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MT9F002I12-N4001H-GEVB

MT9F002I12-N4001H Evaluation Board User's Manual

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EVAL BOARD USER'S MANUAL

Evaluation Board Overview

The evaluation boards are designed to demonstrate the features of image sensors products from ON Semiconductor. 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.



Figure 1. MT9F002I12 Evaluation Board

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

Block Diagram

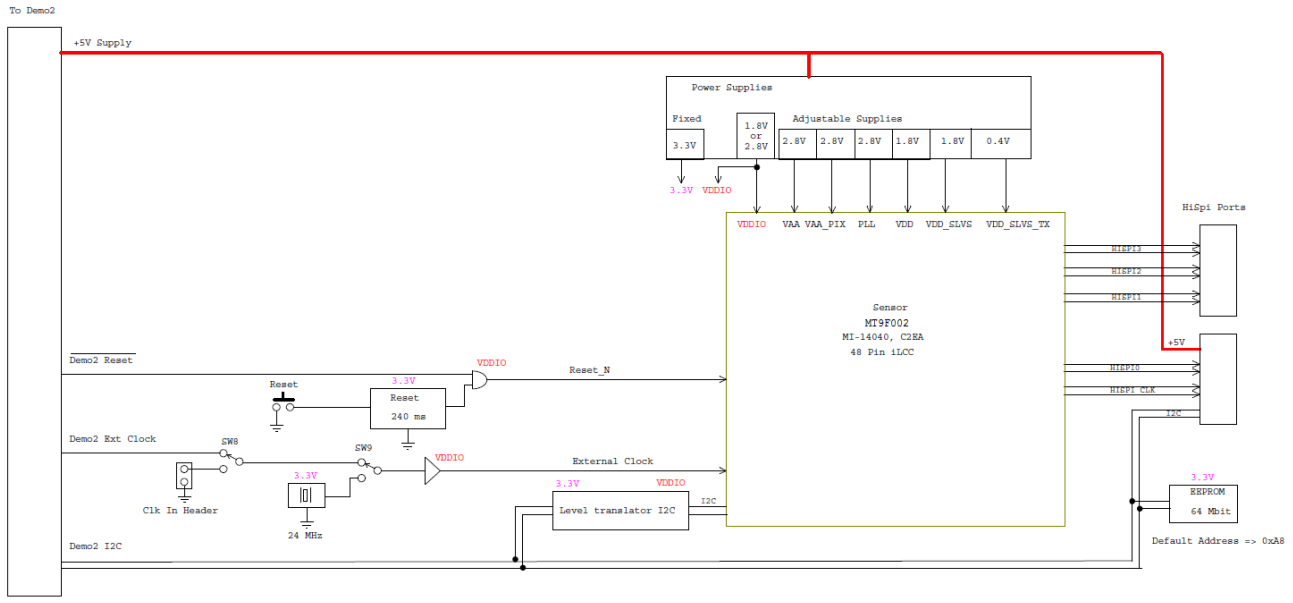


Figure 2. Block Diagram of MT9F002I12−N4001H−GEVB

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Top View

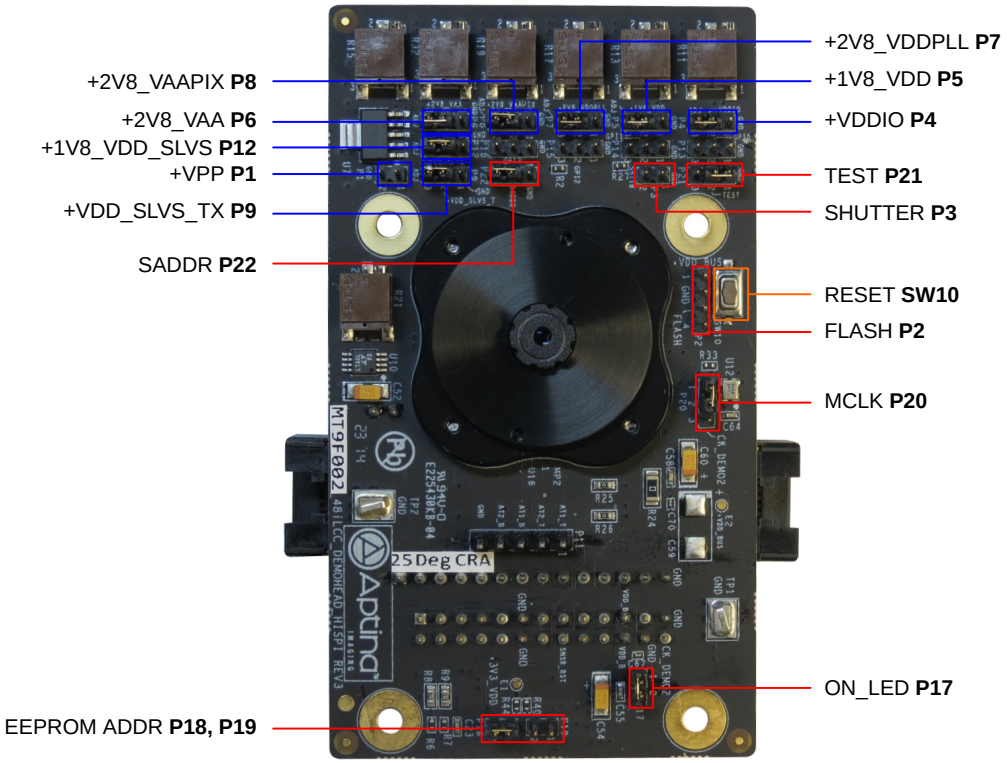


Figure 3. Top View of the Board − Default Jumpers

Bottom View

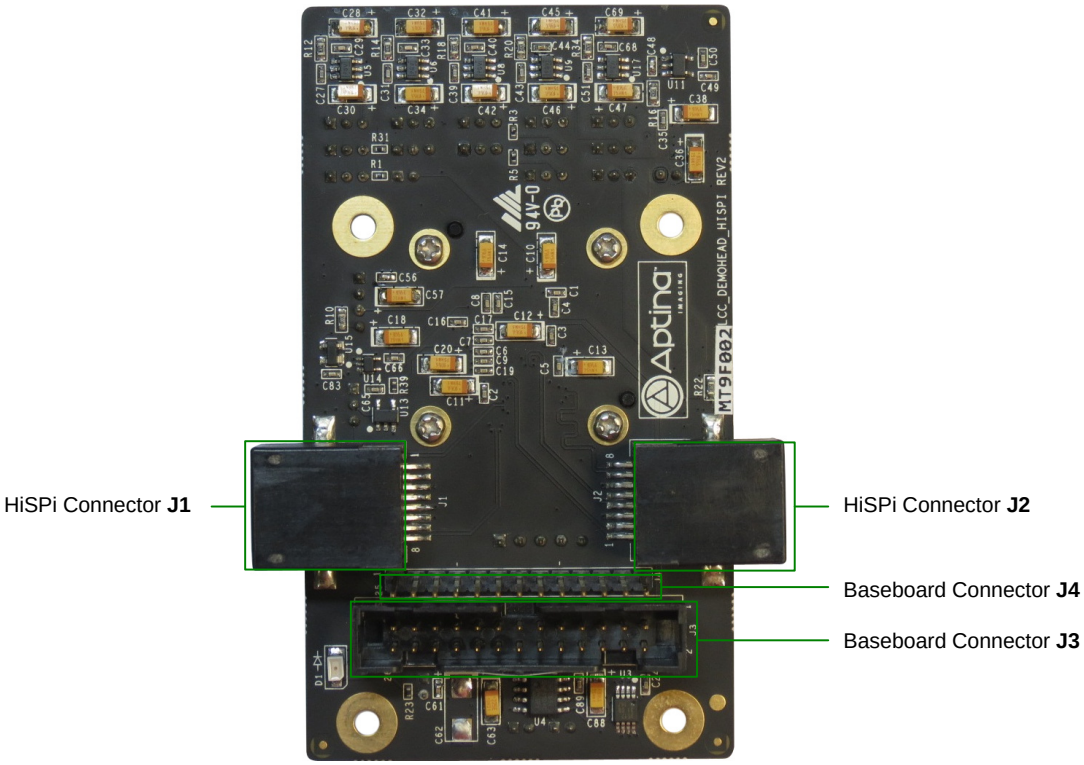


Figure 4. Bottom View of the Board − Connectors

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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.

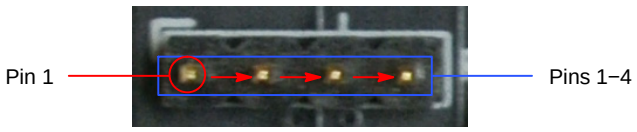


Figure 5. Pin Locations for a Single Jumper. Pin 1 is Located at the Leftmost Side and Increases as it Moves to the Right

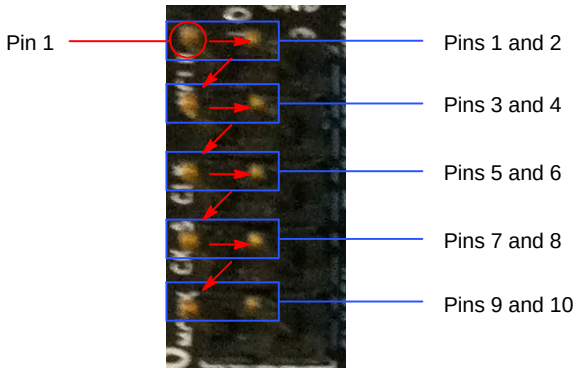


Figure 6. Pin Locations and Assignments of Grouped Jumpers. Pin 1 is Located at the Top-Left Corner and Increases in a Zigzag Fashion Shown in the Picture

Jumper/Header Functions & Default Positions

Table 1. JUMPERS AND HEADERS

Jumper/Header No.	Jumper/Header Name	Pins	Description
P1	+VPP	Open	OTPM Programming Voltage Not Supplied
P2	FLASH	3	Monitor Flash Signal
P3	SHUTTER	2	Control for External Mechanical Shutter
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	2−3 (Default)	Connects to On-board +2V8_VAA Power Supply
		1−2	External Power Supply Connection
P7	+2V8_VDDPLL	2−3 (Default)	Connects to On-board +2V8_VDDPLL Power Supply
		1−2	External Power Supply Connection
P8	+2V8_VAAPIX	2−3 (Default)	Connects to On-board +2V8_VAAPIX Power Supply
		1−2	External Power Supply Connection
P9	+VDD_SLVS_TX	2−3 (Default)	Connects to On-board +VDD_SLVS_TX Power Supply
		1−2	External Power Supply Connection
P12	+1V8VDD_SLVS	2−3 (Default)	Connects to On-board +1V8VDD_SLVS Power Supply
		1−2	External Power Supply Connection

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Table 1. JUMPERS AND HEADERS (continued)

Jumper/Header No.	Jumper/Header Name	Pins	Description
P13	GPI0	1	GND
		2	GPI0 PIN OUT
		3	+VDDIO_LS
P14	GPI1	1	GND
		2	GPI1 PIN OUT
		3	+VDDIO_LS
P15	GPI2	1	GND
		2	GPI2 PIN OUT
		3	+VDDIO_LS
P16	GPI3	1	GND
		2	GPI3 PIN OUT
		3	+VDDIO_LS
P18, P19	EEPROM ADDR	A1 Closed & A2 Open	EEPROM Address Set to 0xA8 (Default)
		A1 Open & A2 Open	EEPROM Address Set to 0xAC
		A1 Open & A2 Closed	EEPROM Address Set to 0xA4
		A1 Closed & A2 Closed	EEPROM Address Set to 0xA0
P20	MCLK	1−2 (Default)	Master Mode On Board Oscillator
		Open	Master Mode Demo 2X Clock
		1−2 (Default)	Set to Normal Mode
P21	TEST	2−3	Set to Test Mode
P22	SADDR	1−2 (Default)	I^2C Address: 0x20
		2−3	I^2C Address: 0x30
SW10	RESET	N/A	When Pushed, 240 ms Reset Signal will be Sent to MT9F002

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.

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)
P4 (+VDDIO)	1.8
P5 (+1V8_VDD)	1.8
P6 (+2V8_VAA)	2.8
P7 (+2V8_VDDPLL)	2.8
P8 (+2V8_VAAPIX)	2.8
P9 (+VDD_SLVS_TX)	0.4
P12 (+1V8_VDD_SLVS)	1.8



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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