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AGB2N0CS-GEVK

AGB2N0CS-GEVK Evaluation Board User's Manual



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EVAL BOARD USER'S MANUAL

Adapter Board Overview

The AGB2N0CS Adapter Board helps connect Demo 2× headboards to the Demo 3 Baseboard, the AGB1N0CS-GEVK. The Demo 3 uses a high-bandwidth USB 3.0 interface and HDMI® connector to send sensor image data to the host computer. It supports single/double/quad MIPI interface, dual/quad lanes of HiSPi interface, CCP, and parallel interface. Since the Demo 2× Headboards do not use the same connector as the Demo 3, the AGB2N0CS provides communication between the headboard parallel and serial connectors to communicate with the Demo 3 Baseboard interface connection.

Features

- Demo 2× Headboard Connectors
- Parallel Data Buffer Option
- MIPI/HiSPi Connectors
- Demo 3 Baseboard Connector

Block Diagram

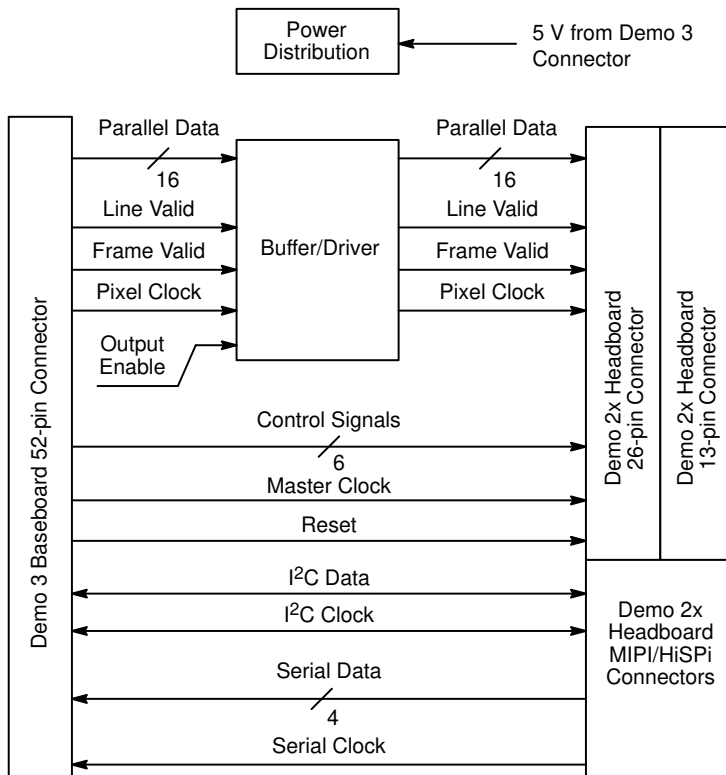


Figure 2. Block Diagram of AGB2N0CS-GEVK



Top View



Bottom View

Figure 1. AGB2N0CS Evaluation Board

AGB2N0CS-GEVK

Top View

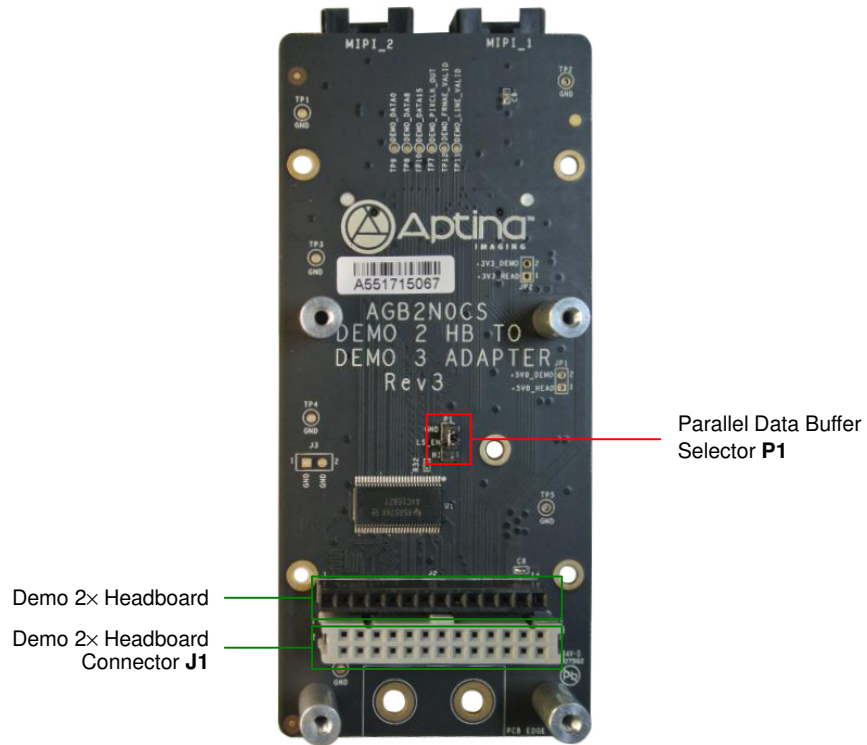


Figure 3. Top View of Adapter Board with Default Jumpers, Test Pins and Connectors

Bottom View

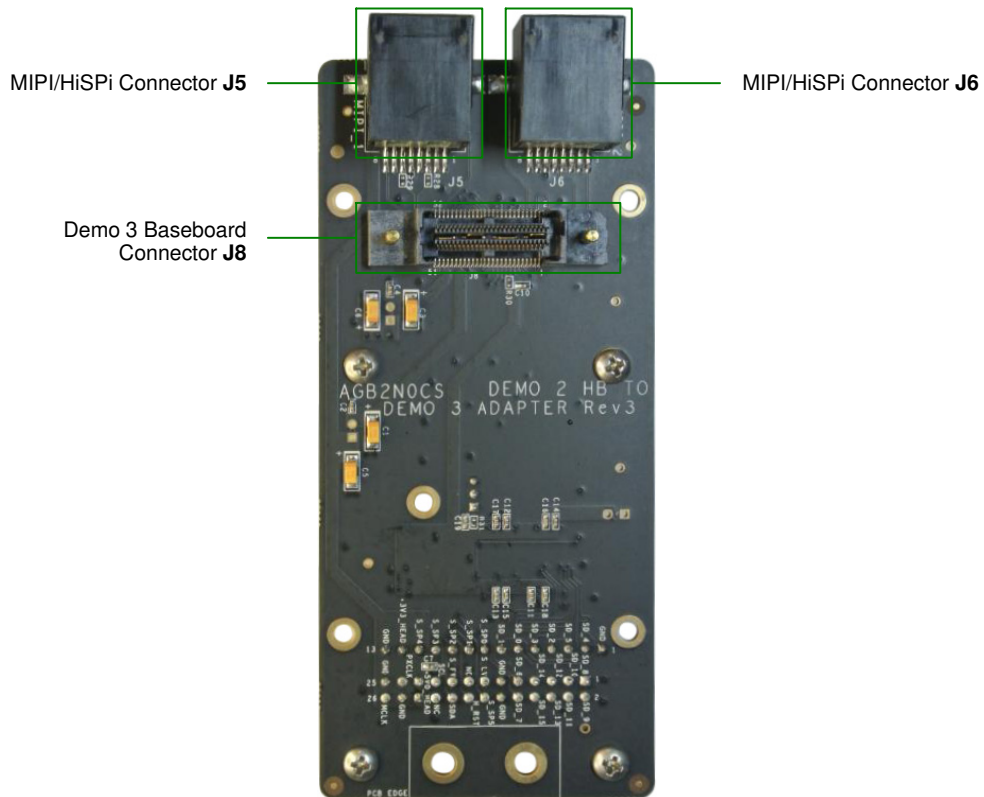


Figure 4. Bottom View of Adapter Board with Connectors

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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.

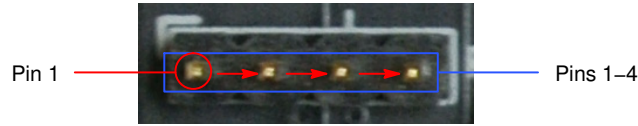


Figure 5. Pin Locations for a Single Jumper. Pin 1 is Located at the Leftmost Side

Jumper/Header Functions & Default Positions

The P1 jumper/header configuration allows configuration of parallel data. Its default position shorts pins 2–3, which enables the parallel data buffer to pass parallel data signals. When pins 1–2 are shorted, the parallel data buffer is disabled.

AGB2N0CS–GEVK Connectors

The evaluation board supports has various different connectors on-board, including a Demo 3 connector, two MIPI/HiSPi connectors for the Demo 2× headboard, the 14-pin Demo 2× headboard connector, and 26-pin Demo 2× headboard connector.

Headboard Connectors

The Demo 2× headboard connectors are described in the pinouts in Tables 1 and 2. The headboard connector has a 14-pin and 26-pin connector, as well as two MIPI/HiSPi connectors.

Baseboard Connector

The Demo 3 Baseboard connector is shown in the pinout in Table 3. The Demo 3 connector has a serial sensor data input, I²C control interface, headboard power, and parallel image data interface.

Table 1. 26-PIN DEMO 2X HEADBOARD CONNECTOR FUNCTION DESCRIPTION (J1)

Pin	Name	Description	DIR	Comment
1	S_DATA8	Parallel Data8	I/O	Parallel Data Bit
2	S_DATA9	Parallel Data9	I/O	Parallel Data Bit
3	S_DATA10	Parallel Data10	I/O	Parallel Data Bit
4	S_DATA11	Parallel Data11	I/O	Parallel Data Bit
5	S_DATA12	Parallel Data12	I/O	Parallel Data Bit
6	S_DATA13	Parallel Data13	I/O	Parallel Data Bit
7	S_DATA14	Parallel Data14	I/O	Parallel Data Bit
8	S_DATA15	Parallel Data15	I/O	Parallel Data Bit
9	S_DATA6	Parallel Data6	I/O	Parallel Data Bit
10	S_DATA7	Parallel Data7	I/O	Parallel Data Bit
11	GND	Ground	PWR	
12	GND	Ground	PWR	
13	S_LINE_VALID	Parallel Line Valid	Out	Check Line Valid Signal
14	S_SP5	General Control Signal 5	Out	Signal @ +3.3 V Level
15	NOT USED	Not Used	NA	
16	HEAD_RESET_L	Reset Signal to Sensor	In	Reset to Headboard Sensor
17	S_FRAME_VALID	Parallel Frame Valid	Out	Check Frame Valid Signal
18	HEAD_SDA	I ² C Data to Sensor	I/O	Signal @ +3.3 V Level
19	HEAD_SCL	I ² C Clock to Sensor	I/O	Signal @ +3.3 V Level
20	NOT USED	Not Used	NA	
21	+5V0_HEAD	+5V0 Power Input	PWR	For Powering Up the Headboard
22	+5V0_HEAD	+5V0 Power Input	PWR	For Powering Up the Headboard
23	S_PIXCLK	Parallel Pixel Clock	In	Parallel Data Pixel Clock
24	GND	Ground	PWR	

AGB2N0CS-GEVK

Table 1. 26-PIN DEMO 2X HEADBOARD CONNECTOR FUNCTION DESCRIPTION (J1) (continued)

Pin	Name	Description	DIR	Comment
25	GND	Ground	PWR	
26	MCLK	Master Clock	In	Master Clock from Demo 3 Board

Table 2. 14-PIN DEMO 2X HEADBOARD CONNECTOR FUNCTION DESCRIPTION (J2)

Pin	Name	Description	DIR	Comment
1	GND	Ground	PWR	
2	S_DATA4	Parallel Data4	I/O	Parallel Data Bit
3	S_DATA5	Parallel Data5	I/O	Parallel Data Bit
4	S_DATA2	Parallel Data2	I/O	Parallel Data Bit
5	S_DATA3	Parallel Data3	I/O	Parallel Data Bit
6	S_DATA0	Parallel Data0	I/O	Parallel Data Bit
7	S_DATA1	Parallel Data1	I/O	Parallel Data Bit
8	S_SP0	General Control Signal 0	Out	Signal @ +3.3 V Level
9	S_SP1	General Control Signal 1	Out	Signal @ +3.3 V Level
10	S_SP2	General Control Signal 2	Out	Signal @ +3.3 V Level
11	S_SP3	General Control Signal 3	Out	Signal @ +3.3 V Level
12	S_SP4	General Control Signal 4	Out	Signal @ +3.3 V Level
13	+3V3_HEAD	+3.3 V to Headboard	PWR	For Powering Up the Headboard
14	GND	Ground	PWR	

Shorted Jumper for Power Measurement

Different supplies to the headboard 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 3. SHORTED JUMPERS FOR POWER MEASUREMENT

Jumper	Voltage (V)
JP1 (+5V0 HEAD)	5.0
JP2 (+3V3 HEAD)	3.3



Figure 6. Top and Bottom View of Shorted Jumper. The Bottom View Shows the Trace Location to Cut for Current Measurement

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