GoPoint for i.MX Applications Processors User Guide Rev. 11.0 — 11 April 2025

User guide

Document information

| Information | Content |
|-------------|---|
| Keywords | GoPoint, Linux demo, i.MX demos, MPU, ML, machine learning, multimedia, ELE, GoPoint for i.MX Applications Processors, i.MX Applications Processors |
| Abstract | This document explains how to run GoPoint for i.MX Applications Processors and details about the applications included in the launcher. |



GoPoint for i.MX Applications Processors User Guide

1 Introduction

GoPoint for i.MX Applications Processors is a user-friendly application that allows the user to launch preselected demonstrations included in the NXP provided Linux Board Support Package (BSP).

GoPoint for i.MX Applications Processors is for users who are interested in showcasing the various features and capabilities of NXP provided SoCs. The demos included in this application are meant to be easy to run for users of all skill levels, making complex use cases accessible to anyone. Users need some knowledge when setting up equipment on Evaluation Kits (EVKs), such as changing Device Tree Blob (DTB) files.

This user guide is intended for end users of GoPoint for i.MX Applications Processors. This document explains how to run GoPoint for i.MX Applications Processors and covers the applications included in the launcher.

2 Release information

GoPoint for i.MX Applications Processors is compatible with the i.MX family Linux BSP available at <u>IMXLINUX</u>. GoPoint for i.MX Applications Processors and it's included applications that are packaged alongside with it are included in binary demo files displayed on IMXLINUX.

Alternatively, users can include the GoPoint for i.MX Applications Processors and its applications, by including "packagegroup-imx-gopoint" in their Yocto images. This package is included in the "imx-full-image" package when the "fsl-imx-xwayland" distribution is selected on supported devices.

This document only covers information that is related to the Linux 6.12.3_1.0.0 release. For other releases, see the respective user guide for that release.

2.1 Supported devices

GoPoint for i.MX Applications Processors is supported on the devices listed in <u>Table 1</u>.

| i.MX 7 family | i.MX 8 family | i.MX 9 family |
|---------------|-----------------|---------------|
| i.MX 7ULP EVK | i.MX 8MQ EVK | i.MX 93 EVK |
| | i.MX 8MM EVK | i.MX 95 EVK |
| | i.MX 8MN EVK | |
| | i.MX 8QXPC0 MEK | |
| | i.MX 8QM MEK | |
| | i.MX 8MP EVK | |
| | i.MX 8ULP EVL | |

 Table 1. Supported devices

For information about the i.MX-based FRDM development boards and ports, see <u>https://github.com/nxp-imx-support/meta-imx-frdm/blob/lf-6.6.36-2.1.0/README.md</u>.

2.2 GoPoint applications release package

<u>Table 2</u> and <u>Table 3</u> list packages included in the GoPoint for i.MX Applications Processors release package. The specific applications vary between releases.

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Table 2. GoPoint framework

| Name | Branch |
|----------------------------|----------------------|
| nxp-demo-experience | lf-6.12.3_1.0.0 |
| meta-nxp-demo-experience | styhead-6.12.3-1.0.0 |
| nxp-demo-experience-assets | lf-6.12.3_1.0.0 |

Table 3. Application package dependencies

| Name | Branch/Commit |
|--------------------------------|--|
| nxp-demo-experience-demos-list | lf-6.12.3_1.0.0 |
| imx-ebike-vit | 6c5917c8afa70ed0ac832184f6b8e289cb740905 |
| imx-ele-demo | 2134feeef0c7a89b02664c97b5083c6a47094b85 |
| nxp-nnstreamer-examples | 5d9a7a674e5269708f657e5f3bbec206fb512349 |
| imx-smart-fitness | 5ac9a93c6c651e97278dffc0e2b979b3a6e16475 |
| smart-kitchen | 1f42aceae2e79f4b5c7cd29c169cc3ebd1fce78a |
| imx-video-to-texture | 5d55728b5c562f12fa9ea513fc4be414640eb921 |
| imx-voiceui | 5eac64dc0f93c755941770c46d5e315aec523b3d |
| imx-voiceplayer | ab1304afa7fa4ec4f839bbe0b9c06dadb2a21d25 |
| gtec-demo-framework | 1f512be500cecb392b24a154e83f0e7cd4655f3e |
| imx-gpu-viv | Closed source |

2.3 Applications provided by application packages

For documentation on each application, follow the link related to the application of interest.

| Table 4. | nxp-demo-experience-demos-list |
|----------|--------------------------------|
|----------|--------------------------------|

| Demo | Supported SoCs |
|-----------------------|--|
| ML Gateway | i.MX 8MM, i.MX 8MP, i.MX 93 |
| Selfie Segmenter | i.MX 8MP, i.MX 93 |
| ML Benchmark | i.MX 8MP, i.MX 93, i.MX 95 |
| Face Recognition | i.MX 8MP |
| DMS | i.MX 8MP, i.MX 93 |
| LP Baby Cry Detection | i.MX 93 |
| LP KWS Detection | i.MX 93 |
| Video Test | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 93 |
| Camera using VPU | i.MX 8MP |
| 2Way Video Streaming | i.MX 8MM, i.MX 8MP |
| Multi Cameras Preview | i.MX 8MP |
| ISP Control | i.MX 8MP |

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Table 4. nxp-demo-experience-demos-list...continued

| Demo | Supported SoCs |
|--------------|--------------------|
| Video Dump | i.MX 8MP |
| Audio Record | i.MX 7ULP |
| Audio Play | i.MX 7ULP |
| TSN 802.1Qbv | i.MX 8MM, i.MX 8MP |

Table 5. imx-ebike-vit

| Demo | Supported SoCs |
|------------|-----------------------------|
| E-Bike VIT | i.MX 8MM, i.MX 8MP, i.MX 93 |

Table 6. imx-ele-demo

| Demo | Supported SoCs |
|-------------------------|----------------|
| EdgeLock Secure Enclave | i.MX 93 |

Table 7. nxp-nnstreamer-examples

| Demo | Supported SoCs |
|----------------------|---|
| Image Classification | i.MX 8MM, i.MX 8MP, i.MX 8QMMEK, i.MX 93, i.MX 95 |
| Object Detection | i.MX 8MM, i.MX 8MP, i.MX 8QMMEK, i.MX 93, i.MX 95 |
| Pose Estimation | i.MX 8MM, i.MX 8MP, i.MX 8QMMEK, i.MX 93, i.MX 95 |

Table 8. imx-smart-fitness

| Demo | Supported SoCs |
|--------------------|-------------------|
| i.MX Smart Fitness | i.MX 8MP, i.MX 93 |

Table 9. smart-kitchen

| Demo | Supported SoCs |
|---------------|-----------------------------|
| Smart Kitchen | i.MX 8MM, i.MX 8MP, i.MX 93 |

Table 10. imx-video-to-texture

| Demo | Supported SoCs |
|-----------------------|----------------------|
| Video To Texture Demo | i.MX 8QMMEK, i.MX 95 |

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Table 11. imx-voiceui

| Demo | Supported SoCs |
|--------------------|--------------------|
| i.MX Voice Control | i.MX 8MM, i.MX 8MP |

Table 12. imx-voiceplayer

| Demo | Supported SoCs |
|------------------------|-----------------------------|
| i.MX Multimedia Player | i.MX 8MM, i.MX 8MP, i.MX 93 |

Table 13. gtec-demo-framework

| Demo | Supported SoCs |
|--------------------|--|
| Bloom | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 95 |
| Blur | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| EightLayerBlend | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| FractalShader | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| LineBuilder101 | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| Model Loader | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| S03_Transform | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| S04_Projection | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| S06_Texturing | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| Mapping | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |
| Mapping Refraction | i.MX 7ULP, i.MX 8MQ, i.MX 8MM, i.MX 8MN, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP, i.MX 95 |

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| Demo | Supported SoCs |
|------------------|--|
| Vivante Launcher | i.MX 7ULP, i.MX 8QXPC0MEK, i.MX 8QMMEK, i.MX 8MP, i.MX 8ULP |
| Cover Flow | i.MX 7ULP, i.MX 8ULP |
| Vivante Tutorial | i.MX 7ULP, i.MX 8ULP |

2.4 Changes in this release

· Bumped recipes to pick the latest software release

2.5 Known issues and workarounds

• MIPI-CSI cameras no longer work by default. For more information on how to start, see "chapter 7.3.8" in *i.MX Linux User's Guide* (document <u>IMXLUG</u>).

3 Launching applications

Applications that are included in GoPoint for i.MX Applications Processors can be launched via various interfaces.

3.1 Graphical user interface

On boards where GoPoint for i.MX Applications Processors is available, an NXP logo is displayed on the top left-hand corner of the screen. Users can start the demo launcher by clicking this logo.



Figure 1. GoPoint for i.MX Applications Processors logo

After opening the program, users can launch demos using the following options shown in Figure 2:

1. To filter the list, select the icon on the left to expand the filter menu. From this menu, users can select a category or subcategory that filters the demos displayed in the launcher.

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- 2. A scrollable list of all the demos supported on that EVK appears in this area with any filters applied. Clicking a demo in the launcher brings up information about the demo.
- 3. This area displays the names, categories, and description of the demos.
- Clicking Launch Demo launches the currently selected demo. A demo can then be force-quit by clicking the Stop current demo button in the launcher (appears once a demo is started).
 Note: Only one demo can be launched at a time.



3.2 Text user interface

Demos can also be launched from the command line through log-in into the board remotely or using the onboard serial debug console. Remember that most demos still require a display to run successfully.

Note: If prompted for a login, the default user name is "root" and no password is required.

To start the text user interface (TUI), type the following command into the command line:

```
# gopoint tui
```

The interface can be navigated using the following keyboard inputs:

- Up and down arrow keys: Select a demo from the list on the left
- Enter key: Runs the selected demo
- Q key or Ctrl+C keys: Quit the interface
- H key: Opens the help menu

Demos can be closed by closing the demo onscreen or pressing the "Ctrl" and "C" keys at the same time.

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| NYD Dome Experience | |
|-----------------------|--|
| | |
| Object Classification | Object Classification |
| Object Detection | |
| Pose Detection | An example of how to use NNStreamer to classify objects in a video |
| Brand Detection | or camera feed. An internet connection may be required. |
| ML Gateway | |
| Face Recognition | |
| Video Test Demo | |
| Camera using VPU | |
| Multi Cameras Preview | |
| ISP Control Demo | |
| Video Dump Demo | |
| i.MX Voice Control | |
| Vivante Launcher | |
| Bloom | |
| Blur | |
| EightLayerBlend | |
| FractalShader | |
| LineBuilder101 | Press Enter to launch |
| | |
| ———— Page 1 of 2 ———— | H - Help |
| | |

Figure 3. Text user interface

4 References

The references used to supplement this document are as follows:

- 8-microphone array board: <u>8MIC-RPI-MX8</u>
- Embedded Linux for i.MX Applications Processors: IMXLINUX
- *i.MX Yocto Project User Guide* (document <u>IMXLXYOCTOUG</u>)
- *i.MX Linux User's Guide* (document IMXLUG)
- i.MX 8MIC-RPI-MX8 Board Quick Start Guide (document <u>IMX-8MIC-QSG</u>)
- i.MX 8M Plus Gateway for Machine Learning Inference Acceleration (document AN13650)
- TSN 802.1Qbv Demonstration using i.MX 8M Plus (document AN13995)

5 Note about the source code in the document

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6 Revision history

Table 15 summarizes the revisions to this document.

| Revision number | Release date | Description |
|-----------------|-------------------|---|
| GPNTUG v.11.0 | 11 April 2025 | Updated <u>Section 1 "Introduction"</u> Added <u>Section 2 "Release information"</u> Updated <u>Section 3 "Launching applications"</u> Updated <u>Section 4 "References"</u> |
| GPNTUG v.10.0 | 30 September 2024 | Added i.MX E-Bike VIT Updated <u>References</u> |
| GPNTUG v.9.0 | 8 July 2024 | Added <u>Security</u> |
| GPNTUG v.8.0 | 11 April 2024 | Updated <u>NNStreamer demos</u> Updated <u>Object classification</u> Updated <u>Object detection</u> Removed section "Brand detection" Updated <u>Machine learning gateway</u> Updated <u>Driver monitoring system demo</u> Updated <u>Selfie segmenter</u> Added <u>i.MX smart fitness</u> Added Low-power machine learning demo |
| GPNTUG v.7.0 | 15 December 2023 | Updated for the 6.1.55_2.2.0 release Rename from NXP Demo Experience to GoPoint for i.MX Applications Processors Added <u>2Way video streaming</u> |
| GPNTUG v.6.0 | 30 October 2023 | Updated for the 6.1.36_2.1.0 release |
| GPNTUG v.5.0 | 22 August 2023 | Added i.MX multimedia player |
| GPNTUG v.4.0 | 28 June 2023 | Added TSN 802.1 Qbv demo |
| GPNTUG v.3.0 | 07 December 2022 | Updated for 5.15.71 release |
| GPNTUG v.2.0 | 16 September 2022 | Updated for 5.15.52 release |
| GPNTUG v.1.0 | 24 June 2022 | Initial release |

Table 15. Revision history

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