Qualcomm Technologies, Inc.

Qirp Sdk 2.0 Release Notes

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April 9, 2025

Contents

1 Robotics SDK2.2.0 April, 2025

1.1 Release information

Followings are the basic information for this release of Qualcomm® Intelligent Robotics Product (QIRP) SDK:

Table : QIRP SDK version

SDK name	Version	Release date
QIRP SDK	2.2.0	April, 2025

Table : QIRP SDK release tags for GitHub workflow

Project	Release tag	Identifier
Qualcomm Linux	Firmware release tag	`r1.0_00075.0`
	Manifest release tag	`qcom-6.6.65-QLI.1.4-Ver.1.1`
Robotics	`robotics-release-manifest`	`qcom-6.6.65-QLI.1.4-Ver.1.1_robotics-product-sdk-1.1.xml`
	`meta-qcom-robotics-extras-release-tag`	`r1.0_00077.0`

Table : QIRP release tags for QSC Launcher and QSC-CLI

Product	Release ID (`--release`)	Build ID (`--build`)
QCM6490.LE.1.0	`r00349.1`	`QCM6490.LE.1.0-00349-STD.PROD-1`
QCS9100.LE.1.0	`r00214.2`	`QCS9100.LE.1.0-00214-STD.PROD-2`
QCS8300.LE.1.0	`r00110.1`	`QCS8300.LE.1.0-00110-STD.PROD-1`

Prebuilt-package

- Qualcomm Dragonwing™ RB3 Gen 2 Vision Development Kit:
  - RB3 Gen 2 Vision Development Kit x86 image
  - RB3 Gen 2 Vision Development Kit Arm® image
- Qualcomm Dragonwing™ IQ-9075 Evaluation Kit:
  - IQ-9075 Evaluation Kit x86 image
  - IQ-9075 Evaluation Kit Arm® image
- Qualcomm® IQ-8 Beta Evaluation Kit: Not applicable for this release.

Contents of prebuilts

- **Robotics image**: An image based on the Qualcomm Linux release with the Robot Operating System (ROS) core packages added and the QIRP SDK included by default. You can directly use the robotics image to get an out-of-the-box experience.
- **QIRP SDK**: Provides not only a runtime installation package with the out-of-the-box experience, but also a cross-compilation toolchain. Using that toolchain, you can quickly develop applications based on the sample code.
- **Robotics eSDK**: Provides the Yocto toolchain for building the robotics image.

1.2 Contents of release

This release includes the following:

The Qualcomm® Intelligent Robotics Product (QIRP) SDK

- To get started with the QIRP SDK, see QIRP Quick Start, which helps you set up the host environment and try out the sample applications with the prebuilt robotics image and QIRP SDK.
- For advanced usage, see Build and install, which provides the steps to use QSC-CLI, QSC Launcher, and GitHub workflows to build and install the QIRP SDK.
- For procedures such as developing a robotics application, see the Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.0 User Guide.

1.3 New features

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.2.0

- Supports the dual Orbbec Gemini 335 RGBd cameras.

- Supports the color space conversion ROS node.
- Supports the ROS package for zero-copy message transport.
- Supports ROS2 core Jazzy.

1.4 Sample applications

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.2.0

For a complete list of sample applications of QIRP SDK, see QIRP samples list.

1.5 Limitations

Some of the functions or samples in this SDK require a robot chassis to be activated during testing, or a keyboard to control the movement of a robot. To use those functions and samples, you must have your own mobile robot. For details, see QIRP SDK sample applications.

2 Robotics SDK2.1.2 Dec. 31, 2024

2.1 Release information

Followings are the basic information for this release of Qualcomm® Intelligent Robotics Product (QIRP) SDK:

Table : QIRP SDK version

SDK name	Version	Release date
QIRP SDK	2.1.2	December 31, 2024

Table : QIRP SDK release tags for GitHub workflow

Project	Release tag	Identifier
Qualcomm Linux	Firmware release tag	`r1.0_00058.0`
	Manifest release tag	`qcom-6.6.52-QLI.1.3-Ver.1.1`
Robotics	`robotics-release-manifest`	`qcom-6.6.65-QLI.1.4-Ver.1.1_robotics-product-sdk-1.1.xml`
	`meta-qcom-robotics-extras-release-tag`	`r1.0_00059.0`

Table : QIRP release tags for QSC Launcher and QSC-CLI

Product	Release ID (`--release`)	Build ID (`--build`)
QCM6490.LE.1.0	`r00321.1`	`QCM6490.LE.1.0-00321-STD.PROD-1`
QCS9100.LE.1.0	`r00178.1`	`QCS9100.LE.1.0-00178-STD.PROD-1`

Prebuilt-package

- RB3 Gen 2 Vision Development Kit:
  - Qualcomm® RB3 Gen 2 Vision Development Kit x86 image
  - Qualcomm® RB3 Gen 2 Vision Development Kit Arm® image
- IQ-9 Beta Evaluation Kit: Not applicable for this release.

Contents of prebuilts

- **Robotics image**: An image based on the Qualcomm Linux release with the Robot Operating System (ROS) core packages added and the QIRP SDK included by default. You can directly use the robotics image to get an out-of-the-box experience.
- **QIRP SDK**: Provides not only a runtime installation package with the out-of-the-box experience, but also a cross-compilation toolchain. Using that toolchain, you can quickly develop applications based on the sample code.
- **Robotics eSDK**: Provides the Yocto toolchain for building the robotics image.

2.2 Contents of release

This release includes the following:

The Qualcomm® Intelligent Robotics Product (QIRP) SDK

- To get started with the QIRP SDK, see QIRP Quick Start, which helps you set up the host environment and try out the sample applications with the prebuilt robotics image and QIRP SDK.
- For advanced usage, see Build and install, which provides the steps to use QSC-CLI, QSC Launcher, and GitHub workflows to build and install the QIRP SDK.
- For procedures such as developing a robotics application, see the Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.0 User Guide.

2.3 New features

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.1.2

None for this release.

2.4 Sample applications

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.1.2

For a complete list of sample applications of QIRP SDK, see QIRP samples list.

2.5 Limitations

Some of the functions or samples in this SDK require a robot chassis to be activated during testing, or a keyboard to control the movement of a robot. To use those functions and samples, you must have your own mobile robot. For details, see QIRP SDK sample applications.

3 Robotics SDK2.1.1 Sept. 30, 2024

3.1 Release information

Followings are the basic information for this release of Qualcomm® Intelligent Robotics Product (QIRP) SDK:

Table : QIRP SDK version

SDK name	Version	Release date
QIRP SDK	2.1.1	September 30, 2024

Table : QIRP SDK release tags for GitHub workflow

Project	Release tag	Identifier
Qualcomm Linux	Firmware release tag	`r1.0_00049.0`
	Manifest release tag	`qcom-6.6.38-QLI.1.2-Ver.1.1`
Robotics	`robotics-release-manifest`	`qcom-6.6.38-QLI.1.2-Ver.1.1_robotics-product-sdk-1.1.xml`
	`meta-qcom-robotics-extras-release-tag`	`r1.0_00050.0`

Table : QIRP release tags for QSC Launcher and QSC-CLI

Product	Release ID (`--release`)	Build ID (`--build`)
QCM6490.LE.1.0	`r00270.1`	`QCM6490.LE.1.0-00270-STD.PROD-1`
QCS9100.LE.1.0	`r00099.1`	`QCS9100.LE.1.0-00099-STD.PROD-1`

Prebuilt-package

- RB3 Gen 2 Vision Devlopment Kit:
  - Qualcomm® RB3 Gen 2 Vision Development Kit x86 image
  - Qualcomm® RB3 Gen 2 Vision Development Kit Arm® image
- IQ-9 Beta Evaluation Kit: Not applicable for this release.

Contents

- **Robotics image**: An image based on the Qualcomm Linux release with the Robot Operating System (ROS) core packages added and the QIRP SDK included by default. You can directly use the robotics image to get an out-of-the-box experience.
- **QIRP SDK**: Provides not only a runtime installation package with the out-of-the-box experience, but also a cross-compilation toolchain. Using that toolchain, you can quickly develop applications based on the sample code.
- **Robotics eSDK**: Provides the Yocto toolchain for building the robotics image.

3.2 Contents of release

This release includes the following:

The Qualcomm® Intelligent Robotics Product (QIRP) SDK

- To get started with the QIRP SDK, see QIRP Quick Start, which helps you set up the host environment and try out the sample applications with the prebuilt robotics image and QIRP SDK.
- For advanced usage, see Build and install, which provides the steps to use QSC-CLI, QSC Launcher, and GitHub workflows to build and install the QIRP SDK.
- For procedures such as developing a robotics application, see the Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.0 User Guide

3.3 New features

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.1.1

- **IQ-9 Beta Evaluation Kit (QCS9075)**
  - ROS core enablement
- **Qualcomm® RB3 Gen2 Vision Development Kit (QCS6490)**

  None for this release.

3.4 Sample applications

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.1.1

For a complete list of sample applications of QIRP SDK, see QIRP samples list.

3.5 Limitations

Some of the functions or samples in this SDK require a robot chassis to be activated during testing, or a keyboard to control the movement of a robot. To use those functions and samples, you must have your own mobile robot. For details, see QIRP SDK sample applications.

4 Robotics SDK2.1.0 June 28, 2024

4.1 Release information

Followings are the basic information for this release of Qualcomm® Intelligent Robotics Product (QIRP) SDK:

SDK name	Version	Release date
QIRP SDK	2.1.0	June 28, 2024

Table : Release tags

Project	Release tag	Identifier
Qualcomm Linux	Firmware release tag	r1.0_00039.2
	Manifest release tag	qcom-6.6.28-QLI.1.1-Ver.1.1.xml
Robotics	robotics-release-manifest	qcom-6.6.28-QLI.1.1-Ver.1.1_ robotics-product-sdk-1.1
	meta-qcom-robotics-extras-release-tag	r1.0_00041.0

Prebuilt-package

Prebuilt QIRP SDK package

Contents

- **Robotics image**: An image based on the Qualcomm Linux release with the ROS core packages added and the QIRP SDK included by default. You can directly use the robotics image to get an out-of-the-box experience.
- **QIRP SDK**: Provides not only a runtime installation package with the out-of-the-box experience, but also a cross-compilation toolchain. Using that toolchain, you can quickly develop application based on the sample code.
- **Robotics eSDK**: Provides the Yocto toolchain for building the robotics image.

4.2 Contents of release

This release includes the following:

The Robotics Product SDK:

- To get started with the Robotics SDK, see QIRP Quick Start, which helps you set up the host environment and try out the sample applications with prebuilt robotics image and QIRP SDK.
- For advanced usage, see Build and install, which provides the steps to use QSC-CLI, QSC Launcher, and GitHub workflows to build and install the QIRP SDK.
- For procedures such as developing a robotics application, see the Qualcomm® Linux Intelligent Robotics Product Software Development Kit (QIRP SDK) 2.0 User Guide

4.3 New features

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.1.0

- Implemented VIO based on mono and IMU sensor
- Enabled support for the camera ROS node

4.4 Sample applications

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.1.0

For a complete list of sample applications of QIRP SDK, see QIRP samples list.

4.5 Limitations

Some of the functions or samples in this SDK require a robot chassis to be activated during testing, or a keyboard to control the movement of a robot. To use those functions and samples, you must have your own mobile robot. For details, see QIRP SDK sample applications.

5 Robotics SDK2.0.0 March 29, 2024

5.1 Release information

Followings are the basic information for this release of Qualcomm® Intelligent Robotics Product (QIRP) SDK:

SDK name	Version	Release date
QIRP SDK	2.0.0	June 28, 2024

Release project	Identifier
qcom-manifest	qcom-6.6.17-QLI.1.0-Ver.1.4-robotics-product-sdk-1.1.xml
meta-qcom-robotics-extras	r1.0_00030.0
meta-ros	LE.QCROBOTICS.1.0.r1-04800-K2C.0
meta-qcom-robotics	qcom-6.6.17-QLI.1.0-Ver.1.4-robotics-product-sdk-1.1
meta-qcom-robotics-distro	qcom-6.6.17-QLI.1.0-Ver.1.4-robotics-product-sdk-1.1
meta-qcom-robotics-sdk	qcom-6.6.17-QLI.1.0-Ver.1.4-robotics-product-sdk-1.1

5.2 Contents of release

This release includes the following:

The Robotics Product SDK:

- For a quick start, refer to Qualcomm® Linux Intelligent Robotics Product Software Development Kit (QIRP SDK) 2.0 User Guide. This guide contains information to help you get started with the Robotics SDK, including information about system software and hardware requirements and external software dependencies that you must install before using the SDK.

5.3 New features

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.0.0

- Implemented ROS2 Core Jazzy, IMU ROS node, 2D lidar ROS node, ROS2 navigation, OCR ROS node, Battery ROS node and System Monitor ROS node
- Supporting Intel RealSenseTM (D455)
- Implemented VSLAM with mono sensor
- Enhanced VSLAM with depth sensor as well as voxel map and point cloud
- Implemented auto mapping with 2D lidar

5.4 Sample applications

Qualcomm® Intelligent Robotics Product (QIRP) SDK 2.0.0

- IMU ROS node: demonstrating the usage of sensor-client to get the IMU data from the DSP side with a zero-copy way.
- Battery ROS node: demonstrating how to use the battery client to get battery status data with high performance
- OCR ROS node: Optical Character Recognition service powered by Tesseract and communicated with ROS
- System monitor ROS node: demonstrating publishing system information with the ROS message
- GPIO Sample app: demonstrating controlling LED/GPIO/PWM, catching the GPIO IRQ events, and getting SoC temperature in the user space.

5.5 Limitations

Some of the functions or samples in this SDK require a robot chassis to be activated during testing, or a keyboard to control the movement of a robot. To use those functions and samples, you must have your own mobile robot.

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