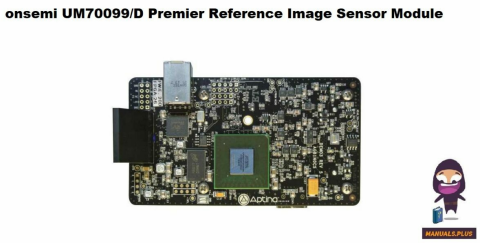

onsemi UM70099/D Premier Reference Image Sensor Module User Guide

Contents

onsemi UM70099/D Premier Reference Image Sensor Module

Product Information

Product Specifications

- **Product Name:** PRISM Module
- **Model Number:** UM70099/D
- **Manufacturer:** onsemi

Product Usage Instructions

Accessing Module Documents and Design Files

Users can access all design files from the image portal folder on the Onsemi website using the following link: **Design Files Link**.

Storing Module Information

Each PRISM module contains OTPM or EEPROM to store module information. Refer to the OTPM/EEPROM standard document AND90264-D for more information.

PRISM Module OPN List

Refer to the list of PRISM module OPN numbers for different models available.

Using DEMO3 System for PRISM

The DEMO3 system offers various adapters to interact with the PRISM module. The typical hardware components include the Demo3 Baseboard, AP1302 Headboard, and PRISM DEMO3 ADAPTER MIPI HISPI BOARD.

DevWare Installation and Setup

Download the DevWare install file from **here**.

Example to Bring up PRISM by DevWare

1. Attach prism module to PRISM adapter (ensure power jumper is set correctly).
2. Plugin PRISM adapter to DEMO3 baseboard.

3. Connect USB3.0 cable to PC.
4. Lunch DEVWARE on your PC.
5. Select Detect when the Startup Choices manual pops up.
6. Select the default setting in the Startup Wizard window.
7. Preview the image and evaluate the performance.

Frequently Asked Questions (FAQ)

- **Q: Where can I find detailed support on playing and developing with DevWare?**
  A: For detailed support on playing and developing with DevWare, please refer to the following link: **DevWare Support Link**.

PRISM Module User Guide
(Premier Reference Image Sensor Module)

UM70099/D

Purpose

The purpose of this guide is to help RPISM module users quickly access the module documents, adapter documents, DevWare Install setup file, hands-on example of PRISM brought up by DevWare and driver-supported list for eco−system platform partners.

PRISM Module Documents
Users can get all the design files from the image portal folder on the Onsemi website.

Link as below:
https://www.onsemi.com/PowerSolutions/myon/erFolder.do?folderId=1665227.

Description

1. **They will contain the following design files:**
   - Hardware Design Documents:
     - PRISM_Module_2D_Drawing.pdf
     - PRISM_Module_Schematic.pdf
     - PRISM_Module_Schematic.dsn
     - PRISM_Module_layout.brd
     - PRISM_Module_Gerber.zip
     - PRISM_Module_BOM.xlsx
   - PRISM module datasheet
   - Sensor ini file for OPTM or EEPROM
   - AP1302 Calibrated XML File

     Image Sensor Portal Documents

     Portal Home > Pre-Production Products > PRISM MODULES > AR2020

     AR2020

     Folders

Folder Name	Sub Folders	Files
AP1302 Calibration File *	0	1
Hardware Design Documents *	0	6
PRISM Module Datasheet *	0	1
Sensor ini File for OPTM *	0	1

Figure 1. Example of AR2020 PRISM Documents in Image Sensor Portal

2. There is OTPM or EEPROM to store the module information for each PRISM module, please refer the OTPM/EEPROM standard for general information:
   AND90264−D (PRISM Module EEPROM_OTPM).PDF
3. **PRISM module OPN list as below:**
   - **ARX383:**
     PRISM1M−ARX383CSSM130110−GEVB
   - **AR0145:**
     PRISM1M−AR0145CSSM130110−GEVB
   - **AR0235:**
     PRISM1M−AR0235CSSM130110−GEVB
   - **AR0544:**
     PRISM1M−AR0544CSSC130110−GEVB
   - **AR0830:**
     PRISM1M−AR0830CSSC130110−GEVB
   - **AR2020:**
     PRISM1M−AR2020CSSC130110−GEVB
   - **AR0822:**
     PRISM1M−AR0822NPSC130110−GEVB
   - **AR0246:**
     PRISM1M−AR0246NPSC130110−GEVB
   - **AR1223:**
     PRISM1M−AR1223NPSC130110−GEVB

onsemi DEMO3 System for PRISM
onsemi offers many kinds of adapters to play with the PRISM module, here is the typical hardware using calling DEMO3 system. It contains below hardware parts:

1. Demo3 Baseboard, OPN: AGB1N0CS−GEVK
2. AP1302 Headboard, OPN: AP1302CSSL00SMGAH3−GEVB
3. PRISM DEMO3 ADAPTER MIPI HISPI BOARD, OPN:
   PRISM1−ADPTR−DM3D1−GEVB
   - The user manual of the PRISM DEMO3 adapter board can be found here.
     PRISM_MODULE_DEMO3_ADAPTER_USER_ MANUAL
4. Hardware overview of the whole system:

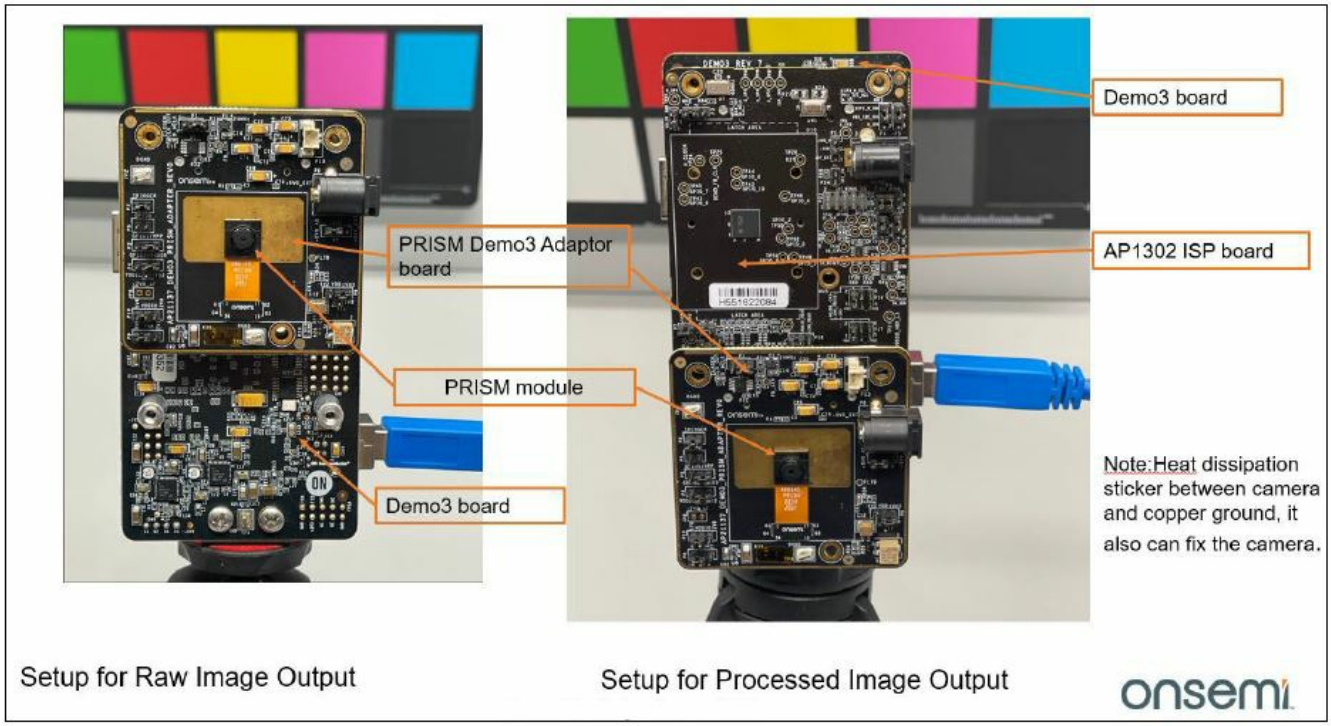

Figure 2. Hardware System Overview

5. PRISM DEMO3 adapter power jumper selection

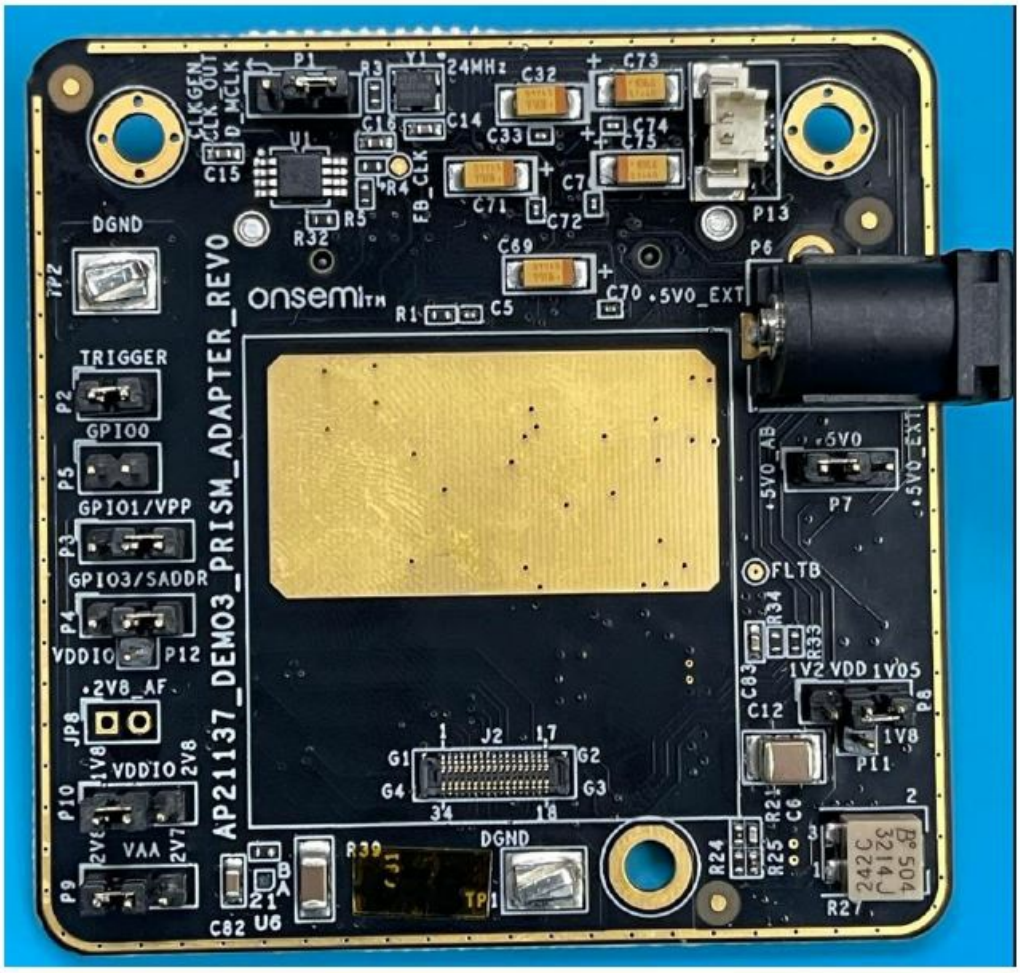

Figure 3. Top Side View of PRISM DEMO3 Adapter

	VDD_P8	VAA_P9	VDDIO_P10	GPIO1_P3	GPIO3_P4
AR1335	1.2V	2.7V	1.8V	Pls connect accordingly based on the defined use case for GPIO1.	Pls connect accordingly based on the defined use case for GPIO3.
AR0144	1.2V	2.8V	1.8V		
AR0234	1.2V	2.8V	1.8V		
AR0822	1.05V	2.8V	1.8V		
AR0544	1.05V	2.8V	1.8V		
AR0830	1.05V	2.8V	1.8V		
AR2020	1.05V	2.8V	1.8V		
ARX383	1.2V	2.8V	1.8V		
AR0145	1.2V	2.8V	1.8V		
AR0235	1.25V	2.8V	1.8V		
AR0246	1.05V	2.8V	1.8V		
ARX3A0	1.2V	2.7V	1.8V		

Figure 4. PRISM Demo3 Adapter Power Jumper Selection Table

6. DevWare install file download from: https://www.onsemi.com/PowerSolutions/myon/erFolder.do?folderId=750052.

Example to Bring up PRISM by DevWare

1. Attached prism module to PRISM adapter (make sure power jumper set correctly following Figure 4)
2. Plugin PRISM adapter to DEMO3 base board.
3. Connect USB3.0 cable to PC
4. Lunch DEVWARE on your PC
5. Select “Detect” when the Startup Choices manual popup (you may not need to manually select if the software is auto-detected enabled).

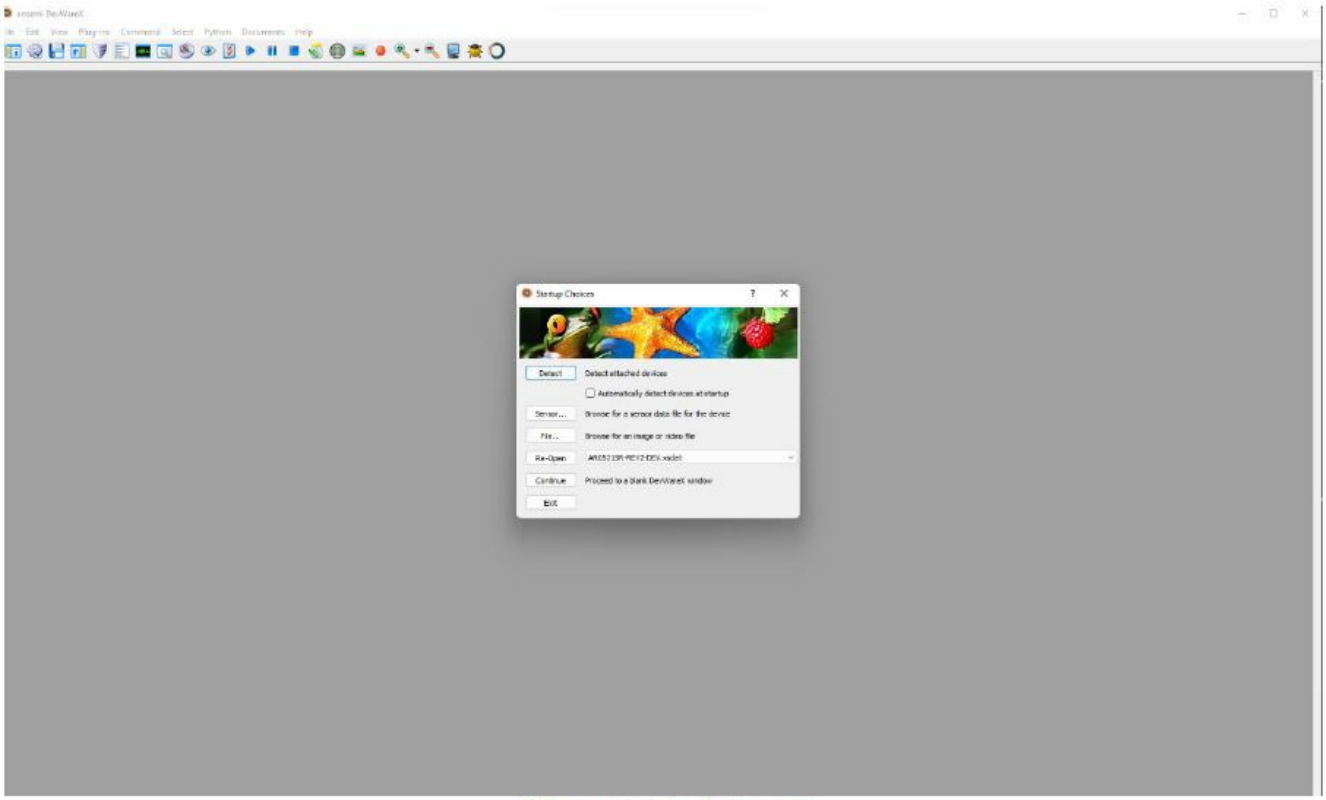

Figure 5. Detect Sensor

6. Select the default setting at the “Startup Wizard” window

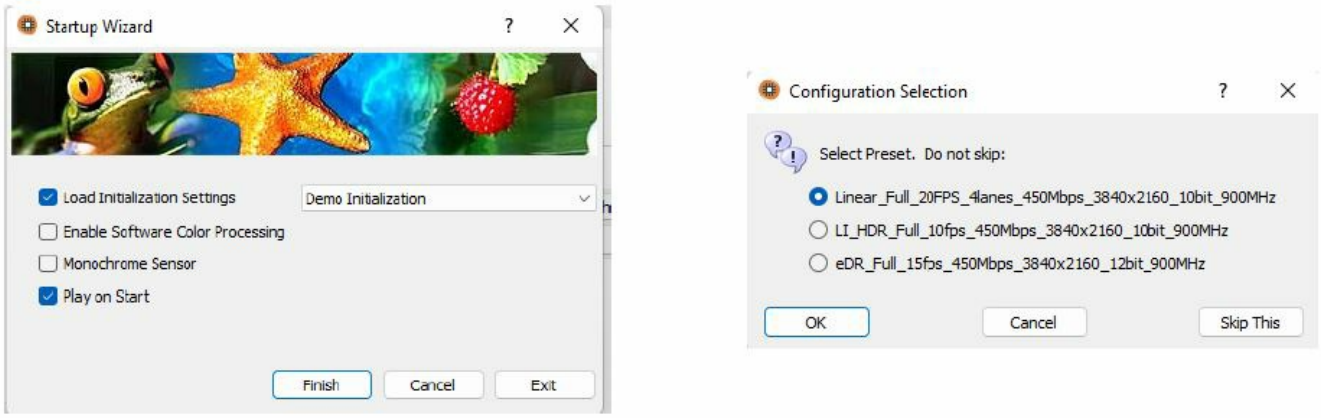

Figure 6. Sensor Setting Select

7. Preview the image and evaluate the performance.

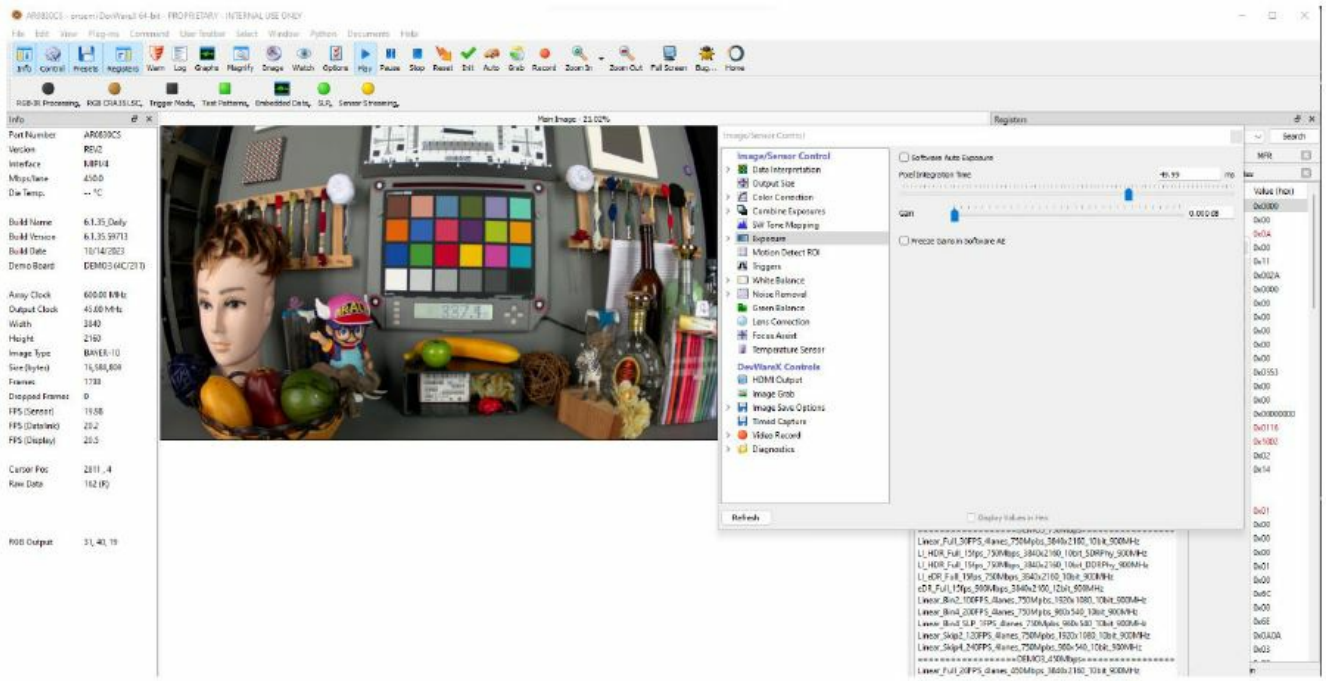

Figure 7. Image Preview

8. For detailed support on how to play and develop with DevWare please refer to the below link: Help – Detailed – DevSuite – Confluence (atlassian.net).

Driver Support List for Eco−system Platform.

1. onsemi has developed many adapter boards for eco−system partners' SOC platform, user can order the board from onsemi, the supported list of the adapters is below:

   Table 1.

Items	Description	OPEN
1	PRISM Adaptor to NXPä i.MX9 EVB	PRISM1−ADPTR−NXPM1−GEVK
2	PRISM Adaptor to NXP i.MX8 EVB	PRISM1−ADPTR−NXPM2−GEVK
3	PRISM/IAS adapter to QualcommÒ RB5 platform	PRISM1−ADPTR−QCMM1−GEVB
4	PRISM/IAS adapter to NVIDIAÒ Jetson Nanoä platform	PRISM1−ADPTR−NVDM1−GEVB
5		

2. Below is an example of connecting the PRISM module to NXP i.mx93 and NVIDIA Jetson Nano.

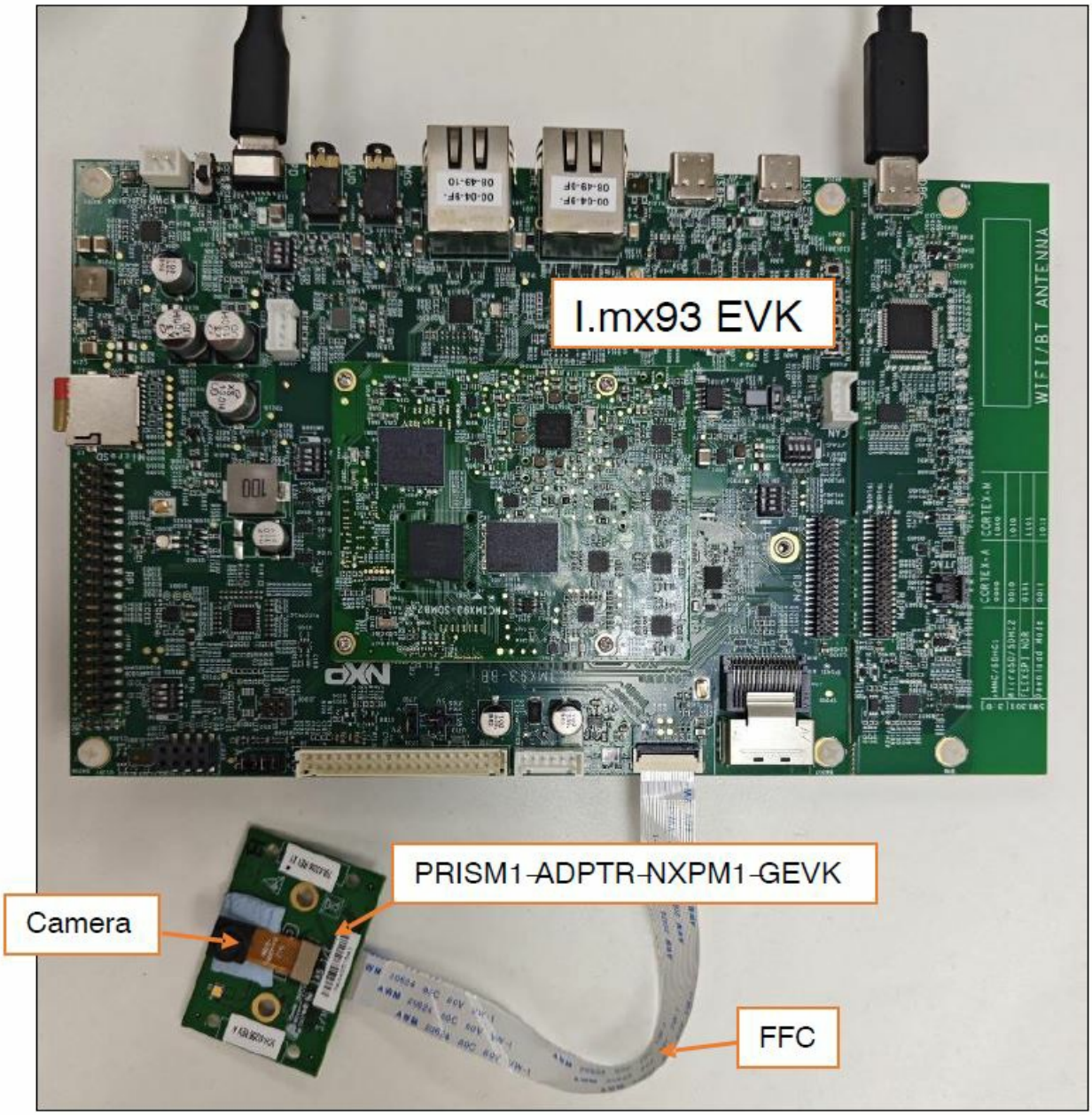

Figure 8. PRISM Module to NXP i.mx93 EVK

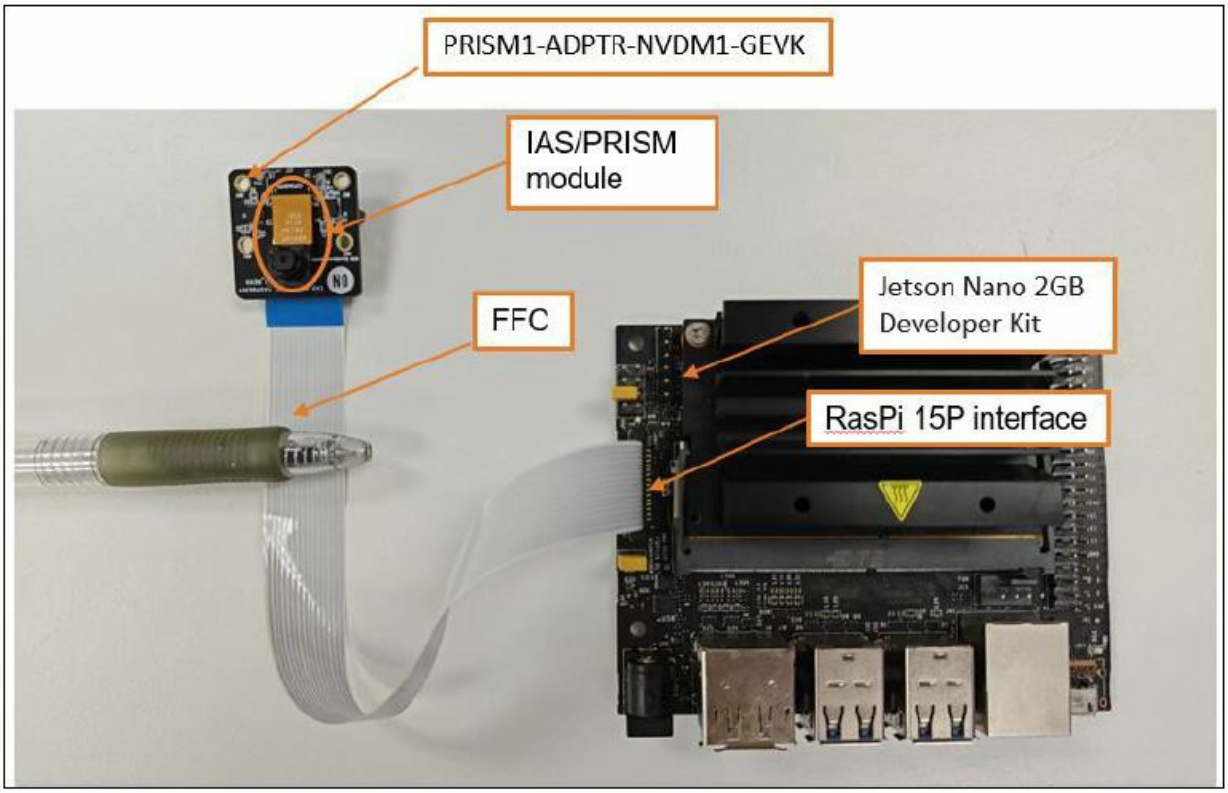

Figure 9. PRISM Module to NVIDIA Jetson Nano EVK

3. onsemi also have enabled driver codes for different sensors, user can check the driver from the below

links under NDA.
[Platform Matrix Pivot](#).

- Jetson Nano is a trademark of NVIDIA Corporation.
- NVIDIA is a registered trademark of NVIDIA Corporation.
- NXP and the NXP logo are trademarks of NXP B.V.
- Qualcomm is a registered trademark of Qualcomm Incorporated.

claim alleges that onsemi was negligent regarding the design or manufacture of the part. onsemi is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

- **Technical Library:** www.onsemi.com/design/resources/technical–documentation
- **Onsemi Website:** www.onsemi.com
- **ONLINE SUPPORT:** www.onsemi.com/support
- For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales.

Documents / Resources

	onsemi UM70099/D Premier Reference Image Sensor Module [pdf] User Guide UM70099 D Premier Reference Image Sensor Module, UM70099 D, Premier Reference Image Sensor Module, Reference Image Sensor Module, Image Sensor Module, Sensor Module, Module

References

- Products | Atlassian
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