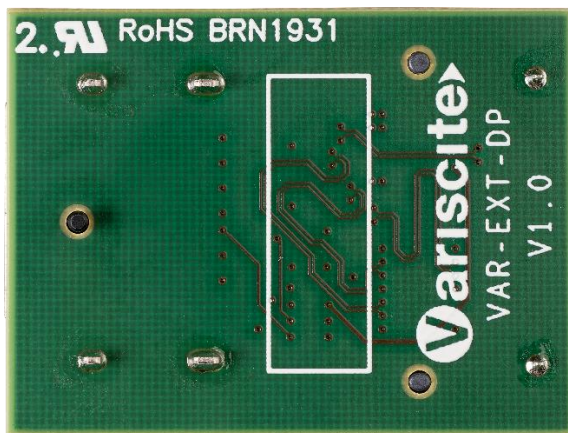
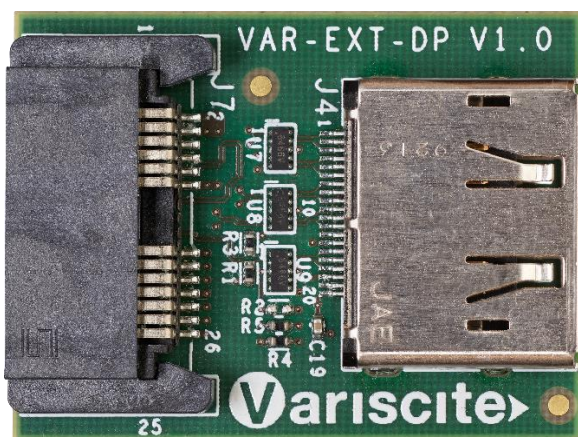




VARISCITE LTD.

## VAR-EXT-DP Datasheet

### Display Port Extension Board for Symphony-Board V 1.x



**VARISCITE LTD.**

# VAR-EXT-DP Datasheet

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# 1. Document Revision History

Revision	Date	Notes
1.0	28/01/2020	Initial

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## 4. Overview

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

### 4.1. General Information

The VAR-EXT-DP is a Display Port extension board for Symphony-Board.  
It allows evaluation and easy interface between Display Port and Variscite VAR-SOM-MX8 SOM.

Supporting Variscite products:

- Symphony-Board
- O.S support
  - ✓ Linux BSP
  - ✓ Android

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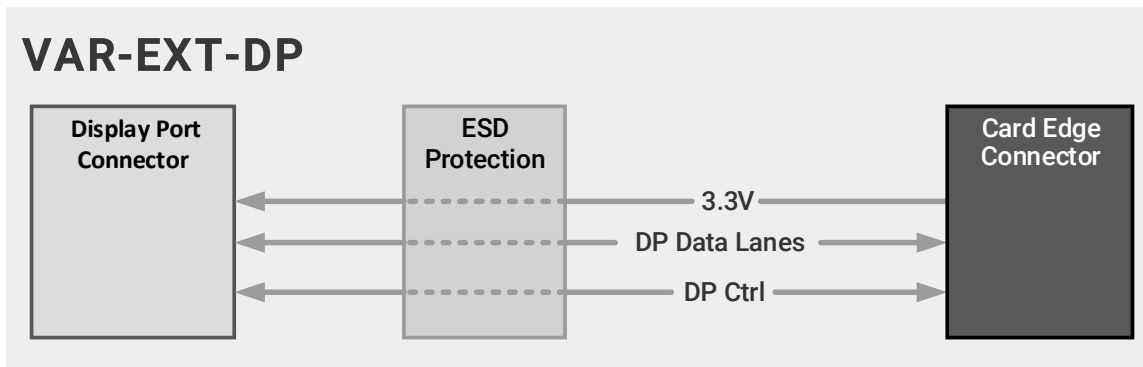
Contact Variscite support services for further information: [support@variscite.com](mailto:support@variscite.com).

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## 4.2. Features Summary

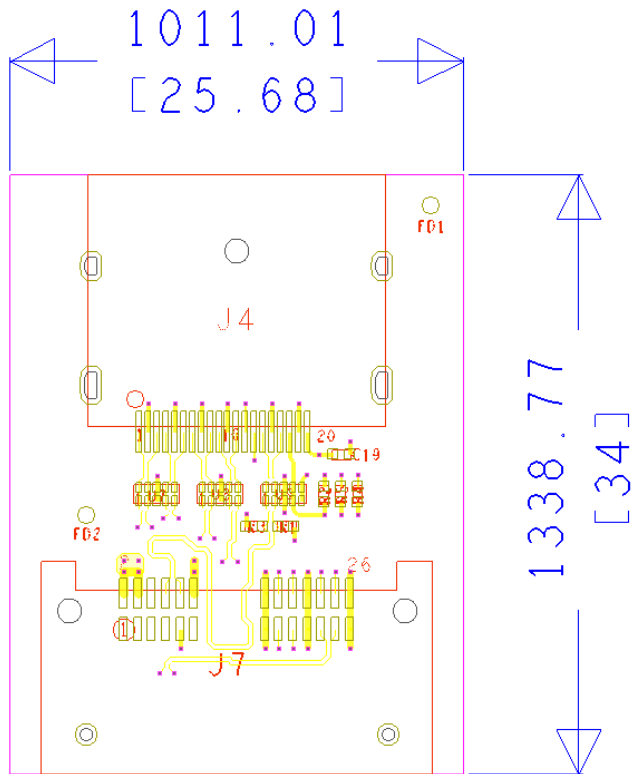
- 1 x 26 pin Card Edge Connector compatible with Symphony-Board
- 1 x Display Port interface ESD protection
- 1 x Display Port connector

## 4.3. Block Diagram



## 4.4. Board Layout

The VAR-EXT-DP physical dimensions are 25.68 x 34 mm.



Detailed CAD files are available for download at [www.variscite.com](http://www.variscite.com).



## 4.5. VAR-EXT-DP Connectors

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

**Table 4-1 VAR-EXT-DP connectors**

Reference	Function	Type
J4	Display Port connector	Display Port Connector receptacle JAE P/N: DP1RD20JQ1R400
J7	Symphony-Board and Concerto-Board edge connector mating	Card edge connector 0.8mm 26pins Polarized SAMTEC P/N: HSEC8-113-01-L-RA

## 5. Detailed Description

### 5.1. Overview

This chapter details the VAR-EXT-DP features and external interfaces.

Please refer to the VAR-SOM-MX8 data sheet for more information.

Table 5-1 describes this chapter table header and acronyms used.

**Table 5-1: Acronyms used on tables column header**

Column		Meaning
Pin#	x	Pin number on a connector
Type		Pin type & direction
	I	INPUT
	O	OUTPUT
	DS	Differential Signal
	A	Analog
	P	Power
Signal		VAR-EXT-DP schematic signal name
Description		Short Pin functionality description

## 5.2. VAR-EXT-DP Interfaces

### 5.2.1. Card Edge connector

The Display Port interface of the VAR-SOM-MX8 is exported to the Symphony-Board via a 26POS 0.8mm Card edge connector.

**Mating connector is SAMTEC P/N: HSEC8-113-01-L-RA**

**Table 5-2: Card edge connector pin out (J7)**

Pin #	Card Edge connector Signal	Type	Description
1			
2	BASE_PER_3V3	P	DP adaptor Power supply 3.3V
3			
4	BASE_PER_3V3	P	DP adaptor Power supply 3.3V
5			
6			
7			
8	EDP_AUX_P	DSIO	DP Auxiliary lane; Positive
9	J1.154-{MX8}_HPD	I	DP Hot plug detect signal
10	EDP_AUX_N	DSIO	DP Auxiliary lane; Negative
11			
12	BASE_PER_3V3	P	DP adaptor Power supply 3.3V
13	GND	P	Digital Ground
14	GND	P	Digital Ground
15	J1.152-{MX8}_EDP3_P	DSI	DP Data3 lane; Positive
16	J1.155-{MX8}_EDP2_P	DSI	DP Data2 lane; Positive
17	J1.150-{MX8}_EDP3_N	DSI	DP Data3 lane; Negative
18	J1.157-{MX8}_EDP2_N	DSI	DP Data2 lane; Negative
19	GND		
20	GND		
21	J1.151-{MX8}_EDP0_P	DSI	DP Data0 lane; Positive
22	J1.146-{MX8}_EDP1_P	DSI	DP Data1 lane; Positive
23	J1.153-{MX8}_EDP0_N	DSI	DP Data0 lane; Negative
24	J1.148-{MX8}_EDP1_N	DSI	DP Data1 lane; Negative
25	GND	P	Digital Ground
26	GND	P	Digital Ground
27	GND	P	Digital Ground
28	GND	P	Digital Ground

**5.2.2. Display Port Connector Receptacle**

The VAR-EXT-DP exposes the Display Port interface for external connection via a Display Port Connector.

**Table 5-3: Display Port connector pin out (J4)**

Pin #	Display Port connector Signal	Type	Description
1	J1.151-{MX8}_EDP0_P	DSO	DP Data0 lane; Positive
2	GND	P	Digital Ground
3	J1.153-{MX8}_EDP0_N	DSO	DP Data0 lane; Negative
4	J1.146-{MX8}_EDP1_P	DSO	DP Data1 lane; Positive
5	GND	P	Digital Ground
6	J1.148-{MX8}_EDP1_N	DSO	DP Data1 lane; Negative
7	J1.155-{MX8}_EDP2_P	DSO	DP Data2 lane; Positive
8	GND	P	Digital Ground
9	J1.157-{MX8}_EDP2_N	DSO	DP Data2 lane; Negative
10	J1.152-{MX8}_EDP3_P	DSO	DP Data3 lane; Positive
11	GND	P	Digital Ground
12	J1.150-{MX8}_EDP3_N	DSO	DP Data3 lane; Negative
13	CONFIG1	IO	Connected to GND via PD resistor
14	CONFIG2	IO	Connected to GND via PD resistor
15	EDP_AUX_P	DSIO	DP Auxiliary lane; Positive
16	GND	P	Digital Ground
17	EDP_AUX_N	DSIO	DP Auxiliary lane; Negative
18	J1.154-{MX8}_HPD	P	DP Hot plug detect signal
19	GND	P	Digital Ground
20	BASE_PER_3V3	P	DP adaptor Power supply 3.3V
MECH1	GND	P	Digital Ground
MECH2	GND	P	Digital Ground
MECH3	GND	P	Digital Ground
MECH4	GND	P	Digital Ground

## 6. Environmental Specifications

**Table 6-1: Environmental Specification**

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

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