to cut is located.

**Table 2. SHORTED JUMPERS FOR POWER MEASUREMENT**

Jumper	Voltage (V)
P8 (+2V8_VAA)	2.8
P10 (+2V8_VAAPIX)	2.8
P13 (+2V8_VDDPLL)	2.8
P14 (+VDDIO)	2.8
P15 (+1V8_VDD)	1.8
P20 (+VDD_SLVS)	0.4



**Figure 7. Top and Bottom View of Shorted Jumper;  
The Bottom View Shows the Trace Location to Cut for Current Measurement**

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