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1 Introduction

MDSER-FPD-1CH is a deserializer board from the MDSER product family which is based on the Texas Instruments FPD-Link III deserializer chip, DS90UB954-Q1. This board is intended for use with the Raspberry Pi platform (from Rev. 3) or with the NVIDIA® Jetson Nano™ A02 (single-camera interface) and a single FPD-Link III MIPI CSI-2 camera. The typical setup is shown below:
The dimensions of MDSER-FPD-1CH board are shown below:
2.1 Connector Description

The following diagram shows the position and function of the connectors on the MDSER-FPD-1CH board:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>J2</td>
<td>Header for 40-pin connector from embedded system</td>
</tr>
<tr>
<td>2</td>
<td>J1</td>
<td>FAKRA connector male code Z 50 Ohm for FPD-Link III</td>
</tr>
<tr>
<td>3</td>
<td>J3</td>
<td>Connector for embedded system sensor interface (contacts on top)</td>
</tr>
</tbody>
</table>

Please note: this board provides a phantom power supply of +27V at the FAKRA connector J1. If this board is not used in combination with a product from The Imaging Source, please ensure that the 3rd party serializer board can withstand this high voltage.
2.2 FPC Connector J3 on the MSER-FPD-1CH Board

The sensor interface connector J3 has the following pinout:

- CAM_GPIO0
- CAM_GPIO1
- MIPI_CSI0_D0_N
- MIPI_CSI0_D0_P
- MIPI_CSI0_D1_N
- MIPI_CSI0_D1_P
- MIPI_CSI0_CLK_N
- MIPI_CSI0_CLK_P
- I2C_SCL
- I2C_SDA
- GND

The CAM_GPIOs and I2C-bus signals have the I/O voltage of 3.3V.
2.3  I/O Signals on DS90UB954-Q1

The connected I/O signals on the deserializer chip DS90UB954-Q1 (Texas Instruments) are listed in the following table:

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Dir</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 (GPIO0)</td>
<td>CAM_GPIO0</td>
<td>I/O</td>
<td>Unused GPIO0 signal from sensor interface J3</td>
</tr>
<tr>
<td>27 (GPIO1)</td>
<td>CAM_GPIO1</td>
<td>I/O</td>
<td>Unused GPIO1 signal from sensor interface J3</td>
</tr>
<tr>
<td>26 (GPIO2)</td>
<td>PWR_ON</td>
<td>O</td>
<td>Coax power for FPD-Link III enable, active high</td>
</tr>
<tr>
<td>25 (GPIO3)</td>
<td>NC</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>10 (GPIO4)</td>
<td>NC</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>9  (GPIO5)</td>
<td>NC</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8  (GPIO6)</td>
<td>NC</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
2.4 On-board LEDs

There are two status-LEDs on the MDSER board:

<table>
<thead>
<tr>
<th>Name</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED1</td>
<td>Red</td>
<td>FPD-Link III transmission errors</td>
</tr>
<tr>
<td>LED2</td>
<td>Green</td>
<td>FPD-Link III connection has been established</td>
</tr>
</tbody>
</table>
MDSER-FPD-1CH 2.00

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All weights and dimensions are approximate. Unless otherwise specified, the lenses shown in the context of cameras are not shipped with these cameras.

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