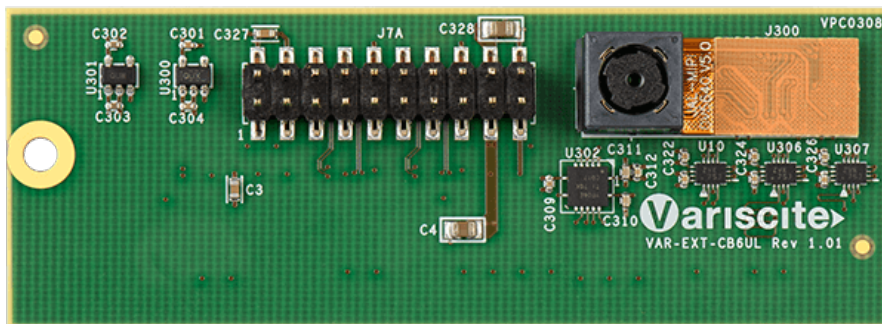




VARISCITE LTD.

VAR-EXT-CB6UL Datasheet

Camera Extension Board for VAR-6ULCustomBoard V 1.x



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VAR-EXT-CB6UL Datasheet

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1. Document Revision History

Revision	Date	Notes
1.0	AUG 29 2018	Preliminary

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2. Overview

This chapter gives an overview of the VAR-EXT-CB6UL.

2.1. General Information

The VAR-EXT- CB6UL is a camera extension board for VAR-6ULCustomBoard. It allows evaluation and easy integration between OV5640 camera module and Variscite DART-6UL SoM.

VAR-EXT-CB6UL Features:

- 5 Mega Pixel Camera module based on OV5645 sensor.

2.1.1. Supporting Variscite products

- VAR-6ULCustomBoard

2.1.2. Supporting O.S

- Linux

2.1.3. Additional information

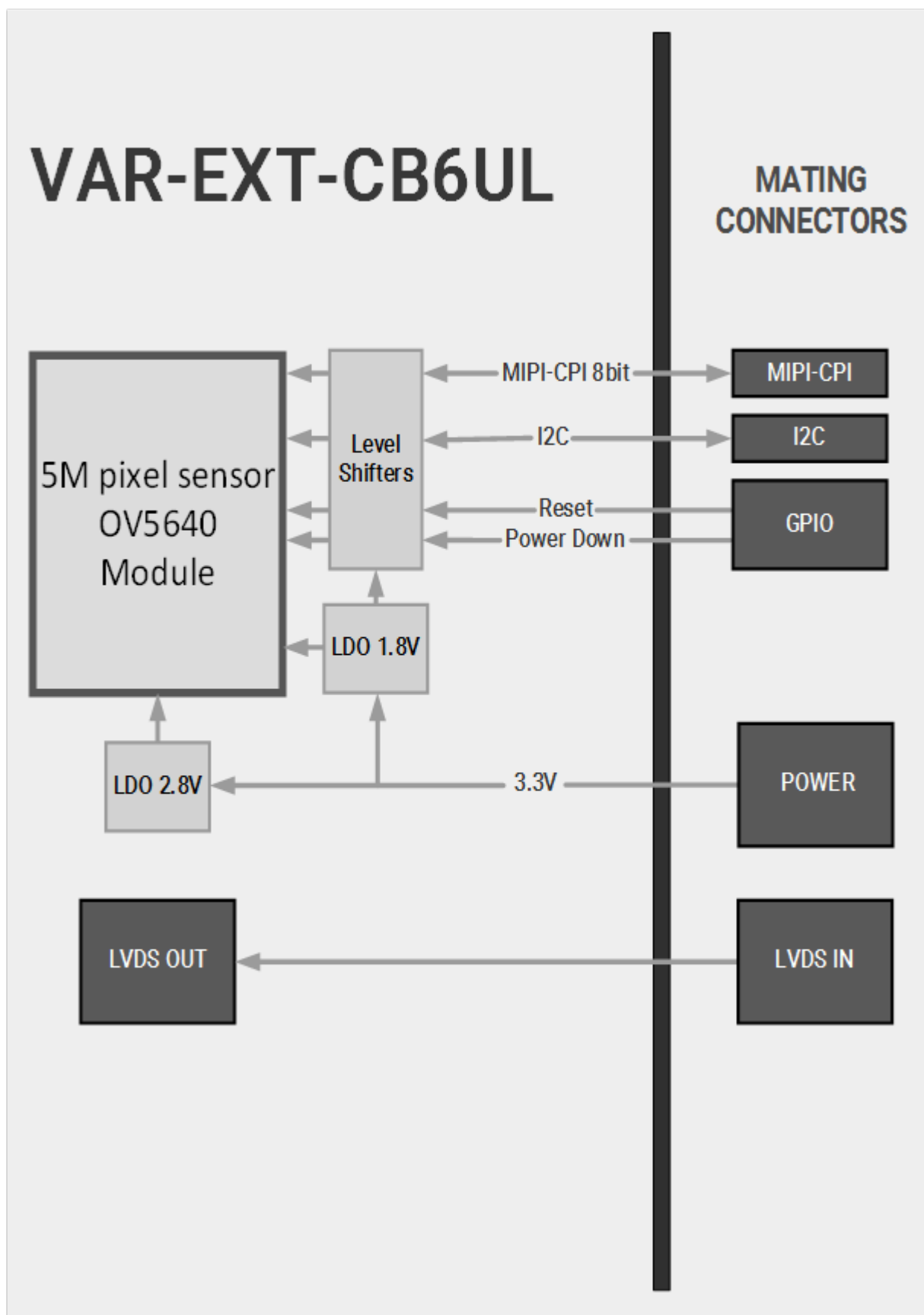
Board schematics is available to download at www.variscite.com,

For further information contact Variscite support at <mailto:support@variscite.com>.

2.2. VAR-EXT-CB6UL features summary

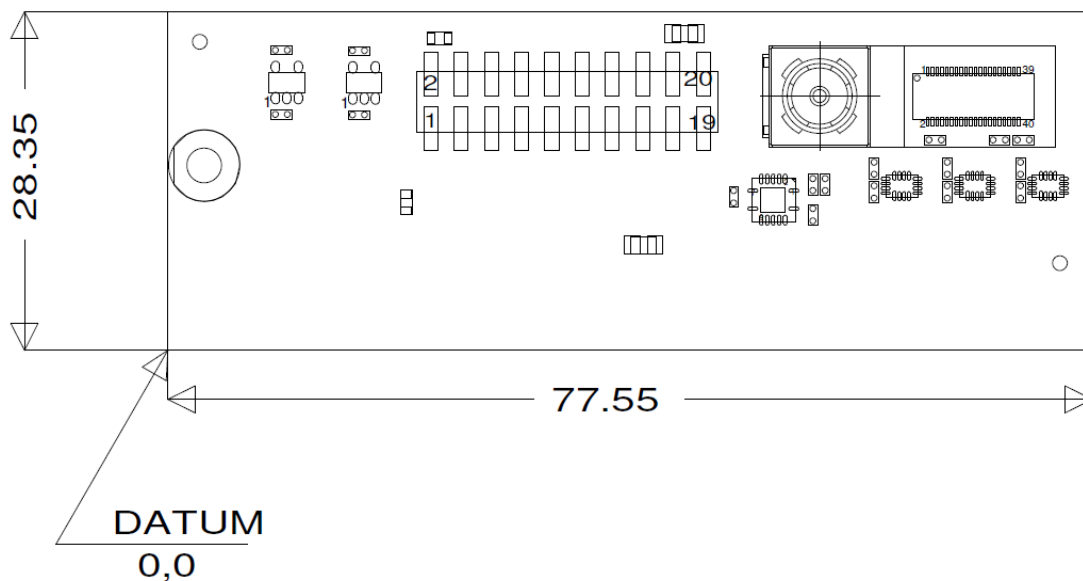
- 7 x 10 PIN Socket Connector compatible with VAR-6ULCustomBoard
- 1 x 20 PIN Socket Connector compatible with VAR-6ULCustomBoard
- 1 x 20 PIN Header Connector compatible with VLCD-CAP-GLD-LVDS
- JAL-MIPI-OV5640 V5.0 camera module

2.3. Block Diagram



2.4. Board Layout

The VAR-EXT-CB6UL physical dimensions are 77.55 x 28.35 mm.



Detailed CAD files are available for download at www.variscite.com.

2.5. VAR-EXT-CB6UL connectors

The below table lists all available connectors on the VAR-EXT-CB6UL, refer to chapter 2 for a more detailed description and Pin-out of each connector.

Table 1-1 VAR-EXT-CB6UL connectors

Reference	Function	Type
J6	CPI DATA	Socket 2.54mm, 2x5 pin
J8	CPI Control	Socket 2.54mm, 2x5 pin
J9	CPI DATA	Socket 2.54mm, 2x5 pin
J11	CPI DATA	Socket 2.54mm, 2x5 pin
J12	CPI DATA, I2C, MCLK	Socket 2.54mm, 2x5 pin
J13	CPI DATA, CPI Control	Socket 2.54mm, 2x5 pin
J10	CPI DATA	Socket 2.54mm, 2x5 pin
J7	LVDS IN	Socket 2.54mm, 2x10 pin
J7A	LVDS OUT	Header 2.54mm, 2x10 pin
J300	JAL-MIPI-OV5640 V5.0 module mating connector	Board to Board 40 pin

3. Detailed Description

3.1. VAR-EXT-CB6UL Interfaces

3.1.1. Camera Board PCB connector

The mated VAR-DARTCustomBoard exports the DART-6UL 16bit MIPI CPI camera interface via seven 2x5 headers with 2.54mm pitch.

Mating connector is SAMTEC P/N: 89898-305ALF

Table 2-1: Mating connector pin out

Pin	Name	Function
J6.1		
J6.2		
J6.3		
J6.4		
J6.5	CSI_DATA3	CSI_DATA1
J6.6		
J6.7	CSI_DATA4	CSI_DATA2
J6.8	DGND	DGND
J6.9	VCC_3V3	VCC_3V3
J6.10		
J8.1	CSI_FIELD	Not Used
J8.2		
J8.3	CSI_VSYNC	CSI_VSYNC
J8.4		
J8.5	CSI_HSYNC	CSI_HSYNC
J8.6		
J8.7		
J8.8		
J8.9		
J8.10		
J9.1	CSI_DATA10	Not Used
J9.2		
J9.3	CSI_DATA11	Not Used
J9.4	GPIO1_1	Camera Reset
J9.5	CSI_DATA0	Not Used
J9.6	GPIO1_2	Camera Power Down
J9.7	CSI_DATA1	Not Used
J9.8		
J9.9		
J9.10		
J10.1		
J10.2		
J10.3		
J10.4		
J10.5		
J10.6		
J10.7		

VAR-EXT-CB6UL CAMERA ADAPTER BOARD

Pin	Name	Function
J10.8		
J10.9	CSI_DATA14	Not Used
J10.10		
J11.1		
J11.2	CSI_DATA6	CSI_DATA4
J11.3		
J11.4	CSI_DATA7	CSI_DATA5
J11.5		
J11.6	CSI_DATA9	CSI_DATA7
J11.7		
J11.8	CSI_DATA8	CSI_DATA6
J11.9	CSI_DATA2	CSI_DATA0
J11.10		
J12.1	I2C2_SCL	I2C2_SCL
J12.2		
J12.3	I2C2_SDA	I2C2_SDA
J12.4		
J12.5	CSI_DATA12	Not Used
J12.6		
J12.7	CSI_DATA13	Not Used
J12.8	CSI_MCLK	CSI_MCLK
J12.9		
J12.10		
J13.1		
J13.2	CSI_DATA5	CSI_DATA3
J13.3		
J13.4	CSI_PIXCLK	CSI_PIXCLK
J13.5		
J13.6		
J13.7		
J13.8		
J13.9		
J13.10	CSI_DATA15	Not Used

3.1.2. OV5640 V5.0 5 Mega Pixel camera module connector

The VAR-EXT-CB6UL features 5 Mega Pixel camera module based on OV5640 sensor. The mating connector is Hirose DF30FC-40DS-0.4V(82).

Table 2-2 Camera Module mating connector pin out

Pin #	Camera Board Signal	Description
J300.1	DGND	Digital Ground
J300.2	DGND	Digital Ground
J300.3		
J300.4	VCC_2V8	Camera 2.8V
J300.5	CAM_I2C_SDA	I2C data Note: Signal level is 1.8V
J300.6		
J300.7	CAM_I2C_SCL	I2C clock Note: Signal level is 1.8V
J300.8	VCC_2V8	Camera 2.8V
J300.9	CAM_RESET	Camera Reset control; Active low Note: Signal level is 1.8V
J300.10		
J300.11	CAM_PIXCLK	Camera Pixel Clock output Note: Signal level is 1.8V
J300.12		
J300.13	CAM_VSYNC	Camera Vertical Sync output Note: Signal level is 1.8V
J300.14		
J300.15	CAM_HSYNC	Camera Horizontal Sync output Note: Signal level is 1.8V
J300.16		
J300.17	CAM_PWDN	Camera power down control; Active high Note: Signal level is 1.8V
J300.18		
J300.19	CAM_DATA7	Camera Data 7 output Note: Signal level is 1.8V
J300.20	DGND	
J300.21	CAM_DATA6	Camera Data 6 output Note: Signal level is 1.8V
J300.22		
J300.23	CAM_DATA5	Camera Data 5 output Note: Signal level is 1.8V
J300.24		
J300.25	CAM_DATA4	Camera Data 4 output Note: Signal level is 1.8V
J300.26	DGND	Digital Ground
J300.27	CAM_DATA3	Camera Data 3 output Note: Signal level is 1.8V
J300.28		
J300.29	CAM_DATA2	Camera Data 2 output Note: Signal level is 1.8V
J300.30		
J300.31	CAM_DATA1	Camera Data 1 output Note: Signal level is 1.8V

Pin #	Camera Board Signal	Description
J300.32	DGND	Digital Ground
J300.33	CAM_DATA0	Camera Data 0 output Note: Signal level is 1.8V
J300.34	CAM_MCLK	Reference clock Note: Signal level is 1.8V
J300.35		
J300.36	VCC_1V5	
J300.37		
J300.38	VCC_1V8	Camera 1.8V
J300.39	DGND	
J300.40	DGND	Digital Ground

4. Environmental specifications

Table 3-1: Environmental Specification

	Min	Max
<i>Commercial operating temperature range</i>	0°C	+70°C
<i>MTBF</i>	>10kHRS	
<i>Relative humidity, Operational</i>	10%	90%
<i>Relative humidity, Storage</i>	5%	95%

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