AR0135 iBGA63

AR0135 iBGA63 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 Demo3 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 Demo3 Controlled MCLK
- Two-wire Serial Interface
  - Selectable Base Address
- Parallel Interface
- ROHS Compliant

Figure 1. AR0135AT Evaluation Board

Block Diagram

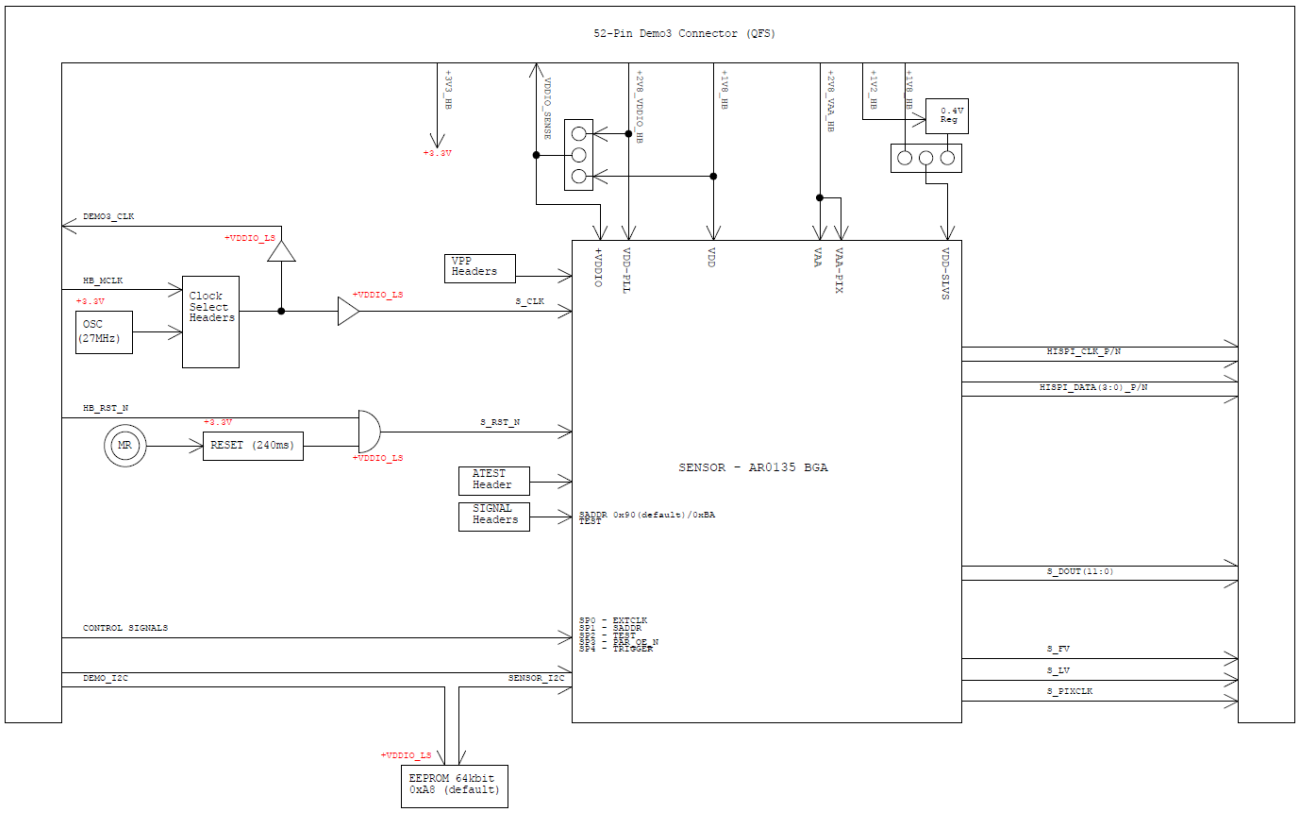

Figure 2. Block Diagram of AR0135

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Top View

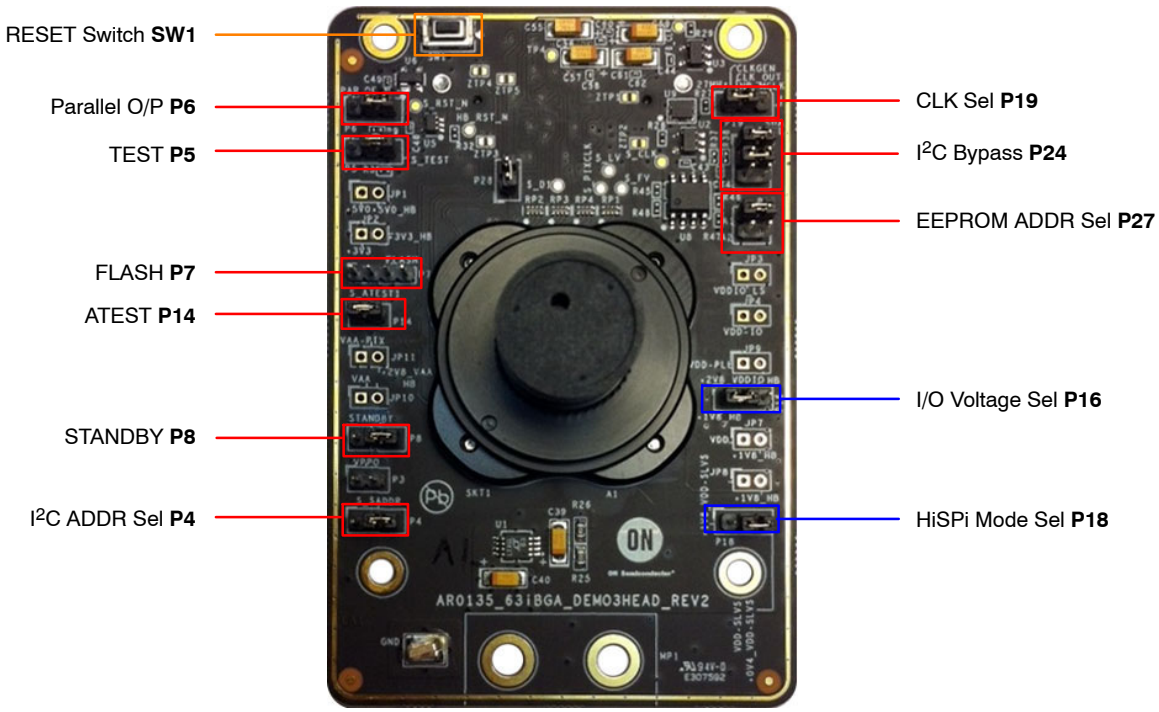

Figure 3. Top View of the Evaluation Board – Default Jumpers

Bottom View

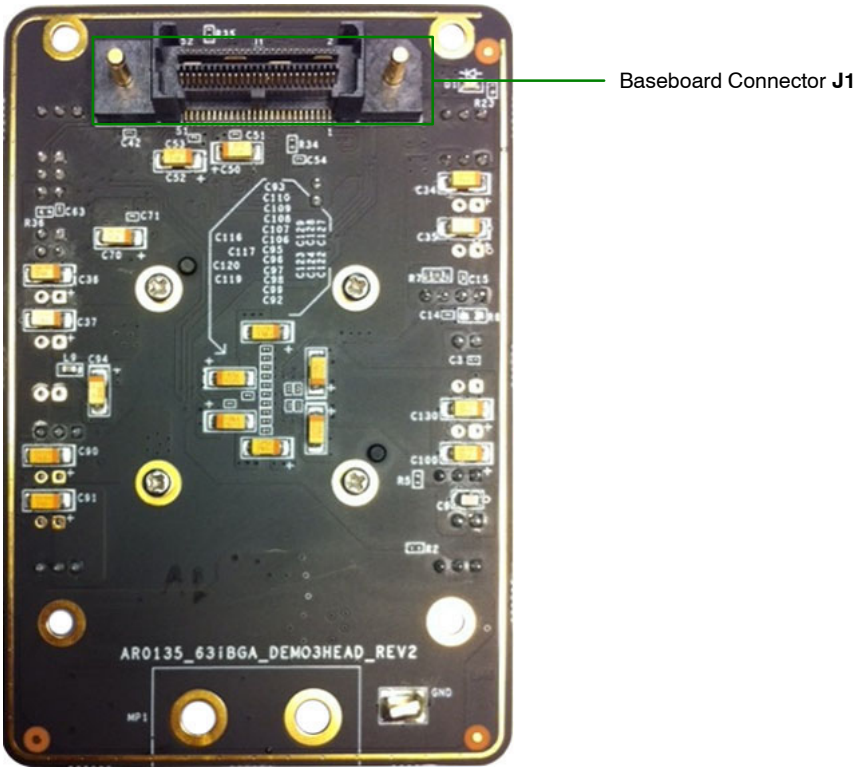

Figure 4. Bottom View of the Evaluation Board – Connector

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.

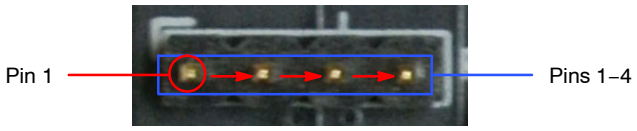

Figure 5. Pin Locations for a Single Jumper.
Pin 1 is Located at the Leftmost Side and Increases as it Moves to the Right

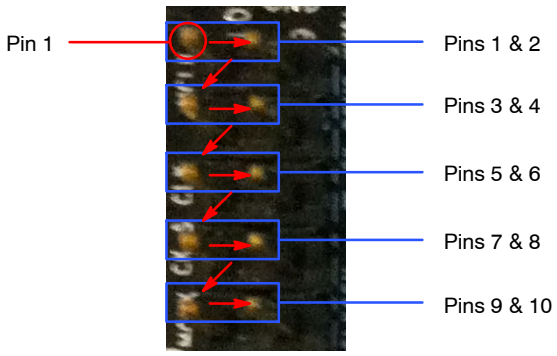

Figure 6. Pin Locations and Assignments of Grouped Jumpers.
Pin 1 is Located at the Top-Left Corner and Increases in a Zigzag Fashion Shown in the Picture

Jumper/Header Functions & Default Positions

Table 1. JUMPERS AND HEADERS

Jumper/Header No.	Jumper/Header Name	Pins	Description
P3	VPP	Open	OTPM programming voltage not supplied
P4	SADDR	2−3 (Default)	I^2C Address set to 0x20
		1−2	I^2C Address set to 0x30
P5	Mode	2−3 (Default)	Set to Normal Mode
		Open	Set to Test Mode
P6	OE_N	2−3 (Default)	Parallel Output Enabled
		Open	Parallel Output Disabled; HiSPi Output Enabled
P7	FLASH	1	+5V0
		2	GND
		3	FLASH
		4	+3V3
P8	STANBY	2−3 (Default)	Normal Mode
		1−2	Standby Mode
P14	Analog Test	1−2 (Default)	ATEST −> GND
P16	VDD_IO	1−2 (Default)	1.8 V Operation of Sensor
		2−3	2.8 V Operation of Sensor
P18	HiSPi Mode	1−2 (Default)	SLVS Mode
		2−3	Hi−VCM Mode

Table 1. JUMPERS AND HEADERS (continued)

Jumper/Header No.	Jumper/Header Name	Pins	Description
P19	Master Clock	1–2 (Default)	On–Board Oscillator (27 MHz)
		2–3	AR0140AT Evaluation Board MCLK
P24	I^2C	1–2 & 3–4 (Default)	Demo 3 SCL & SDA connected to sensor SCL & SDA respectively
P27	EEPROM Address Sel.	3–4 Open & 1–2 Closed (Default)	EEPROM Address set to 0xA8
		3–4 Open & 1–2 Closed	EEPROM Address set to 0xAC
		3–4 Open & 1–2 Closed	EEPROM Address set to 0xA4
		3–4 Open & 1–2 Closed	EEPROM Address set to 0xA0
P28	TRIGGER	1–2	Trigger Input Enabled
		Open (Default)	Connect Generator Between Pin 1 and GND
SW1	RESET	N/A	When pushed, 240 ms reset signal will be sent to AR0135AT

Interfacing to ON Semiconductor Demo3 Baseboard

The ON Semiconductor Demo 3 baseboard has a similar 52-pin connector which mates with J1 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. SHORTENED JUMPERS FOR POWER MEASUREMENT

Jumper	Voltage
JP1 (From Demo3)	5.0 V
JP2 (Peripheral 3.3 V)	3.3 V
JP3 (VDDIO_LS)	1.8 V
JP4 (VDDIO)	1.8 V
JP7 (VDD)	1.8 V
JP8 (VDD–SLVS)	1.8 V
JP9 (VDD–PLL)	2.8 V
JP10 (VAA)	2.8 V
JP11 (VAA–PIX)	2.8 V
JP18 (VDD–SLVS)	0.4 V

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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