96Boards Consumer Edition - Camera Module Interface Addendum

Abstract

This document is targeted to provide a reference for a recommended CSI Camera module connection with 96Boards Consumer Edition hardware.

This document describes a pin pitch (in conjunction with the usage of flexible cable) and pinout specification for the 96Boards CE.

This is provided as the preferred functional specification for a camera module direct cabled interface to a 96Boards baseboard, mezzanine or module.

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1. Introduction

This document specifies an onboard connector suitable for interface of a MIPI camera module to hardware, compliant to the 96Boards CE specification.

The intention is to specify a connector placeholder with size and pinout information, but does not constrain the particular component selection for the connector itself.

The document also lists the signals that **shall** be on the connector.

2. Design

2.1. Available Camera Interface Support

In the current 96Boards CE specification up to 2 MIPI-CSI2 interfaces may be provided on the high speed expansion bus via the 60 Pin High Speed Expansion Connector with 0.8mm 50 ohm high speed receptacle. This is listed in Table 1.

1 or 2 MIPI CSI-2 ports may be provided on the expansion bus interface. If 1 port is provided it shall be located on the CSI0 port interface. From 1-4 lanes may be implemented on the CSI0 port interface. From 1-2 lanes may be implemented on the CSI1 port interface.

An implementation may support dual (stereo) cameras through the CSI interface(s) if the SoC provides the necessary functionality.

Cameras/Sensors can require additional control signals including RST, PWRDN and MCLK. Separate signals are available for these functions.

Signal	Description	V	Type	Spec.	If not used
CSI[0-1]_C[+-]	Differential CSI Clock	1.2V	Output	Optional	NC
CSI[0-1]_D[0-1][+-]	Differential CSI data channel	1.2V	IO	Optional	NC
CSI0_D[2-3][+-]	Differential CSI data channel	1.2V	IO	Optional	NC

Table 1 MIPI-CSI2 Pins on High Speed Expansion Connector

2.2. Constraints

The signal through the MIPI-CSI2 is a low level signal (100mV at 1.5GHz) and has tight impedance and length matching requirements.