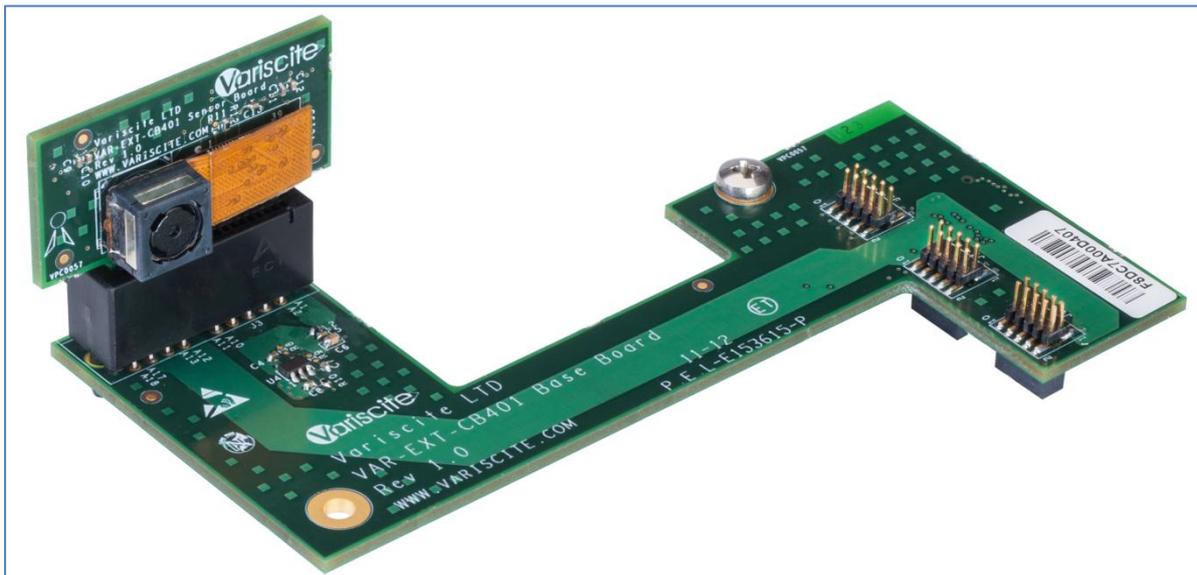




VARISCITE LTD

VAR-EXT-CB401

Image Sensors / Microphones Extension Board for
VAR-OM44CustomBoard / VAR-DVK-OM44
Version 1.0



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Revision History

Revision	Date	Notes
1.0	25/06/2012	Initial release

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1 Overview

1.1 General Information

The VAR-EXT-CB401 extension board is a two part PCB add-on board, plugging into the VAR-OM44CustomBoard extension connectors. The VAR-EXT-CB401 features:

1. 2 x omnivision OV5640 based 5 Mpixel/1080p camera sensors
2. 2 x digital microphones.
3. Pass through connectivity for VAR-OM44CustomBoard connectors.

Supporting products:

- VAR-OM44CustomBoard

Contact support for further information: support@variscite.com

1.2 Related Documents

Document	Location
VAR-SOM-OM44 data sheet	See latest version at http://www.variscite.com/
VAR-OM44CustomBoard data sheet	See latest version at http://www.variscite.com/
OV5640 Sensor	http://www.ovt.com/products/sensor.php?id=93&limit=220

2 Detailed Description

2.1 Base Board

The VAR-EXT-CB401 base board exposes the VAR-OM44Custombaord CSI (Camera Serial Interface), digital microphone interface and a few GPIO signals into a 36-pin connector^(*) used by the VAR-EXT-CB401sensor board. In addition, the VAR-EXT-CB401 base board passes through three of the VAR-OM44Custombaord connectors for further use by any additional required connectivity.

(*) Though the connector is a standard PCIe connector, it is not PCIe pin out compatible, attaching a standard PCIe card may cause permanent damage to the system

2.2 Sensor Board

The Sensor Board, a PCIe form factor module (**not a PCIe standard compatible**), fits into VAR-EXT-CB401 base board and features two Omivision's OV5640 based 5M pixel sensors and two digital microphones enabling stereo recording

3 Connectors Pin out

3.1 Base Board J3/ Sensor Board Edge Connectors

Pin #	VAR-OM44Custom Board Signal	Type	Description
A1	2.8V	POWER	Sourced by VAR-EXT-CB401 on-board LDO
A2	DGND	POWER	
A3	CSI21_DY0	Diff	CSI2 interface 1 clock, negative signal
A4	CSI21_DX0	Diff	CSI2 interface 1 clock, positive signal
A5	DGND	POWER	
A6	CSI21_DY2	Diff	CSI2 interface 1 lane 2, negative signal
A7	CSI21_DX2	Diff	CSI2 interface 1 lane 2, positive signal
A8	DGND	POWER	
A9	CSI22_DX2	Diff	CSI2 interface 2 lane 2, positive signal
A10	CSI22_DY2	Diff	CSI2 interface 2 lane 2, negative signal
A11	DGND	POWER	
A12	DGND	POWER	
A13	CSI22_DX0	Diff	CSI2 interface 2 clock, negative signal
A14	CSI22_DY0	Diff	CSI2 interface 2 clock, positive signal
A15	DGND	POWER	
A16	CSI22_DX1	Diff	CSI2 interface 2 lane1, negative signal
A17	CSI22_DY1	Diff	CSI2 interface 2 lane1, positive signal
A18	DGND	POWER	
B1	DGND	POWER	
B2	CSI21_DY1	Diff	CSI2 interface 1lane1, negative signal
B3	CSI21_DX1	Diff	CSI2 interface 1lane1, positive signal
B4	DGND	POWER	
B5	DGND	POWER	
B6	I2C3_SDA	Digital	I2C 3 data

Pin #	VAR-OM44Custom Board Signal	Type	Description
B7	I2C3_SCL	Digital Out	I2C3 clock
B8	DMIC_DAT	Digital In	Digital microphone data
B9	DMIC_CLK	Digital Out	Digital microphone clock
B10	VCC_3V3	POWER	
B11	DGND	POWER	
B12	I2C4_SCL	Digital Out	I2C3 clock
B13	I2C4_SDA	Digital i/O	I2C 3 data
B14	VIO	POWER	
B15	KPD_ROW2_CAM2_D1 1_GPIO_3	Digital Out	Camera enable
B16	KPD_ROW3_CAM4_D2 _GPIO_175	Digital Out	Camera enable
B17	FREF_CLK1_OUT	Digital Out	Reference clock
B18	DGND	POWER	

3.2 J4 - MISC Connector Pin-out (VAR-OM44CustomBoard J10)

Pin #	VAR-OM44Custom Board Signal	VAR-SOM-OM44 PIN
1	BACKLIGHTEN	158
2	HDQ_GPIO127	82
3	FREF_CLK1_OUT	49
4	DMIC_CLK	186
5	DMIC_DAT	188
6	UART2_TX	69
7	UART2_CTS	65
8	UART2_RTS	67
9	UART2_RX	71

3.3 J5 - McBSPx/SPI1 (VAR-OM44CustomBoard J14)

Pin #	VAR-OM44Custom Board Signal	VAR-SOM-OM44 PIN
1	VCC_3V3	
2	MCBSP1_CLKX	27
3	MCBSP2_CLK	98
4	MCBSP1_DR	176
5	MCBSP2_DR	102
6	MCBSP1_DX	95
7	MCBSP2_DX	104

8	MCBSP1_FSX	93
9	MCBSP2_FSX	106
10	DGND	1

3.4 J6 - SPI1/I2Cx (VAR-OM44CustomBoard J21)

Pin #	VAR-OM44Custom Board Signal	VAR-SOM-OM44 PIN
1	VIO	117
2	MCSP11_SCLK	37
3	MCSP11_CS0	34
4	MCSP11_SIMO	39
5	I2C3_SCL	63
6	MCSP11_SOMI	41
7	I2C4_SDA	99
8	I2C3_SDA	61
9	I2C4_SCL	101
10	DGND	1

4 Environmental Specifications

	Min	Max
Operating temperature range	0 °C	+70 °C

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