AiStarVision MIPI Adapter UserGuide

This MIPI adapter board is primarily designed for Dragonboard410C,and it should be hardware compatible with other consumer edition 96boards.By providing a simple way to integrate camera system to your project,we could build “smart” application based on Dragonboard,either for robot or IoT. Our goal of this project is to make Dagonboard410 support multiple image sensors.

Hardware

1 High speed connector(Camera interface)

All the camera interfaces are for CSI0 of Dragonboard410C from High Speed Connector,up to 4 data lanes and 1 clock lane.It does not support CSI1 at this time.For two CSI2 ports support/Stereo application,contact us for more information

1.1 J2 and J3

1) Sensor support and status

These two connectors are for 2 data lane modules. Specifically J3 is for OV5645/OV5640 auto focus camera module.And J2 is for OV7251 camera module(Global shutter,640*480@100fps).

Camera modules we have tested: OV5640 and OV5645

OV5645/OV5640 Part#:AMC5014OV-ATV01 V1.0(auto focus)

OV5645/OV5640 driver status:DONE

We will release the driver as well camera module spec we use for OV7251

OV7251 driver status:Doing

Note:

OV5645 module based on our MIPI Adapter works for Linaro official 16.06 release OV5640 also works,but needs a little bit setting adjustment,we’ve uploaded the modified driver for OV5640 to our github,see the last page for software and support

2)Hardware configuration on MIPI Adapter board for OV5645/OV5640

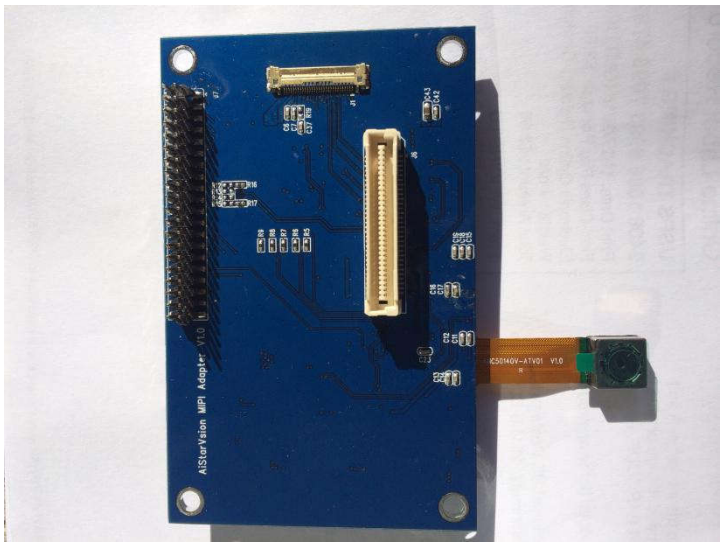
J11: 1-2 for analog power

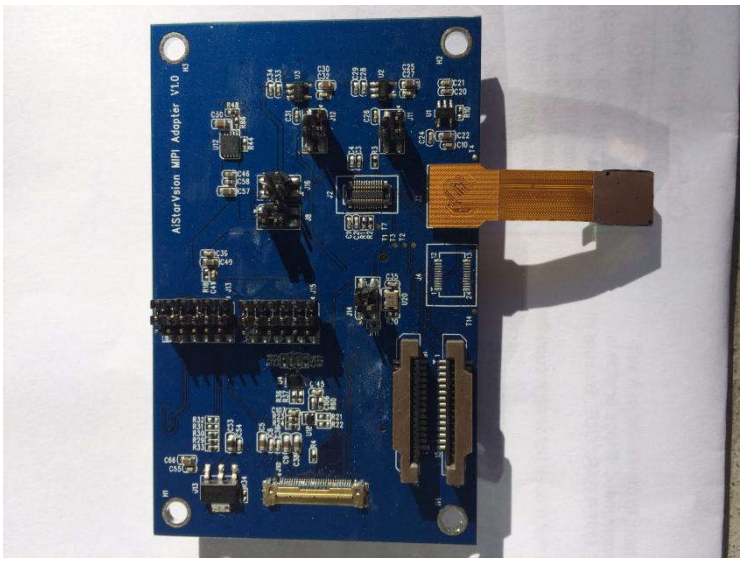
J12: 1-2 for digital I/O power

J8 : 3-4 for adapter board main power source

J14:3-4 for 24MHz OSC clock for camera module

3) OV5645/OV5640 on AiStarVsion MIPI Adapter





1.2 J5-Raspberry PI camera module interface

Raspberry PI is a popular SBC,a lots of developers build camera applications with Raspberry PI camera module.So we want people also have this option if they already had a Raspberry PI camera when using Dragonboard410C

Part#:Raspberry Pi Camera Rev1.3(OV5647)
Raspberry Pi Camera Module V2(IMX219)
Drivers Status:TBD

1.3 J10-IPEX camera interface

A lots of drones and robots use IPEX connector as their camera interface,so we have this interface supported.

Drivers Status:TBD

2. Low speed connector(serial and GPIO)

Those following peripherals are still available on MIPI adapter board:
Serial Ports:UART0,UART1,I2C0,I2C1 and I2C2
GPIO: 13,34(PWDN),35(CAM_RST)36,69,115,

Software and Support

You should be able to find everything regarding this project from our github page:https://github.com/Kevin-WSCU/Dragonboard410C-Camera
It includes schematic for adapter board,module spec,driver sample code and driver status as well.
If you have any question,let us know,we will try our best to help you.Our email：
support@aistarvision.com

About US

We've been doing some machine vision project based on Dragonboard410C,and we realized that it's not just us, many people are working on drones ,robots and IoT projects. So we hope this adapter board would make it much easier for everyone who are interested in building camera applications based on Dragonboard410C.

Document History:

Revision	Date	Notes	Who
Rev1.0	11/26/2016	Initial draft	Kevin.W