# MT9M021IA3XTMH-GEVB

# MT9M021 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 2X system. Test points and jumpers on the board provide access to 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
- ROHS Compliant

**Figure 1. MT9M021 Evaluation Board**

### Block Diagram

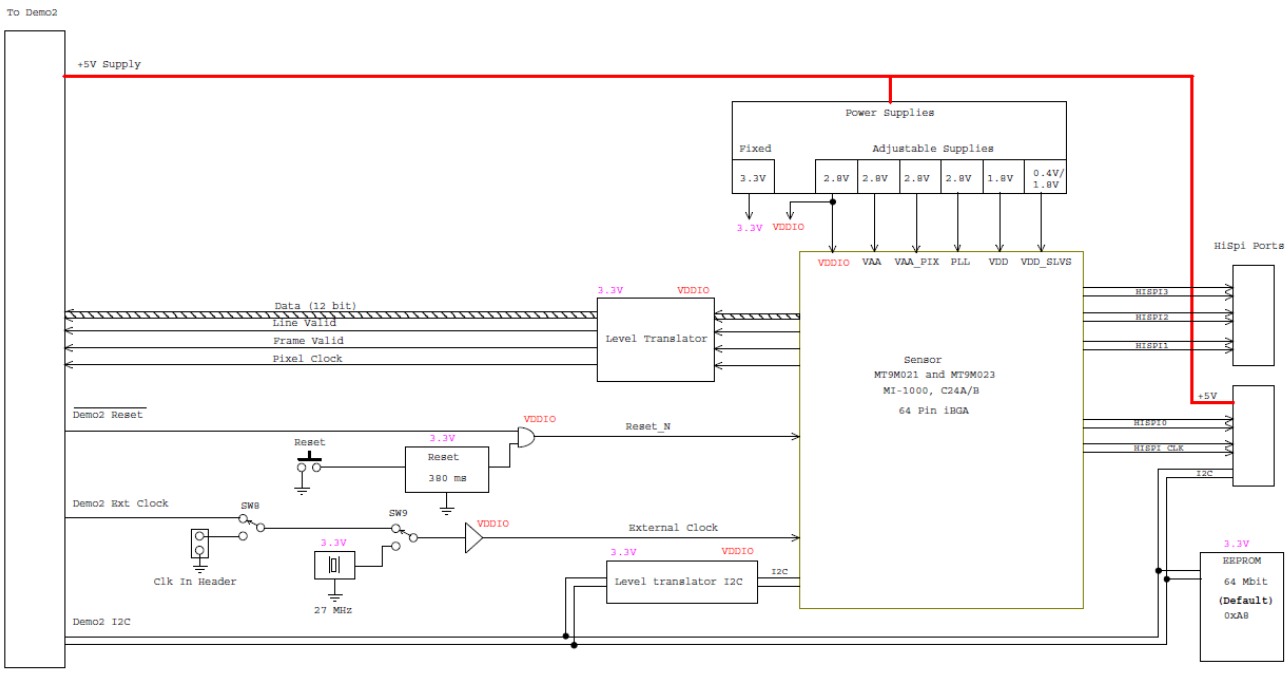


**Figure 2. Block Diagram of MT9M021IA3XTMH−GEVB**

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**Top View**

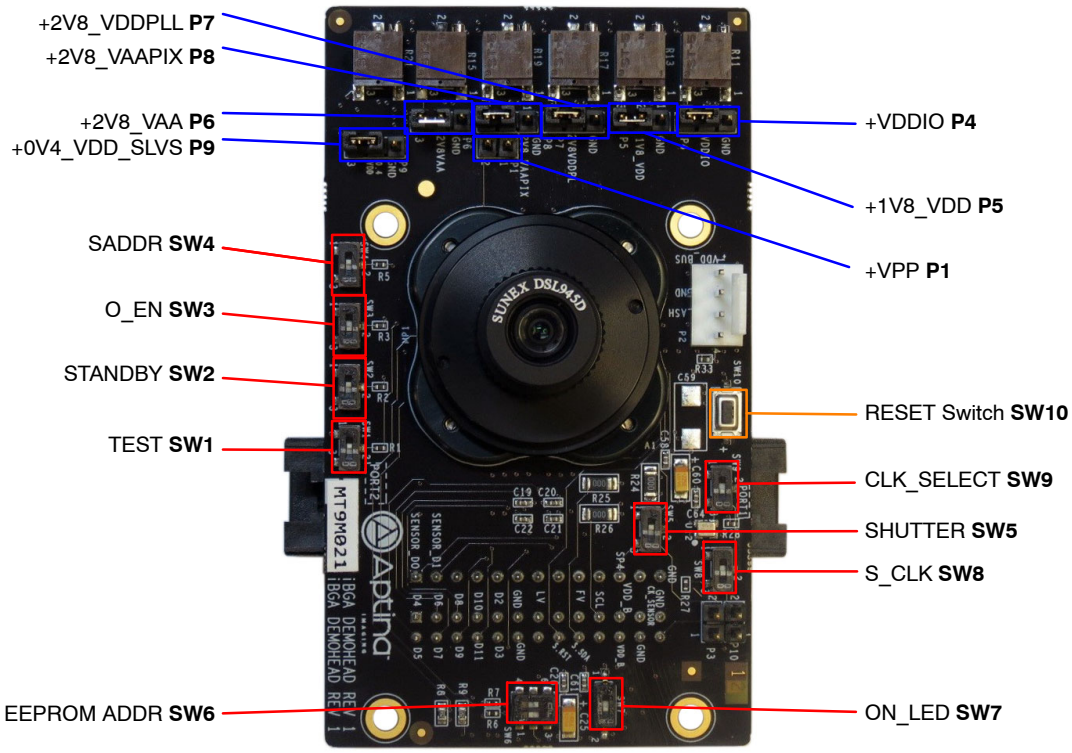


**Figure 3. Top View of Evaluation Board − Default Jumpers**

**Bottom View**

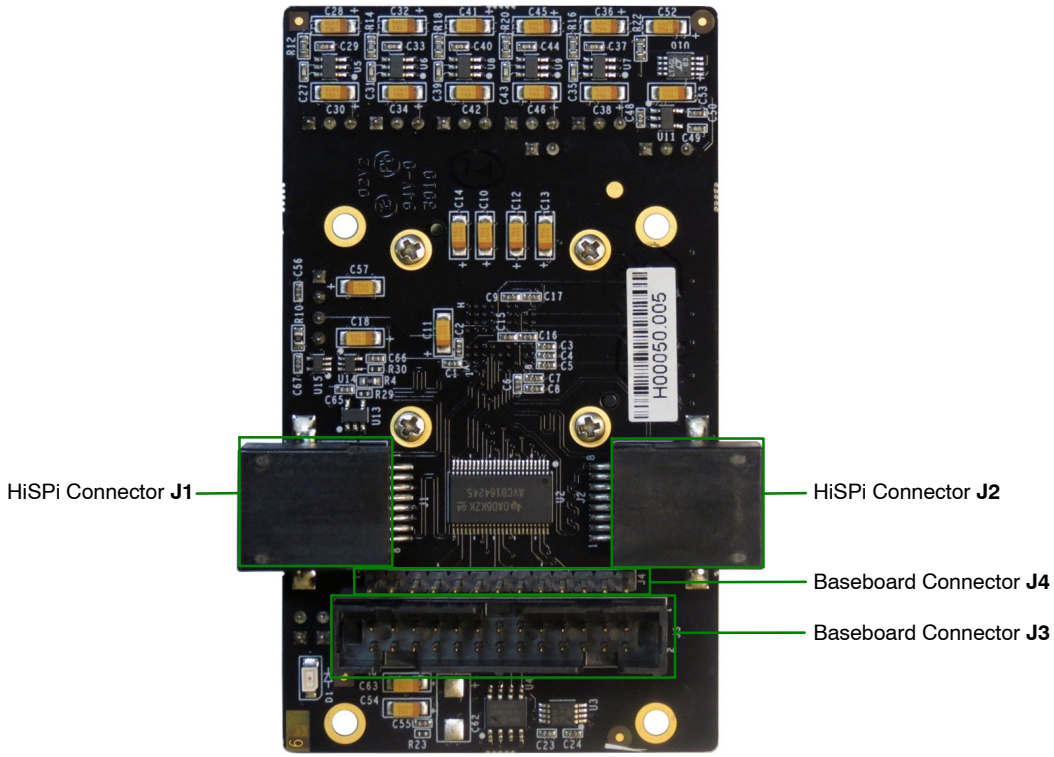


**Figure 4. Bottom View of the Evaluation Board − Connector**

### 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**

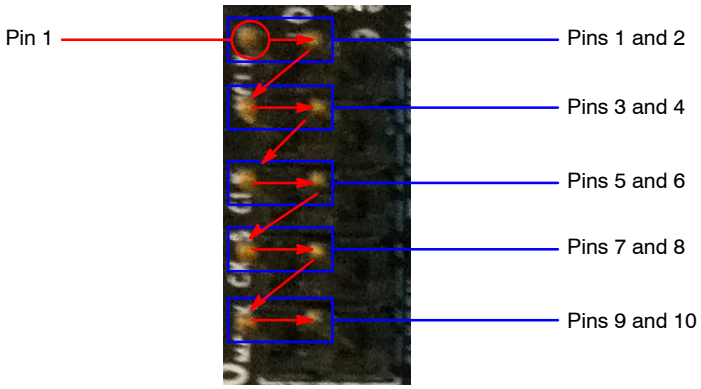


**Figure 6. Pin Locations and Assignments of Grouped Jumpers.**
**Pin 1 is Located at the Top-Left Corner and Increases in a Zigzag Fashion Shown in the Picture**

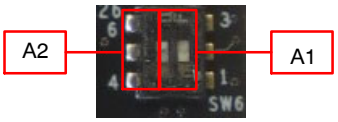


**Figure 7. EEPROM Switch Locations in their Default Positions. The First Switch (A2) is Set to ON, while the Second Switch (A1) of SW6 is Set to OFF.**

### Jumper/Header Functions & Default Positions

**Table 1. JUMPERS AND HEADERS**

| Jumper/Header No. | Jumper/Header Name | Pins | Description |
|---|---|---|---|
| P1 | +VPP | Open (Default) | For connection to external +VPP power supply for OTPM |
| P4 | +VDDIO | 2−3 (Default) | Connects to on-board +VDDIO power supply |
| | | 1−2 | External power supply connection |
| P5 | +1V8_VDD | 2−3 (Default) | Connects to on-board +1V8_VDD power supply |
| | | 1−2 | External power supply connection |
| P6 | +2V8_VAA | 1−2 (Default) | Connection to on-board +2V8_VAA power supply |
| | | 2−3 | External power supply connection |
| P7 | +2V8_VDDPLL | 2−3 (Default) | Connects to on-board +2V8_VDDPLL power supply |
| | | 1−2 | External power supply connection |
| P9 | +0V4_VDD_SLVS | 2−3 (Default) | Connects to on-board +0V4_VDD_SLVS power supply |
| | | 1−2 | External power supply connection |

**Table 1. JUMPERS AND HEADERS (continued)**

| Jumper/Header No. | Jumper/Header Name | Pins | Description |
|---|---|---|---|
| SW1 | TEST | On (Default) | Test Mode |
| | | Off | Normal Operation |
| SW2 | STANDBY | On (Default) | Standby mode enabled |
| | | Off | Normal operation |
| SW3 | O_EN | On (Default) | Output disabled |
| | | Off | Output enabled |
| SW4 | STANDBY | On (Default) | Standby mode enabled |
| | | Off | Normal operation |
| SW5 | SHUTTER | On (Default) | Connects to on-board signal from Demo 2X Board |
| | | Off | Connects to external shutter from P3 |
| SW6 | EEPROM ADDR | A2 On, A1 Off (Default) | EEPROM Address set to 0xA8 |
| | | A2 On, A1 On | EEPROM Address set to 0xAC |
| | | A2 Off, A1 On | EEPROM Address set to 0xA4 |
| | | A2 Off, A1 Off | EEPROM Address set to 0xA0 |
| SW7 | ON_LED | On (Default) | Connects LED indicator to +VDD_BUS |
| | | Off | Turn off LED indicator |
| SW8 | MCLK | On (Default) | Connects to CK_DEMO 2 from Demo 2X board |
| | | Off | Connects to external signal on Pin 2 from P10 header |
| SW9 | CLK_SELECT | On (Default) | Connects to on-board oscillator |
| | | Off | Connects to output from SW8 |
| SW10 | RESET | N/A | When pushed, 380 ms reset signal will be sent to MT9M021 |

### Interfacing to ON Semiconductor Demo 2X Baseboard

The ON Semiconductor Demo 2X baseboard has a similar 26-pin connector and 13-pin connector which mate with J3 and J4 of the headboard. The four mounting holes secure the baseboard and the headboard with spacers and screws.

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