

Release Note

Project Name	OnSemiCamModule_96B	Project Code	OT_U21_431
Release Name/Number	4.5	Release Date	04/20/2023
EI Point of Contacts	Deepak Rathore	Customer Point of Contacts	Attila Ambrus

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1. Release Description

The Software release version (v4.5) is based on NXP LF5.10.52_2.1.0 release from eInfochips. It is to be used with Thor96 Development board. This release is based on imx-5.10.52-2.1.0.xml NXP release with adaptations and customizations from eInfochips for use with Thor96 Development platform.

2. Release Details

This release consists of the following:

- Pre-built images
- Documentation
- Build and source code setup script
- Readme
- Yocto recipes and patches
- Test case report

This release includes the following references and additional information:

- **ei_OnSemiCamModule_96B_Thor96_ReleaseNote.pdf** – Provides release information and supporting features.
- **ei_User_Guide_IMX8M_Thor96_L5_10_Rel_4_3.pdf** – Provides the information on installing release on Thor96 development board and steps to test each peripheral on board
- **ML_Demos_Guide_iMX8_L5_10_Rel_4_0.pdf** – Provides information to test machine learning demos on Thor96 development board
- **ei_Camera_User_Guide_Thor96_L5_10_Rel_1_4.pdf** - Provides the information on interfacing camera to Avenger96 development board and steps to capture images and stream
- **ei_Alexa_User_Manual_iMX8M_L5_10_52_Rel_2_0.pdf** – Provides information to validate Alexa demo on Thor96 development board
- **ei_OnSemiCamModule_96B_Thor96_Testcase.xls** – Test case report of Thor96 firmware release

a. Software Package Deliverables

Download or clone release [I.IMX8_Thor96](#), it contains following:

I.IMX8_Thor96/Kernel_5_10_52

- └─ Software Docs
 - └─ Machine-Learning-Demos
 - └─ ML_Demos_Guide_iMX8_L5_10_Rel_4_0.pdf
 - └─ ReleaseNote
 - └─ ei_OnSemiCamModule_96B_Thor96_ReleaseNote.pdf
 - └─ TestReport
 - └─ ei_OnSemiCamModule_96B_Thor96_Testcase.xlsx
 - └─ UserGuide
 - └─ ei_User_Guide_IMX8M_Thor96_L5_10_Rel_4_3.pdf
 - └─ ei_Camera_User_Guide_Thor96_L5_10_Rel_1_4.pdf
 - └─ ei_Alexa_User_Manual_iMX8M_L5_10_52_Rel_2_0.pdf
- └─ Thor96_L5_10_52_Rel_4_5_patches
- └─ yocto_build_setup_thor96.sh
- └─ Yocto_build_setup_steps.txt

b. For Product Delivery**i) Shipping Address:**

N.A.

ii) If customer's shipment account to be used, provide details

N.A

3. Release Contents

a. Release Feature Description

Sr. No.	Feature Description	Feature or Change implemented/ Bug Resolved	Ref ID
1	Ethernet Demo	Feature	
2	HDMI1 Demo	Feature	
3	HDMI2 Demo	Feature	
4	Dual Display Demo	Feature	
5	Camera Demo	Feature	
6	Audio Codec Demo	Feature	
7	LTE Demo	Feature	
8	USB Hub Demo	Feature	
9	USB OTG as devices	Feature	
10	USB OTG as host	Feature	
11	Bluetooth	Feature	
12	EEPROM	Feature	
13	USER LED	Feature	
14	Low Power Expansion GPIO	Feature	
15	NOR Flash memory Demo	Feature	
16	Wi-Fi Demo	Feature	
17	CAN Interface Demo	Feature	
18	A2B Demo	Feature	
19	Zigbee Demo	Feature	
21	QT Chemical Plant demo	Feature	
22	QT Video HMI application demo	Feature	
23	ML and ARM NN Demos	Feature	
24	Alexa demo	Feature	
25	Live stream from AR0430 camera image sensor using AP1302 ISP in HDMI Display supporting following resolution: • 4MP (2316x1746) @30FPS	Feature	
26	Live stream from ARX3A0 camera image sensor using AP1302 ISP in HDMI Display supporting following resolution: • 600x600 @ 120FPS	Feature	
27	ISP Control feature – Identify resolution, FPS, and data format type of AP1302 ISP	Feature	
28	ISP Control feature - White balance on AP1302 ISP is supported	Feature	
29	ISP Control feature - Exposure on AP1302 ISP is supported	Feature	
30	ISP Control feature - Gain on AP1302 ISP is supported	Feature	
31	ISP Control feature - Contrast on AP1302 ISP is supported	Feature	
32	ISP Control feature - Brightness on AP1302 ISP is supported	Feature	

33	ISP Control feature - Saturation on AP1302 ISP is supported	Feature	
34	ISP Control feature - Gamma on AP1302 ISP is supported	Feature	
35	Live stream from AR1335 camera image sensor using AP1302 ISP in HDMI Display supporting following resolution: • 4208x3120 @ 10FPS	Feature	
36	Auto Focus support for AR1335	Feature	
37	Live stream from AR0830 camera image sensor using AP1302 ISP in HDMI Display supporting following resolution: • 3840x2160 @ 30FPS	Feature	

b. Known Issues

NA

c. For Product Delivery

NA

d. Applicable Accessories

NA

e. List of Documents Delivered/ Affected

Sr. No.	Document Name	Current Version
1	ei_User_Guide_IMX8M_Thor96_L5_10_Rel_4_3.pdf	4.3
2	ML_Demos_Guide_iMX8_L5_10_Rel_4_0.pdf	4.0
3	ei_Alexa_User_Manual_iMX8M_L5_10_52_Rel_2_0.pdf	2.0
4	ei_Camera_User_Guide_Thor96_L5_10_Rel_1_4.pdf	1.4
5	ei_OnSemiCamModule_96B_Thor96_TestCases.xls	1.4

4. Software and Hardware Tool Used

- Thor96 Development board
- SD Card
- 12V/5A Power adapter
- USB to UART Serial console cable
- Ethernet cable
- HDMI Display
- D3 OV5640 Mezzanine board
- Handsfree with Mic
- USB Pen Drive
- USB OTG cable
- CAN Cable
- LTE Mezzanine board
- Zigbee based door sensor
- SRT-Vision96-AR0430 mezzanine (AP-vision-AR0430-54)

- SRT-Vision96-ARX3A0 mezzanine (AP-vision-ARX3A0-55)
- SRT-Vision96-ARX3A0 mezzanine (AP-vision-AR1335-74)
- SRT-Vision96-AR0830 mezzanine (AP-vision-AR0830-83)

5. Dependencies and Restrictions

- Mezzanine DSI display board is not available on 96boards.org so it is not validated

6. Installation notes

Refer to the [Section 2.3](#) and [Section 2.4](#) of

[ei User Guide IMX8M Thor96 L5 10 Rel 4 3.pdf](#) to flash firmware image to SD Card for Thor96 board.

7. Test Environment

Refer to the [ei OnSemiCamModule_96B_Thor96_TestCases.xls](#) for all the Thor96 Test cases.

8. Recommendations for System Handling

Thor96 boards have to be used in ESD safe environment.