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Qualcomm Technologies, Inc.

00077.0 Release Note for Qualcomm_Linux.SPF.1.0

Release Notes

Qualcomm_Linux.SPF.1.0

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1. Introduction

This Qualcomm® Linux release enables multimedia, AI, graphics, connectivity, peripheral drivers for Yocto scarthgap and Linux 6.6 kernel.

Qualcomm Linux is a single Linux distribution supporting multiple SOCs. The distribution includes the UEFI bootloader, LTS kernel (6.6), Yocto, and selected drivers for a consistent developer interface across all targets. Upstream open-source software (OSS) is used extensively. Patched upstream and downstream drivers are used where necessary for compatibility, performance and functionality. The Qualcomm software stack supports all the processors, subsystems, and components in the platform including the CPU, GPU, VPU, DPU, NPU, PMICs, and so on.

This document contains information about the release contents, supported features, known issues, and limitations in this release.

1.1 Release information

IQ9: represents IQ-9075/IQ-9100 SoCs and derivatives.

IQ8: represents IQ-8275/IQ-8300 SoCs and derivatives.

IQ6: represents IQ-615 SoCs and derivatives.

Table 1.1 Software version

Software	Version
Yocto	Scarthgap 5.0.6
Kernel	6.6.65

Table 1.2 Supported platforms

SoC	Quality
QCS6490	GA
QCS5430	GA
IQ9	Beta
IQ8	Beta
IQ6	Beta

Note: This release has limited support for the IQ6 platform (`base` variant). For details about the IQ6 release, see IQ615 Software User Guide.

2. New Features

Qualcomm Linux:

- Yocto is upgraded to scarthgap
- Switched to upstream GBM (Generic Buffer management) display and graphics buffer management.
- Supports smart GOP (Group Of Pictures)
- Supports Adaptive Clock Distribution (ACD)
- Supports the Chromium open-source browser. Please follow below link for how to
  - enable Chromium browser
- Enabled X11 application support through XWayland.
- Enabled QT6 support. For details, see https://doc-snapshots.qt.io/boot2qt-dev/b2qt-qsg-qualcomm.html.
- IQ-9075 Evaluation Kit (EVK) - base variant support enabled
- Some components like GBM and display drivers have migrated to pure upstream variants. For more details and impacts, see Qualcomm Linux Migration Guide.

QCS6490/5430:

- Display stack switched to upstream
- Support for stacking of QPS615 modules
- Enabled eDP 1.4 on downstream display driver.

IQ9:

- Concurrent GMSL cameras along with YUV GMSL sensor
- Supports multiple OV9282 camera sensors on IQ-9075 EVK
- Supports for QNN HTP multicore
- Added FreeRTOS based SAIL firmware support for unregistered users

IQ8:

- Enabled features supported on legacy targets.

IQ6:

- Concurrent dual display

- **Qualcomm® Intelligent Multimedia Product Software Development Kit (QIMP SDK)**: Qualcomm Intelligent Multimedia Product SDK (QIMP SDK) New Features
- **Qualcomm® Linux Intelligent Robotics Product Software Development Kit (QIRP SDK)**: Qualcomm® Linux Intelligent Robotics Product SDK (QIRP SDK) New Features

3. Reference design kits

This Qualcomm Linux release supports these reference design kits.

Applicable SoCs	Reference kit
QCS6490	Qualcomm Dragonwing™ RB3 Gen 2 Vision Development Kit
	Qualcomm Dragonwing™ RB3 Gen 2 Core Development Kit
QCS5430	Qualcomm Dragonwing™ RB3 Gen 2 Lite Vision Development Kit
	Qualcomm Dragonwing™ RB3 Gen 2 Lite Core Development Kit
IQ9	Qualcomm Dragonwing™ IQ-9075 EVK IQ9 Beta EVK
IQ8	IQ8 Beta EVK
IQ6	IQ6 Beta EVK

4. Sync and build methods

Table 3.1: Sync and build methods

Methods	Applicability			
	QCS6490	QCS5430	IQ9	IQ8
Build with QSC Launcher	Y	Y	Y	Y
Build with QSC CLI	Y	Y	Y	Y
GitHub workflow for unregistered users	Y	Y	Y	N
GitHub workflow for registered users	Y	Y	Y	Y
GitHub workflow (firmware and extras)	Y	Y	Y	Y

5. Build-critical release tags

GitHub workflow related release tags

The GitHub workflow requires the following release tags to download this software release.

Table 4.1 : Release tags for GitHub workflow

Release tag	Identifier
Manifest release tag	qcom-6.6.65-QLI.1.4-Ver.1.1
Firmware release tag	r1.0_00075.0
meta-qcom-extras release tag	r1.0_00077.0
meta-qcom-qim-product-sdk release tag	qcom-6.6.65-QLI.1.4-Ver.1.1_qim-product-sdk-1.1.2
Realtime Linux release tag	qcom-6.6.65-QLI.1.4-Ver.1.1_realtime-linux-1.1
Robotics manifest release tag	qcom-6.6.65-QLI.1.4-Ver.1.1_robotics-product-sdk-1.1.xml

Table 4.2 : `MACHINE` and `QCOM_SELECTED_BSP` **parameter value**

Note: `QCOM_SELECTED_BSP` defaults to **custom**.

SoC	Reference kit	MACHINE	QCOM_SELECTED_BSP	
			Custom	Base
QCS6490	RB3 Gen 2 Core Development Kit	qcs6490-rb3gen2-core-kit	Y	N
	RB3 Gen 2 Vision Development Kit	qcs6490-rb3gen2-vision-kit		
QCS5430	RB3 Gen 2 Lite Core Development Kit	qcs6490-rb3gen2-core-kit	Y	N
	RB3 Gen 2 Lite Vision Development Kit	qcs6490-rb3gen2-vision-kit		
IQ9	IQ9 Beta EVK	qcs9100-ride-sx	Y	Y
		qcs9075-ride-sx	Y	Y
	Dragonwing™ IQ-9075 EVK	qcs9075-rb8-core-kit	Y	Y
IQ8	IQ8 Beta EVK	qcs8300-ride-sx	Y	Y
IQ6	IQ6 Beta EVK	qcs615-adp-air	N	Y

Note: For Qualcomm Linux 1.2 and future releases, you must use the new machine configuration files listed in the following table. The previous machine configuration file **`qcm6490.conf`** from Qualcomm Linux 1.1 has been replaced.

QSC-CLI Workflow related release tags

Apart from a GitHub-based workflow, Qualcomm also provides a single-click solution to download releases using the Qualcomm® Software Center command-line interface (QSC-CLI), which requires a registered user ID.

Table 4.3 : QSC-CLI input parameters

Parameter	--product For <**Product_ID**>	--release For <**release**>	--image For <**software_image_name** >	--distribution
Values	QCM6490.LE.1.0	**r00349.1**	LE.QCLINUX.1.0.r1	See Table 4.4
			ADSP.HT.5.5.c8	
			CDSP.HT.2.5.c3	
			AOP.HO.3.6	
			BOOT.MXF.1.0.c1	
			TZ.XF.5.29	
	QCS9100.LE.1.0	**r00214.2**	LE.QCLINUX.1.0.r1	
			DSP.AT.1.0.1	
			AOP.HO.3.6.1	
			BOOT.MXF.1.0.c1	
			TZ.XF.5.29.1	
	QCS8300.LE.1.0	**r00110.1**	LE.QCLINUX.1.0.r1	
			DSP.AT.1.0.1	
			AOP.HO.3.6.1	
			BOOT.MXF.1.0.c1	
			TZ.XF.5.29.1	

Distribution :

Access to software sources from Qualcomm is controlled using Distributions and they become available for download based on users/organizations for their specific access levels/licensing.

The following table describes the Yocto meta-layers that are used to create these distributions. Some of the layers need additional access.

Table 4.4 : Access controlled distribution (--distribution)

User profile	Distribution	Mapping Yocto layer	Description	Target usage	Applicability (Table 4.5 lists the default QSC parameter values for LE.QCLINUX.1.0.r1)			
					QCS6490	QCS5430	IQ9	IQ8
Public developer (unregistered)	Qualcomm_Linux.SPF.1.0|TEST|DEVICE|PUBLIC	meta-qcom meta-qcom-hwe meta-qcom-distro	High level OS and pre-built firmware (No modem)	Developers building for no modem with pre-built firmware	Y	Y	Y	N
	Qualcomm_Linux.SPF.1.0|TEST|DEVICE|PB_QIMPSDK	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-qim-product-sdk	High level OS and prebuilt firmware (No modem) with Qualcomm Intelligent Multimedia SDK as add-on software	Multimedia and AI Edge offerings.	Y	Y	Y	N
	Qualcomm_Linux.SPF.1.0|TEST|DEVICE|PB_QIRPSDK	meta-qcom meta-qcom-hwe meta-qcom-distro meta-ros meta-qcom-robotics meta-qcom-robotics-distro meta-qcom-robotics-sdk meta-qcom-qim-product-sdk	High level OS and pre-built firmware (No modem) with Qualcomm Intelligent Robotics SDK as add-on software.	Multimedia and Robotics/ROS/Vision offerings.	Y	Y	Y	N

User profile	Distribution	Mapping Yocto layer	Description	Target usage	Applicability (Table 4.5 lists the default QSC parameter values for LE.QCLINUX.1.0.r1)			
					QCS6490	QCS5430	IQ9	IQ8
Licensed developer with Authorized access.	Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|NoModem	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-extras	High level OS and firmware in source without modem.	Developers building no modem firmware with HLOS	Y	Y	Y	Y
	Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|NM_QIMPSDK	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-extras meta-qcom-qim-product-sdk meta-qcom-robotics-distro meta-qcom-robotics-sdk meta-qcom-qim-product-sdk	High level OS and firmware (No modem) in source with Qualcomm Intelligent Multimedia SDK as add-on software.	Developers building firmware and need Multimedia and AI Edge based products.	Y	Y	Y	Y
	Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|NM_QIRPSDK	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-extras meta-qcom-robotics-extras meta-ros meta-qcom-robotics meta-qcom-robotics-distro meta-qcom-robotics-sdk meta-qcom-qim-product-sdk	High level OS and firmware(No modem) in source with Qualcomm Intelligent Robotics SDK as add-on software.	Developers building firmware and need Multimedia and Robotics/ROS/Vision based products.	Y	Y	Y	Y
Licensed developers (contact Qualcomm for access)	Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-extras	High level OS and firmware(GPS only) source without additional SDK add-ons.	Developers building firmware with GPS chipsets.	Y	Y	N	N
	Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|QIMPSDK	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-extras meta-qcom-qim-product-sdk	High level OS and firmware (GPS only) source with Qualcomm Intelligent Multimedia SDK as add-on software.	Developers building firmware with GPS chipsets and need Multimedia and AI Edge based products.	Y	Y	N	N
	Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|QIRPSDK	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-extras meta-qcom-robotics-extras meta-ros meta-qcom-robotics meta-qcom-robotics-distro meta-qcom-robotics-sdk meta-qcom-qim-product-sdk	High level OS and firmware (GPS only) in source with Qualcomm Intelligent Robotics SDK as add-on software.	Developers building firmware with GPS chipsets and need Multimedia and Robotics/ROS/Vision based products.	Y	Y	N	N
	Qualcomm_Linux.SPF.1.0|AMSS|Standard|OEM|	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-extras	High Level OS and Firmware(with Full modem) source without additional SDK add-ons.	Developers building firmware with full modem.	Y	Y	N	N
	Qualcomm_Linux.SPF.1.0|AMSS|Standard|OEM|QIMPSDK	meta-qcom meta-qcom-hwe meta-qcom-distro meta-qcom-extras meta-qcom-qim-product-sdk	High Level OS and Firmware (Full modem) source with Qualcomm Intelligent Multimedia SDK as add-on software.	Developers building firmware with full modem and need Multimedia and AI Edge based products.	Y	Y	N	N

Table 4.5 : Default values of "MACHINE" and "QCOM_SELECTED_BSP" parameters for QSC

Chipset	Reference kit	MACHINE	QCOM_SELECTED_BSP
QCS6490/QCS5430	Dragonwing RB3 Gen 2 Vision Development Kit Dragonwing RB3 Gen 2 Lite Vision Development Kit	qcs6490-rb3gen2-vision-kit	Custom
QCS9100	IQ-9 Beta EVK	qcs9100-ride-sx	Custom
QCS8300	IQ-8 Beta EVK	qcs8300-ride-sx	Custom

6. Release Specific Information

Product Version Info

Product	Version
QCM6490.LE.1.0	QCM6490.LE.1.0-00349-STD.PROD-1
QCS9100.LE.1.0	QCS9100.LE.1.0-00214-STD.PROD-2
QCS8300.LE.1.0	QCS8300.LE.1.0-00110-STD.PROD-1

CDT:

SOC	Reference Kit	CDT download link
QCS6490	Dragonwing RB3 Gen 2 Core Development Kit	https://artifacts.codelinaro.org/artifactory/codelinaro-le/Qualcomm_Linux/QCS6490/cdt/rb3gen2-core-kit.zip
	Dragonwing RB3 Gen 2 Vision Development Kit	https://artifacts.codelinaro.org/artifactory/codelinaro-le/Qualcomm_Linux/QCS6490/cdt/rb3gen2-vision-kit.zip
QCS5430	Dragonwing RB3 Gen 2 Lite Core Development Kit	https://artifacts.codelinaro.org/artifactory/codelinaro-le/Qualcomm_Linux/QCS6490/cdt/rb3gen2-core-kit.zip
	Dragonwing RB3 Gen 2 Lite Vision Development Kit	https://artifacts.codelinaro.org/artifactory/codelinaro-le/Qualcomm_Linux/QCS6490/cdt/rb3gen2-vision-kit.zip
IQ9	IQ-9 Beta EVK	https://artifacts.codelinaro.org/artifactory/codelinaro-le/Qualcomm_Linux/QCS9100/cdt/ride-sx.zip
	Dragonwing IQ-9075 EVK	https://artifacts.codelinaro.org/ui/native/codelinaro-le/Qualcomm_Linux/QCS9100/cdt/rb8_core_kit.zip
IQ8	IQ-8 Beta EVK	https://artifacts.codelinaro.org/artifactory/codelinaro-le/Qualcomm_Linux/QCS8300/cdt/ride-sx.zip

UFS provision:

SOC	Re-Provisioning	Provision download link	Provision file
QCS6490	Applicable for devices moving from Qualcomm Linux 1.2 or previous releases to Qualcomm Linux 1.3 or later	QCS6490-provision.zip	provision_1_3.xml
IQ9	Applicable for devices moving from Qualcomm Linux 1.1 or previous to Qualcomm Linux 1.2 or later	QCS9100-provision.zip	provision_1_2.xml
IQ8	Not applicable	QCS8300-provision.zip	provision_1_3.xml

7. Upgrade Process

Upgrade Process

Qualcomm recommends the following path to migrate the Qualcomm Linux baseline to GA 1.4.

Base release	Target release	Method
GA 1.2 and earlier	GA 1.4	Factory flash followed by CDT and UFS provisioning
GA 1.3	GA 1.4	OTA

NOTE : It is mandatory to update NHLOS and HLOS while migrating from 1.3 to 1.4 build using OTA

The behaviors and capabilities of some components have changed from earlier releases. For details, see the Qualcomm Linux Migration Guide.

8. Prebuilt flashable images along with eSDK

Pre-built binaries along with eSDK of this release are hosted in our software releases archives on CodeLinaro.

The eSDK is an installer generated from the final image including the SDKs. It provides a complete Yocto environment that allows you to synchronize, modify, compile, and install applications and open-source plugins.

For more information, see RB3 Gen 2 Quick Start Guide.

Table 6.1: Artifactory links to pre-built flashable images and eSDK

Distribution	Flashable binaries download link	Description	Chipset	Kits name	MACHINE	Host architecture	Release tag	Build ID	Flash path
QIMP SDK	QIMP SDK flashable image for Arm-RB3-gen2-core-kit	Software built on Arm host for RB3 Gen 2 Core. It comes with multimedia applications	QCS6490	RB3 Gen 2 Core Development Kit	qcs6490-rb3gen2-core-kit	Arm	r00349.1	QCM6490.LE.1.0-00349-STD.PROD-1	<extracted zip directory path>\target\qcs6490-rb3gen2-core-kit\qcom-multimedia-image
			QCS5430	RB3 Gen 2 Lite Core Development Kit					
QIMP SDK	QIMP SDK flashable image for x86-RB3-gen2-core-kit	Software built on X86 host for RB3 Gen 2 Core. It comes with multimedia applications	QCS6490	RB3 Gen 2 Core Development Kit	qcs6490-rb3gen2-core-kit	x86	r00349.1	QCM6490.LE.1.0-00349-STD.PROD-1	<extracted zip directory path>\target\qcs6490-rb3gen2-core-kit\qcom-multimedia-image
			QCS5430	RB3 Gen 2 Lite Core Development Kit					
QIMP SDK	QIMP SDK flashable image for Arm-RB3-gen2-vision-kit	Software built on Arm host for RB3 Gen 2 Vision. It comes with multimedia applications	QCS6490	RB3 Gen 2 Vision Development Kit	qcs6490-rb3gen2-vision-kit	Arm	r00349.1	QCM6490.LE.1.0-00349-STD.PROD-1	<extracted zip directory path>\target\qcs6490-rb3gen2-vision-kit\qcom-multimedia-image
			QCS5430	RB3 Gen 2 Lite Vision Development Kit					
QIMP SDK	QIMP SDK flashable image for x86-RB3-gen2-vision-kit	Software built on X86 host for RB3 Gen 2 Vision. It comes with multimedia applications	QCS6490	RB3 Gen 2 Vision Development Kit	qcs6490-rb3gen2-vision-kit	x86	r00349.1	QCM6490.LE.1.0-00349-STD.PROD-1	<extracted zip directory path>\target\qcs6490-rb3gen2-vision-kit\qcom-multimedia-image
			QCS5430	RB3 Gen 2 Lite Vision Development Kit					
QIRP SDK	QIRP SDK flashable image for Arm-RB3-gen2-vision-kit	Software built on Arm host for RB3 Gen 2 Vision. It comes with Robotic applications	QCS6490	RB3 Gen 2 Vision Development Kit	qcs6490-rb3gen2-vision-kit	Arm	r00349.1	QCM6490.LE.1.0-00349-STD.PROD-1	<extracted zip directory path>\target\qcs6490-rb3gen2-vision-kit\qcom-robotics-full-image
			QCS5430	RB3 Gen 2 Lite Vision Development Kit					
QIRP SDK	QIRP SDK flashable image for x86-RB3-gen2-vision-kit	Software built on X86 host for RB3 Gen 2 Vision. It comes with Robotic applications	QCS6490	RB3 Gen 2 Vision Development Kit	qcs6490-rb3gen2-vision-kit	x86	r00349.1	QCM6490.LE.1.0-00349-STD.PROD-1	<extracted zip directory path>\target\qcs6490-rb3gen2-vision-kit\qcom-robotics-full-image
			QCS5430	RB3 Gen 2 Lite Vision Development Kit					
QIMP SDK	QIMP SDK flashable image for Arm-RB8-core-kit	Software built on ARM host for RB8 Core. It comes with multimedia applications.	QCS9075	IQ9 Beta EVK	qcs9075-rb8-core-kit	Arm	r00214.2	QCS9100.LE.1.0-00214-STD.PROD-2	<extracted zip directory path>\target\qcs9075-rb8-core-kit\qcom-multimedia-image
QIMP SDK	QIMP SDK flashable image for x86-RB8-core-kit	Software built on X86 host for RB8 Core. It comes with multimedia applications.	QCS9075	IQ9 Beta EVK	qcs9075-rb8-core-kit	x86	r00214.2	QCS9100.LE.1.0-00214-STD.PROD-2	<extracted zip directory path>\target\qcs9075-rb8-core-kit\qcom-multimedia-image
QIRP SDK	QIRP SDK flashable image for ARM-RB8-core-kit	Software built on ARM host for RB8 Core. It comes with Robotic applications.	QCS9075	IQ9 Beta EVK	qcs9075-rb8-core-kit	Arm	r00214.2	QCS9100.LE.1.0-00214-STD.PROD-2	<extracted zip directory path>\target\qcs9075-rb8-core-kit\qcom-robotics-full-image
QIRP SDK	QIRP SDK flashable image for x86-RB8-core-kit	Software built on X86 host for RB8 Core. It comes with Robotic applications.	QCS9075	IQ9 Beta EVK	qcs9075-rb8-core-kit	x86	r00214.2	QCS9100.LE.1.0-00214-STD.PROD-2	<extracted zip directory path>\target\qcs9075-rb8-core-kit\qcom-robotics-full-image

9. Comprehensive list of Features

QCS6490, QCS5430, IQ9 and IQ8 product level features

Technology Area(s)	Features	QCS6490	QCS5430	IQ9		IQ8		IQ6
		Custom	Custom	Custom	Base	Custom	Base	Base
Boot and Peripherals	UEFI Secure Boot	GA	GA	GA	GA	GA	GA	NA
	System D	GA	GA	GA	GA	GA	GA	NA
	PCIe Switch	GA	GA	No HW support	No HW support	No HW support	No HW support	No HW support
	Fast Boot	GA	GA	GA	GA	GA	GA	Pre-GA
	Gunyah Hypervisor	GA	GA	GA	GA	GA	GA	NA
	KVM	GA	GA	NA	GA	NA	GA	NA
	UVC/UAC Host mode	GA	GA	GA	GA	GA	GA	UVC Supported.
	Peripheral Enablement (I2C, SPI, Slimbus, UART,USB,UFS)	GA	GA	GA	GA	GA	GA	Pre-GA
	SoC Infra Enablement	GA	GA	GA	GA	GA	GA	Pre-GA
	USB Hub (Type-A ports)	GA	GA	IQ9 Beta EVK- No HW support Dragonwing™ IQ-9075 EVK- Alpha	IQ9 Beta EVK- No HW support Dragonwing™ IQ-9075 EVK- Not yet enabled	IQ8 Beta EVK- No HW support	IQ8 Beta EVK- No HW support	Pre-GA
	USB LAN RJ45 Eth interface	GA	GA	No HW support	No HW support	No HW support	No HW support	Pre-GA
	QPS615 Ethernet ports	GA	GA	No HW support	No HW support	No HW support	No HW support	No HW support
	micro-SD Storage	GA	GA	IQ9 Beta EVK- No HW support Dragonwing™ IQ-9075 EVK- Not yet enabled. HW limitation.	IQ9 Beta EVK- No HW support Dragonwing™ IQ-9075 EVK- Not yet enabled. HW limitation.	No HW support	No HW support	Pre-GA
Linux drivers, Yocto and platform features	Base Metadata layers	GA	GA	GA	GA	GA	GA	Pre-GA
	ADB	GA	GA	GA	GA	GA	GA	Pre-GA
	Dev utilities (SSH, SCP)	GA	GA	GA	GA	GA	GA	Pre-GA
	Device Tree (DT) merge	GA	GA	GA	NA	GA	NA	NA
	Debug tools (valgrind, gdb, gdbserver, ltrace)	GA	GA	GA	GA	GA	GA	Pre-GA
	Kernel 6.6 recipe	GA	GA	GA	GA	GA	GA	Pre-GA
	Single System Image	GA	GA	GA	GA	GA	GA	Pre-GA
	Container Orchestration	GA	GA	GA	GA	GA	GA	Pre-GA
	OpenMP Support	GA	GA	GA	GA	GA	GA	Pre-GA
	FastRPC	GA	GA	GA	GA	GA	Not enabled yet	NA
	DMABUF	GA	GA	GA	GA	GA	GA	Pre-GA
	GPIO Driver	GA	GA	GA	GA	GA	GA	Pre-GA
	Pinctrl	GA	GA	GA	GA	GA	GA	Pre-GA
	IPC Controller support	GA	GA	GA	GA	GA	GA	No HW support
	Multi Core-boot	GA	GA	GA	GA	GA	GA	Pre-GA
	SCM drivers	GA	GA	GA	GA	GA	GA	Pre-GA
	Baseport CPU Hotplug	GA	GA	GA	GA	GA	GA	Pre-GA
	Remote proc	GA	GA	GA	GA	GA	GA	NA
	ZRAM enablement	GA	GA	GA	GA	GA	GA	Pre-GA
Audio	Playback	GA	GA	GA	NA	ALPHA	NA	NA
	Record	GA	GA	GA	NA	ALPHA	NA	NA
	Pulse Audio	GA	GA	GA	NA	ALPHA	NA	NA
	Compress Offload (Only MP3)	GA	GA	GA	NA	ALPHA	NA	NA
	HFP	GA	GA	NA	NA	NA	NA	NA
	Fluence (Only SMECNS)	GA	GA	GA	NA	ALPHA	NA	NA
	Software based Audio playback and record	GA	GA	GA	NA	ALPHA	NA	NA
Graphics	3D rendering	GA	GA	GA	NA	GA	NA	NA
	EGL1.4	GA	GA	GA	NA	GA	NA	Pre-GA
	UBWC	GA	GA	GA	NA	GA	NA	NA
	OpenCL 3.0	GA	GA	GA	NA	GA	NA	NA
	Vulkan 1.1	GA	GA	GA	NA	GA	NA	NA
	OpenGL ES3.2	GA	GA	GA	NA	GA	NA	Pre-GA
	SDP	GA	GA	GA	NA	GA	NA	NA

Technology Area(s)	Features	QCS6490	QCS5430	IQ9		IQ8		IQ6
		Custom	Custom	Custom	Base	Custom	Base	Base
Camera	Preview	GA	GA	GA	NA	GA	NA	NA
	Snapshot	GA	GA	NA	NA	NA	NA	NA
	3A	GA	GA	GA	NA	GA	NA	NA
	Auto-Exposure compensation (AEC)	GA	GA	GA	NA	GA	NA	NA
	Auto White Balance (AWB)	GA	GA	GA	NA	GA	NA	NA
	Auto Focus (AF)	GA	GA	NA	NA	NA	NA	NA
	Phase Detection Auto Focus (PDAF)	GA	GA	NA	NA	NA	NA	NA
	JPEG	GA	GA	NA	NA	NA	NA	NA
	Tintless	GA	GA	NA	NA	NA	NA	NA
	Single/Multi Camera Support	GA	GA	GA for single and concurrent camera	NA	GA for single and concurrent camera	NA	NA
	ML based Face Detection in Camera backend	GA	GA	NPOR for this release	NA	NPOR for this release	NA	NA
	High Frame Rate (HFR)	GA	GA	NA	NA	NA	NA	NA
	Lens Distortion Correction (LDC)	GA	GA	GA	NA	GA	NA	NA
	Lens Shading Correction (LSC)	GA	GA	GA	NA	GA	NA	NA
	Noise Reduction - Snapshot	GA	GA	NA	NA	NA	NA	NA
	Noise Reduction - Video	GA	GA	NA	NA	NA	NA	NA
	Dual VC	GA	GA	NA	NA	NA	NA	NA
Video	Playback	GA	GA	GA	Basic H264 Playback is supported	GA	Basic H264 Playback is supported	Pre-GA
	Recording	GA	GA	GA	NA	GA	NA	H.264/H.265 Encoding Supported
	V4L2	GA	GA	GA	Basic H264 Playback is supported	GA	NA	Pre-GA
	Dynamic Flip and rotation (180 degree)	GA	GA	NA	NA	NA	NA	NA
	Video Concurrency	GA	GA	GA	NA	GA	NA	Pre-GA
Display	Weston (SDM backend)	GA	GA	NA	NA	NA	NA	NA
	Weston (DRM backend)	NA	NA	GA	GA	GA	GA	Pre-GA
	Primary video mode DSI display	GA	GA	GA	GA	GA	GA	Pre-GA
	Overlays	GA	GA	GA	GA	GA	GA	Pre-GA
	Splash (Applicable with AMSS license)	GA	GA	NA	NA	NA	NA	Pre-GA
	DSPP	GA	GA	NA	NA	NA	NA	NA
	SSPP	GA	GA	NA	NA	NA	NA	TBD-liuli
	HDR	GA	GA	NA	NA	NA	NA	NA
	GBM	GA	GA	GA	GA	GA	GA	Mesa GBM Supported
	Pixman Rendering	GA	GA	GA	GA	GA	GA	Pre-GA
	DP Over Type-C	GA	GA	NA	NA	NA	NA	Pre-GA
	Native DP	NA	NA	GA	GA	GA	GA	NA
	MST	NA	NA	Not enabled yet	Not enabled yet	Not enabled yet	Not enabled yet	NA
	eDP interface	GA	GA	NA	NA	NA	NA	NA
Sensors	IMU (Accel & Gyro)	GA	GA	NA	NA	NA	NA	NA
	Pressure	GA	GA	NA	NA	NA	NA	NA
	Magneto Meter	GA	GA	NA	NA	NA	NA	NA
DSP	FastRPC enablement	GA	GA	GA	GA	GA	Not enabled yet	NA
	Secure DSP	GA	GA	Not enabled yet	NA	Not enabled yet	NA	NA
Computer Vision	FastCV	GA	GA	GA	NA	GA	NA	NA
	OpenCV on CPU only	GA	GA	GA	GA	GA	GA	Pre-GA
	OpenCV Acceleration with FastCV	GA	GA	GA	Not enabled yet	GA	Not enabled yet	NA

Technology Area(s)	Features	QCS6490	QCS5430	IQ9		IQ8		IQ6
		Custom	Custom	Custom	Base	Custom	Base	Base
SDKs	QIMP SDK (Intelligent Multimedia)	GA	GA	GA	NA	GA	NA	NA
	QIRP SDK (Robotics platform)	GA	GA	GA	GA	Not enabled yet	Not enabled yet	NA
Security	User data protection (FBE)	GA	GA	GA	GA	GA	GA	NA
	Secure boot (including UEFI secboot)	GA	GA	GA	GA	GA	NA	NA
	PKCS#11 based secure key management	GA (with known limitations)	GA (with known limitations)	GA	NA	GA	NA	NA
	QTEE	GA	GA	GA	GA	GA	GA	Pre-GA
	SoftSKU framework	NA	GA	NA	NA	NA	NA	NA
	Global Platform	GA	GA	GA	NA	GA	NA	NA
	Secure File System	GA	GA	GA	NA	GA	NA	NA
	SMCInvoke and Qseecomcompat	GA	GA	GA	NA	GA	NA	NA
	QCrypto + PRNG	GA	GA	GA	GA	GA	GA	QCrypto supported.
	Public Sectools	GA	GA	GA	GA	GA	GA	Pre-GA
	QcWES (device attestation, feature licensing)	GA	GA	GA	NA	GA	NA	NA
WLAN/Bluetooth	WCN6750 Attch	GA	GA	GA	GA	GA	NA	Pre-GA
	WLAN enablement and legacy features	GA	GA	GA	GA	GA	NA	Pre-GA
	STA (nmcli)	GA	GA	GA	GA	GA	NA	Pre-GA
	SAP (hostapd)	GA	GA	GA	GA	GA	NA	Pre-GA
	6 GHz and 11ax (2.4, 5, 6 GHZ)	GA	GA	GA	GA	GA	NA	Pre-GA
	WLAN Personal and Enterprise Notifications	GA	GA	GA	GA	GA	NA	Pre-GA
	Bluetooth Standalone	GA	GA	GA	GA	GA	NA	Pre-GA
	Bluetooth Inquiry	GA	GA	GA	GA	GA	NA	Pre-GA
	Bluetooth Pairing	GA	GA	GA	GA	GA	NA	Pre-GA
	SDP	GA	GA	GA	GA	GA	NA	Pre-GA
	BLE	GA	GA	GA	GA	GA	NA	Pre-GA
	GATT	GA	GA	GA	GA	GA	NA	Pre-GA
	FTM	GA	GA	GA	GA	GA	NA	Pre-GA
	Bluetooth Audio (A2DP source, HFP AG, HFP Client)	GA	GA	NA	NA	NA	NA	NA

NA : Not Available **GA** : General Acceptance

SDK sample applications

- QIMP SDK sample apps: Qualcomm Intelligent Multimedia Product Software Development Kit (QIMP SDK) Sample Apps
- QIRP SDK sample apps: Qualcomm® Linux Intelligent Robotics Product SDK (QIRP SDK) Sample Apps

10. Release contents

This release contains

- Qualcomm Linux platform packages hosted on GitHub, CodeLinaro, and Qualcomm servers
- QIMP SDK packages hosted on GitHub, and CodeLinaro
- QIRP SDK packages hosted on GitHub, CodeLinaro, and Qualcomm servers
- Firmware prebuilts hosted on CodeLinaro artifactory servers

10.1 Qualcomm Linux platform deliverables

Table 10.1.1 : Qualcomm Linux platform metadata layers hosted on GitHub

Metadata layer	Description
meta-qcom-distro	This layer provides a reference distribution configuration for Qualcomm products. The layer also defines the image recipes and package groups.
meta-qcom-realtime	This layer contains changes specific to real-time kernel configurations. The layer provides additional software support for building a real-time kernel for the Qualcomm devices.
meta-qcom-hwe	This layer contains Qualcomm hardware support and Qualcomm value-added software components. It provides additional software support for enabling Qualcomm devices.

Table 10.1.2 : Qualcomm Linux platform open-source Git repositories hosted on CodeLinaro servers

Repo	Description
platform/vendor/opensource/synx-kernel	Source code for Synx driver
platform/vendor/opensource/camera-kernel	Driver code for Camera
platform/vendor/opensource/camera-devicetree	Device tree entries for Camera
le-utils	Utilities for Android style property management and logging support.
platform/system/memory_repo	Linux Memory libraries/tools
platform/system/memory/libdmabufheap	DMABUF HEAP abstraction library
platform/system/memory/libmeminfo	Hosts various memory stats tools like procrank
platform/vendor/qcom-opensource/wlan/qcacld-3.0	Entry function of downstream WLAN driver when kernel wants to communicate. Userspace module can communicate to downstream driver via cfg80211 operation which is part of kernel and this cfg operation is defined in downstream, so that kernel can call this operation as part of a userspace request.
platform/vendor/qcom-opensource/wlan/qca-wifi-host-cmn	WLAN Common layer which is common between many architectures mobile/WIN AP. This layer code is common between mobile SP and WIN AP SP.

Repo	Description
platform/vendor/qcom-opensource/wlan/fw-api	Interface via WLAN firmware can communicate. This is the WMI interface between WLAN driver and WLAN firmware. Over this interface driver can communicate to firmware and vice versa.
platform/vendor/qcom-opensource/wlan/platform	WLAN platform code that controls LDO, voltage, firmware load, and other platform related info.
mobile-broadband/libqmi	libmi is an interface library to pack the message into QMI messages.
mobile-broadband/ModemManager	ModemManager is a telephony stack, providing a unified high-level API for communicating with mobile broadband modems, regardless of the protocol used to communicate with the actual device.
mobile-broadband/libmbim	libmbim provides IPC communication between ModemManager and modem using Mobile Broadband Interface Model (MBIM) .
platform/hardware/qcom/gps	HAL (Hardware Abstraction Layer) modules and functionality for GPS/Location tech.
platform/vendor/qcom-opensource/location	Open-source modules for GPS/Location tech.
platform/vendor/qcom-opensource/sigma-dut	WLAN certificate code resides inside this module.

Repo	Description
platform/vendor/qcom-opensource/wpa_supplicant_8	Wi-Fi client and SAP code resides in this module, which takes care of WLAN security as well.
mobile-broadband/libqrtr-glib	libqrtr-glib is a glib-based library to use and manage the QRTR (Qualcomm IPC Router) bus.
wayland/weston	Compositor for display.
display/libgbm	Buffer allocations from Client like video, camera, and so on.
platform/hardware/qcom/display	Open-source module for display.
platform/vendor/qcom-opensource/le-services	IoT camera services.
platform/vendor/qcom-opensource/bluetooth_ext	A2DP Sink side code.
platform/vendor/qcom-opensource/system/bt	Fluoride stack code.
platform/hardware/qcom/bt	libbt-vendor
platform/vendor/qcom-opensource/bluetooth	bthost_ipc for audio profiles.
platform/qcom-opensource/bt	btapp, a sample app for Bluetooth testing.
platform/vendor/qcom-opensource/bt-kernel	Bluetooth power driver and slimbus driver.
platform/vendor/qcom-opensource/bt-devicetree	Device-tree, DTSI files for slimbus node handling.
platform/vendor/qcom/opensource/arpal-lx	Audio Platform Abstraction Layer based on AudioReach architecture, which exposes APIs required for realizing audio use cases.
platform/vendor/qcom/opensource/agm	Audio Graph Manager library containing APIs that initialize and enumerate ALSA backends and configure. Hardware end points. Manages to create/destroy/operate graphs created based on the use case.

Repo	Description
platform/vendor/qcom-opensource/audioreach-conf	Open-source project with all audio configuration files.
platform/vendor/qcom-opensource/args	Open-source project for Args
platform/vendor/qcom-opensource/audio_ftm	Open-source project for audio FTM.
platform/vendor/qcom-opensource/audio_mcs	Open-source project for audio MCS.
platform/vendor/qcom-opensource/audio-utils	Common Audio utility libs and headers used across audio HLOS code.
platform/vendor/qcom-opensource/wlan/wlan-devicetree	WLAN device-tree code resides in this module.
platform/vendor/opensource/display-drivers	Driver code for display.
platform/vendor/qcom-opensource/synx-devicetree	DT entries for Synx
platform/vendor/qcom/opensource/graphics-devicetree	DT entries for GFX
platform/vendor/qcom/opensource/graphics-kernel	Driver code for GFX
platform/system/memory/libvmmem	membuf abstraction library
platform/vendor/qcom-opensource/iot-core-oss	This project hosts open-source libraries/algorithms developed in-house for IoT use-cases.
platform/vendor/opensource/display-devicetree	Device tree entries for different Panels of Display.
platform/vendor/qcom/opensource/ss-restart	Open-source project to collect subsystem ramdump in case of crash/fatal.
platform/hardware/qcom/wlan	Secured netlink layer used to communicate between userspace to kernel.
qcom-opensource/mdm-init	All client, sap and p2p config file present.
platform/vendor/opensource/data-eth	Data Ethernet Drivers
platform/vendor/qcom-opensource/sensing-hub	Open-source project for sensors/sensing hub, containing the APIs and reference codes.

Repo	Description
kernel/qcom	Open-source Linux Kernel project
platform/vendor/opensource/eva-kernel	Eva Kernel driver
platform/vendor/opensource/iot-power-module	IoT power module driver
platform/vendor/opensource/mm-drivers	MM drivers
platform/vendor/opensource/touch-drivers	Touch driver
platform/vendor/opensource/video-devicetree	Video Devicetree
platform/vendor/opensource/video-driver	Video driver
platform/vendor/qcom-opensource/pulseaudio-plugin	Pulseaudio plugin

Table 10.1.3 : Qualcomm Linux platform pre-built packages hosted on CodeLinaro artifactory

Tech area	Prebuilt tar.gz name	Prebuilt tar.gz feature and function
Audio	qcom-audio-dac_git_armv8-2a.tar.gz	Audio DAC
Audio	qcom-audio-expander_git_armv8-2a.tar.gz	Audio IO expander
Audio	qcom-audio-mercury_git_armv8-2a.tar.gz	Audio Mercury
Audio	qcom-audio-systems_git_armv8-2a.tar.gz	audio-systems
Audio	qcom-sva-eai_2.0_armv8-2a.tar.gz	contains float/fixed versions of eAI algos used by sva
Audio	qcom-capiv2-headers_git_armv8-2a.tar.gz	capi v2 header libs. Supporting lib for sva.
Bluetooth	qcom-ftm_1.0_armv8-2a.tar.gz	Qualcomm Technologies ftmdaemon
Core BSP	diag_15.0.qcom_qcm6490.tar.gz	This is Diag library required by AP-side Diag clients for their logging needs.
Core BSP	diag-router_15.0_qcm6490.tar.gz	This is Diag binary which is central entity on AP side and supports logging (logs, messages, events), command req/rsp for subsystems like Modem/ADSP/CDSP etc.
Core BSP	qmi-framework_15.0_qcm6490.tar.gz	This is QMI framework library that includes the QCCI and QCSI interface APIs. This library is required by AP side to create QMI client/service applications to communicate with QMI service/clients running on the other subsystems like Modem/ADSP/CDSP (Inter processor Communication).
Core BSP	tftp-server_15.0_armv8-2a.tar.gz	TFTP server used for Remote File System (RFS) access and provides storage space to MPSS/ADSP processors by storing data on the HLOS file system.
Core BSP	time-services_15.0_qcm6490.tar.gz	This is time_daemon binary which is required to sync AP system time with Modem provided time. Also takes care to persist AP system time across reboots.
Core BSP	time-genoff_15.0_qcm6490.tar.gz	This is library for AP side clients of time-services. It will be required if some entity (like chronyd/ntpd) need to set AP system time directly from APPS (in case there is no Modem). Time provided by such entity to time-genoff library will also persist across reboots. This is not required if Modem will be present because AP time-services gives priority to time provided by Modem time-services.
Core BSP	thermal-engine_14.0_qcm6490.tar.gz	Thermal Engine
Camera	camx-kt_1.0_qcm6490.tar.gz	Camera core engine and business logic.
Camera	camxlib-kt_1.0_qcm6490.tar.gz	Camera proprietary libraries, example 3A lib, ISP libs, etc.

Tech area	Prebuilt tar.gz name	Prebuilt tar.gz feature and function
Camera	camxapi-kt_1.0_qcm6490.tar.gz	Header interface/API for CAMx node development/test app.
Camera	chicdk-kt_1.0_qcm6490.tar.gz	Camera use case Pipelines, chi nodes and sensor XMLs, etc..
CV	qcom-fastcv-binaries_1.0_qcm6490.tar.gz	CPU and DSP optimized libs for running CV algorithms
Display	qcom-display-color-linux_git_qcm6490.tar.gz	Display noship has SDM proprietary libraries, such as libsdmextension, libdisplayqos etc., which are needed for Weston compositor.
Display	qcom-display-extn-linux_git_qcm6490.tar.gz	Display ship has PP headers.
DSP	securedsp-example_1.0.qcom_aarch64.tar.gz	Example for Secure DSP use case
DSP	dspservices-headers_15.0.qcom_aarch64.tar.gz	Provides headers (remote, verify, HAP etc.) for clients to use fastrpc framework.
DSP	fastrpc_15.0.qcom_qcs6490_rb3gen2_vision_kit.tar.gz	FastRPC framework libs, bins and service files.
DSP	remote-debug-agent_15.0.qcom_aarch64.tar.gz	To create remote debug agent for LE
GPS/Location	garden-app_git_qcm6490.tar.gz	Test app for GPS / Location
GPS/Location	gdtap-adapter_git_qcm6490.tar.gz	Adapter layer for Xtwifi
GPS/Location	izat-client-api_git_qcm6490.tar.gz	Izat (QC proprietary functionalities) client api library
GPS/Location	izat-core_git_qcm6490.tar.gz	Izat (QC proprietary functionalities) Core library
GPS/Location	izat-core-hdr_git_qcm6490.tar.gz	Izat core header file export recipe
GPS/Location	izat-provider_git_qcm6490.tar.gz	Izat Provider libary for ODCPI, ZAxis handling.
GPS/Location	lbs-core_git_qcm6490.tar.gz	LBS (Location Based services) core functionality
GPS/Location	lbs-core-hdr_git_qcm6490.tar.gz	LBS core header file export recipe
GPS/Location	location-service_git_qcm6490.tar.gz	Location Service library, which loads IzatManager, GTP Proxy libraries, and free Wi-Fi scanning handling.
GPS/Location	loc-base-util_git_qcm6490.tar.gz	Location Base Util library - provides many util libraries such as postcard, nv-param manager, string and time routines.
GPS/Location	loc-diag-iface_git_qcm6490.tar.gz	Diag Iface interaction library used by various location modules
GPS/Location	loc-diag-iface-hdr_git_qcm6490.tar.gz	Loc Diag Iface header file export recipe
GPS/Location	loc-glue_git_qcm6490.tar.gz	Location Glue layer library
GPS/Location	loc-launcher_git_qcm6490.tar.gz	Location process launcher module, which handles launching of various processes such as xtra-daemon and lowi-server, and also loads message queue client implementation for communication between these processes.
GPS/Location	loc-mq-client_git_qcm6490.tar.gz	Location message queue client library - provides a message queue mechanism for communication between location processes.
GPS/Location	loc-net-iface_git_qcm6490.tar.gz	Location Network Interface library - used by location modules for network related notification from data network library and call bringup/teardown (only WWAN)
GPS/Location	loc-qwes-iface_git_qcm6490.tar.gz	Location QWES (Qualcomm Wireless Enablement services) interface library - license validation and verification for QWES enabled functionalities
GPS/Location	locutil_git_qcm6490.tar.gz	Util functions for Dgnss functionalities, which is used by CDFW modules
GPS/Location	lowi-client_git_qcm6490.tar.gz	LOWI (Location over Wifi) Client layer library.
GPS/Location	lowi-common-hdr_git_qcm6490.tar.gz	LOWI related header export recipe
GPS/Location	lowi-server_git_qcm6490.tar.gz	LOWI server application module.
GPS/Location	lowi-test_git_qcm6490.tar.gz	LOWI test application
GPS/Location	loc-ril-client-hdr_git_qcm6490.tar.gz	Loc Ril client hdr
GPS/Location	xt-adapter_git_qcm6490.tar.gz	User preference handling library
GPS/Location	xtra-daemon_git_qcm6490.tar.gz	Xtra (Extended receiver assistance) daemon application module

Tech area	Prebuilt tar.gz name	Prebuilt tar.gz feature and function
GPS/Location	xtwifi-client_git_qcm6490.tar.gz	Terrestrial Positioning (Xt) over WWAN and/or wifi application modules.
GPS/Location	xtwifi-inet-agent_git_qcm6490.tar.gz	Terrestrial positioning crowdsourcing modules
GPS/Location	data-items_git_qcm6490.tar.gz	Data items is a softtware module library handling software
GPS/Location	edgnss-daemon_git_qcm6490.tar.gz	EDGNSS (Enhanced Differential GNSS) - standalone proprietary process to download correction data,
GPS/Location	engine-plugin-api-hdr_git_qcm6490.tar.gz	Engine plugin software module API header library export recipe
GPS/Location	engine-plugin-impl-hdr_git_qcm6490.tar.gz	Engine plugin implemation module API header library export recipe
GPS/Location	asn1c-cper_git_qcm6490.tar.gz	Location module exporting ASNI1 functionality
GPS/Location	asn1c-crt_git_qcm6490.tar.gz	Location module exporting ASNI1 functionality
GPS/Location	asn1c-rtx_git_qcm6490.tar.gz	Location module exporting ASNI1 functionality
GPS/Location	nlp-client-api_git_qcm6490.tar.gz	NLP (Network Location provider) Client api library
GPS/Location	nmea-test-app_git_qcm6490.tar.gz	NMEA test application
GPS/Location	ntrip-client-api_git_qcm6490.tar.gz	Networked Transport of RTCM via Internet Protocol (NTRIP) client API library
GPS/Location	qapi-demo-app_git_qcm6490.tar.gz	QAPI (Qualcomm API) demo application
GPS/Location	cdfw-api-hdr_git_qcm6490.tar.gz	CDFW (Correction data framework) API Header export recipe
GPS/Location	cdfw-remote-api_git_qcm6490.tar.gz	CDFW (Correction data framework) remote API library - clients which connects to CDFW framework running in a remote entity like a different process or target.
GPS/Location	sys-info-cache_git_qcm6490.tar.gz	GPS Sys Info cache
GPS/Location	pal-net-if_git_qcm6490.tar.gz	GPS Pal Net Iface
Graphics	qcom-adreno_1.0_qcm6490.tar.gz	Graphics proprietary libraries (libgsl.so, libGLESv2_adreno.so etc), graphics firmware files (a660_sqe.fw, a660_gmu.bin etc).
Perf	qcom-perf-hal_1.0_armv8-2a.tar.gz	Perf Hal
Securemsm	minkipc_1.0_qcm6490.tar.gz	Libraries enabling MinkIPC
Securemsm	securemsm_1.0_qcm6490.tar.gz	Securemsm library with sampleclient used to test sampleapp with qseecom driver through QSEEComApi library
Securemsm	securemsm-features_1.0_qcm6490.tar.gz	securemsm-features with QseecomAPI user space library to interact with qseecom driver
Securemsm	securemsm-headers_1.0_qcm6490.tar.gz	securemsm headers
Video FW	qcom-video-firmware_1.0_armv8-2a.tar.gz	Contains video firmware binary needed for running video use case on video hardware.
WLAN	qcom-wlan-tools_1.0_qcm6490.tar.gz	Qualcomm Atheros common tools
WLAN	qcom-ath11k-fwtest_1.0_qcm6490.tar.gz	qcom ath11k fw test
WLAN	qcom-ath6kl-utils_1.0_qcm6490.tar.gz	Qualcomm Atheros ath6kl utils
iot-core-algs	qcom-ib2c_1.0_armv8-2a.tar.gz	QCOM library image blending, color conversion and composition.
iot-core-algs	qcom-video-ctrl_1.0_armv8-2a.tar.gz	QCOM library for smart video codec control logic.
Sensors	qcom-sensors-api_1.0_qcm6490.tar.gz	Sensors-api Library
Sensors	qcom-sensors-core_1.0_qcm6490.tar.gz	Sensors-core Library
Sensors	qcom-sensors-lookup_1.0_qcm6490.tar.gz	Sensors-lookup Library
Sensors	qcom-sensors-registry_1.0_qcm6490.tar.gz	Sensing-registry Library
Sensors	qcom-sensors-services_1.0_qcm6490.tar.gz	Sensors-services Library
Sensors	qcom-sensors-test-apps_1.0_qcm6490.tar.gz	Sensors-test-apps Library
Sensors	qcom-sensors-test-core_1.0_qcm6490.tar.gz	Sensors-test-core Library
Sensors	qcom-sensors-test-utils_1.0_qcm6490.tar.gz	Sensors-test-utils Library
Sensors	qcom-sensors-utils_1.0_qcm6490.tar.gz	Sensors-utils Library

Table 10.1.4 : Qualcomm Linux Platform metadata layers hosted on Qualcomm servers

Metadata layer	Description
`meta-qcom-extras`	This layer is an optional metadata layer for registered users. The layer enables source compilation of select components, which are otherwise present as binary in `meta-qcom-hwe`. If you are entitled to this metadata layer, you can use the clone steps shared in the Qualcomm Linux Build Guide.

Table 10.1.5: Qualcomm Linux Platform proprietary Git repositories hosted on Qualcomm servers

Repo	Description
platform/vendor/qcom-proprietary/ship/iot-core-algs.git	QCOM Image Blender, Converter and Composer
platform/vendor/qcom-proprietary/dspservices_ship.git	Example for Secure DSP use case.
platform/vendor/qcom-proprietary/audio-algos.git	Audio Algos
platform/vendor/qcom-proprietary/mm-camerasdk-kt	Camera development interface for camera pipelines, sensor development.
platform/vendor/qcom-proprietary/sensors-ship	Sensors proprietary code containing core modules and test applications from Qualcomm.
platform/vendor/qcom-proprietary/ship/wlan/ath6kl-utils	To Debug WLAN RF hardware card, configured parameter from user-space.

Repo	Description
platform/vendor/qcom-proprietary/ship/wlan/common-tools	This will collect WLAN driver logs and firmware too.
platform/vendor/qcom-proprietary/ship/ftm	RF calibration can be done via FTM module
platform/vendor/qcom-proprietary/ship/gps	Source shippable modules for GPS/Location tech proprietary QC features.
platform/vendor/qcom-proprietary/ship/qmi-framework	This is QMI framework library that includes the QCCI and QCSI interface APIs. This library is required by AP side to create QMI client/service applications to communicate with QMI service/clients running on the other subsystems like Modem/ADSP/CDSP (Inter-processor communication).
platform/vendor/qcom-proprietary/coretech-config-vendor	Coretech configs
platform/vendor/qcom-proprietary/time-services	This is time_daemon binary which is required to sync AP system time with Modem provided time. Also takes care to persist AP system time across reboots.
platform/vendor/qcom-proprietary/ship/diag	This is Diag library required by AP side Diag clients for their logging needs.

Repo	Description
platform/vendor/qcom-proprietary/diag-router	This is the Diag binary which is central entity on AP side and supports logging (logs, messages, events), command req/rsp for subsystems like Modem/ADSP/CDSP etc.
platform/vendor/qcom-proprietary/tftp	TFTP server used for Remote File System (RFS) access and provides storage space to MPSS / ADSP processors by storing data on HLOS file system.
platform/vendor/qcom-proprietary/remotefs	Remote FS provides storage space to MPSS / ADSP processors by storing data on HLOS file system.
platform/vendor/qcom-proprietary/thermal-engine.git	Thermal engine
platform/vendor/qcom-proprietary/ship/data	Data modules
platform/vendor/qcom-proprietary/btftm	BTFTM tool
platform/vendor/qcom-proprietary/bluetooth-tools	btnvmutility to update BD Address
platform/vendor/qcom-proprietary/mm-camerasdk	Camera development interface for camera pipelines, sensor development.

10.2 QIMP SDK package information

Table 10.2.1: Open-source Git repositories hosted on CodeLinaro servers

Repo	Description
meta-qti-qim-product-sdk	Yocto styled meta layer including recipes composing QIM product SDK including Tensorflow-lite, Snapdragon Neural Processing Engine, Qualcomm AI Engine Direct, Qualcomm Intelligent Multimedia plugins. Inclusion of this layer in Qualcomm Linux workspace adds the mentioned packages to monolithic image. Adds the software layer to enable hardware acceleration for Multimedia/AI/CV activities like encode/decode, inference, preprocessing, camera stream/sessions, and video composition.

Repo	Description
meta-qti-gst	Yocto styled meta layer including recipes composing Qualcomm Intelligent Multimedia plugins. Adds Software layer to enable hardware acceleration for Multimedia/AI/CV activities like encode/decode, inference, preprocessing, camera stream/sessions, video composition.
platform/vendor/qcom-opensource/gst-plugins-qti-oss	Qualcomm Intelligent Multimedia gstreamer plugins enabling hardware acceleration for Multimedia/AI/CV activities like encode/decode, inference, preprocessing, camera stream/sessions, video composition
meta-qcom-ml	Yocto styled meta layer including recipes building tensorflow-lite for Qualcomm Linux.

Table 10.2.2 : Open-source Git repositories hosted on GitHub

Repo	Description
meta-qcom-qim-product-sdk	Yocto styled meta layer including recipes composing QIM product SDK including tensorflow-lite, Snapdragon Neural Processing Engine, Qualcomm AI Engine Direct, Qualcomm Intelligent Multimedia plugins. Inclusion of this layer in Qualcomm Linux workspace adds the mentioned packages to monolithic image. Adds the software layer to enable hardware acceleration for Multimedia/AI/CV activities like encode/decode, inference, preprocessing, camera stream/sessions, video composition.

10.3 QIRP SDK package information

Table 10.3.1: Prebuilt packages

Prebuilt tar.gz name	Prebuilt tar.gz feature and function
auto-explore_1.0_aarch64.tar.gz	Make the robot complete the automatic mapping function in an environment, and then return to the starting point of mapping.
depth-vslam_1.0_aarch64.tar.gz	A vslam localization algorithm with depth camera as input.
follow-me_1.0_aarch64.tar.gz	A human tracking algorithm with depth camera as input.
mono-vslam_1.0_aarch64.tar.gz	A vslam localization algorithm with rgb mono camera as input.

Prebuilt tar.gz name	Prebuilt tar.gz feature and function
ocr-msg_1.0_aarch64.tar.gz	A ros service message type package for ocr-service.
ocr-service_1.0_aarch64.tar.gz	A ros service package of ocr-service
sensor-service_2.1_aarch64.tar.gz	sensor service create fastrpc to get the sensor data 's fd, which can reduce the data copy times from dsp to application.
vio_1.0_aarch64.tar.gz	A SLAM algorithm fusing camera and IMU data using an Extended Kalman Filter (EKF). It can track 6DOF pose fusing camera, accelerometer and gyro, and estimate gravity orientation and pose continuously.
voxel-map_1.0_aarch64.tar.gz	A 2D/3D mapping algorithm with vslam as input.

Table 10.3.2 : Opensource Git repositories hosted on CodeLinaro servers

Repo	Component	Description

Repo	Component	Description
meta-ros	ros.qclinux.1.0	OpenEmbedded Layers for ROS 1 and ROS 2
platform/vendor/qcom-opensource/ros	ros.qclinux.1.0	Qualcomm ROS node sample code
platform/external/ros-perception/image_transport_plugins	ros.qclinux.1.0	A set of plugins for publishing and subscribing to sensor_msgs/Image topics in representations other than raw pixel data.
platform/vendor/qcom-opensource/robot-battery	robotics.qclinux.1.0	Qualcomm Battery ROS Node and battery related service & client, which will publish the battery msg into ROS.
platform/vendor/qcom-opensource/robot-navigation	robotics.qclinux.1.0	Qualcomm navigation ROS Node using for realizing point-to-point and follow-path navigation.
platform/external/nuttx-apps	robotics.qclinux.1.0	Qualcomm Nuttx applications based on STM32 MCU.
platform/vendor/qcom-opensource/robot-sensor	robotics.qclinux.1.0	Qualcomm Imu ROS Node and sensor relative API, which can zero copy the sensor data.
platform/vendor/qcom-opensource/robot-camera	robotics.qclinux.1.0	Qualcomm Camera ROS Node which output NV12 format image intra progress and output rgb8 format image cross progress.
platform/vendor/qcom-opensource/robot-control	robotics.qclinux.1.0	Qualcomm robot bringup and keyboard control ROS node using for starting the robot and controlling the robot move.
platform/vendor/qcom-opensource/robotics-oss	robotics.qclinux.1.0	Qualcomm robotics open-source code.

Repo	Component	Description
platform/external/nuttx	robotics.qclinux.1.0	Qualcomm Nuttx OS source code based on STM32F4 MCU.

Table 10.3.3 : Open-source Git repositories hosted on GitHub

Repo	Component	Description
meta-qcom-robotics	metalayers.qcrobotics.1.0	This layer includes robotics functional recipes and the mechanism to generate Robotics Funtion SDK.
meta-qcom-robotics-distro	metalayers.qcrobotics.1.0	This layer contains the configuration information needed to generate ROS Image, including but not limited to package group and image recipe.
Meta-qcom-robotics-sdk	metalayers.qcrobotics.1.0	This layer contains the generation/pick-up mechanism of Robotics Product SDK.

Table 10.3.4 : Qualcomm proprietary Git repositories hosted on Qualcomm servers

Repo	Component	Description
meta-qcom-robotics-extra		This layer includes robotics functional recipes for proprietary features.
platform/vendor/qcom-proprietary/robot-followme	robotics.qclinux.1.0	A robotics sample application that a robot follows a person.
platform/vendor/qcom-proprietary/robotics-prop	robotics.qclinux.1.0	This repository includes Qualcomm proprietary robotics features.

10.4 Firmware prebuilts

Table 10.4.1: Firmware prebuilts hosted on CodeLinaro artifactory

SoC	Repo	Description
QCS6490/QCS5430	QCM6490_bootbinaries.zip	Includes NHLOS critical binaries for bootup.
	QCM6490_fw.zip	PIL_Splited firmware binaries.
	QCM6490_dspso.zip	Compute DSP and audio DSP firmware binaries.
IQ9	QCS9100_bootbinaries.zip	Includes NHLOS critical binaries for bootup.
	QCS9100_fw.zip	PIL_Splited firmware binaries
	QCS9100_dspso.zip	Computes DSP and audio DSP firmware binaries.
IQ8	QCS8300_bootbinaries.zip	Includes NHLOS critical binaries for bootup.
	QCS8300_fw.zip	PIL_Splited firmware binaries
	QCS8300_dspso.zip	Compute DSP and audio DSP firmware binaries.

11. Limitations

Qualcomm Linux:

Target	Issue
QCS6490.LE.1.0 IQ9 IQ8	External Display Hotplug is not supported. You must connect the HDMI/DP cable before powering on the device Some X11 applications like VKCube and glmark2 are not enabled on this release.
IQ9 IQ8	Random corruption is noticed during the initial seconds of video playback in UBWC format for H264, H265-480p, and VP9-480p, 1080p resolutions on the Weston display.
IQ9	BT device is not being detected by hciconfig.
QCS6490.LE.1.0	Garbled display is observed when Weston is forced to start with a 720p resolution on Ubuntu 24.04.

Limitations from QIMP SDK: Qualcomm Intelligent Multimedia Product SDK (QIMP SDK) Limitations

Limitations from QIRP SDK: Qualcomm Linux Intelligent Robotics Product SDK (QIRP SDK) 2.0 Limitations

Interface not supported in this release

Qualcomm Dragonwing™ IQ-9075 EVK
USB1 – Camera?
SD Card?
Mic and speakers?
CAN interface?
IMU and temp sensor?
Reset button?
EEPROM ?
TPM?

IQ9 Beta EVK
CAN/CAN-FD?
EMMC?
2x mini DP?
DSI to LVDS?
Can / LIN

12. Memory configuration

This software can be used with the ASICs and revisions, with the indicated release quality. ASIC revisions available at the time of this release are assumed to be supported, unless otherwise indicated.

Supported ASICs

ASIC hardware	ASIC hardware revision
QCS6490	V1.0
QCS5430	
IQ9	V1.0
IQ8	V1.0

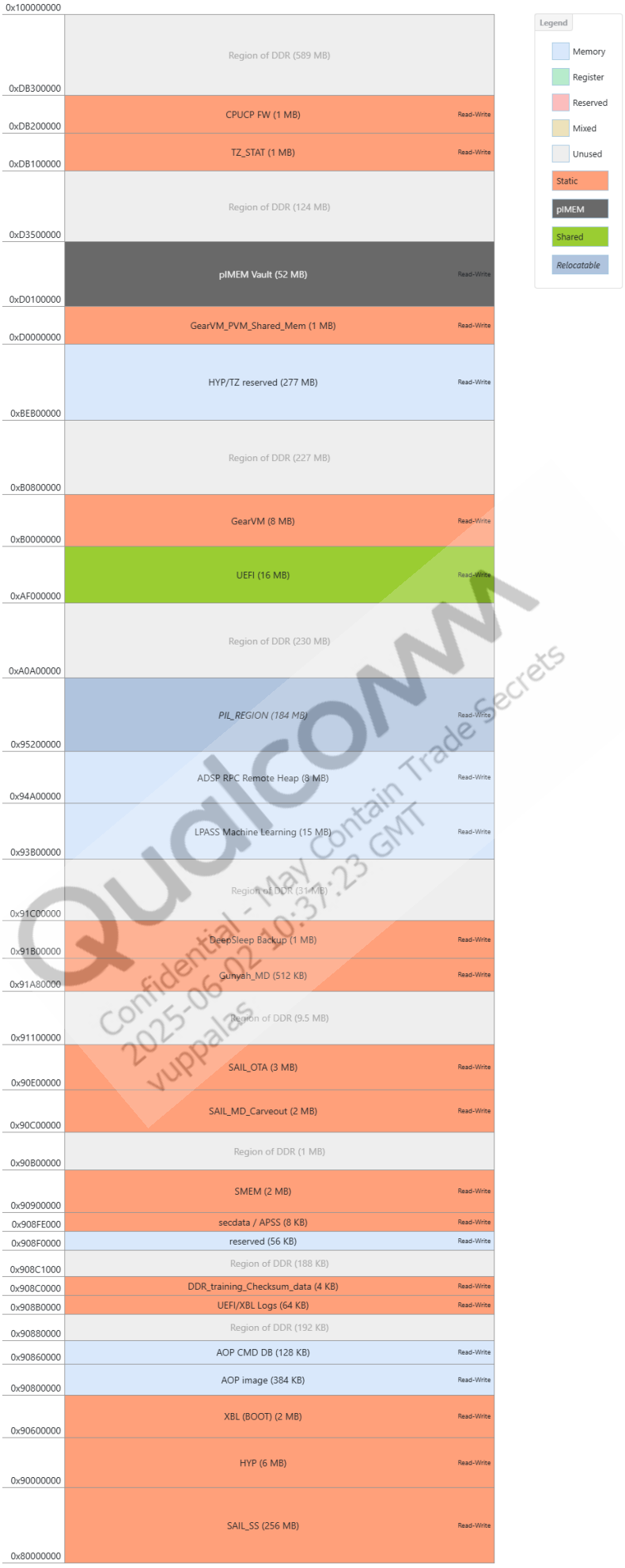
Memory configuration and usage

QCS6490 ASIC (QCS5430 has the same memory map)

The following figure shows the run-time memory map for the QCS6490 ASIC.

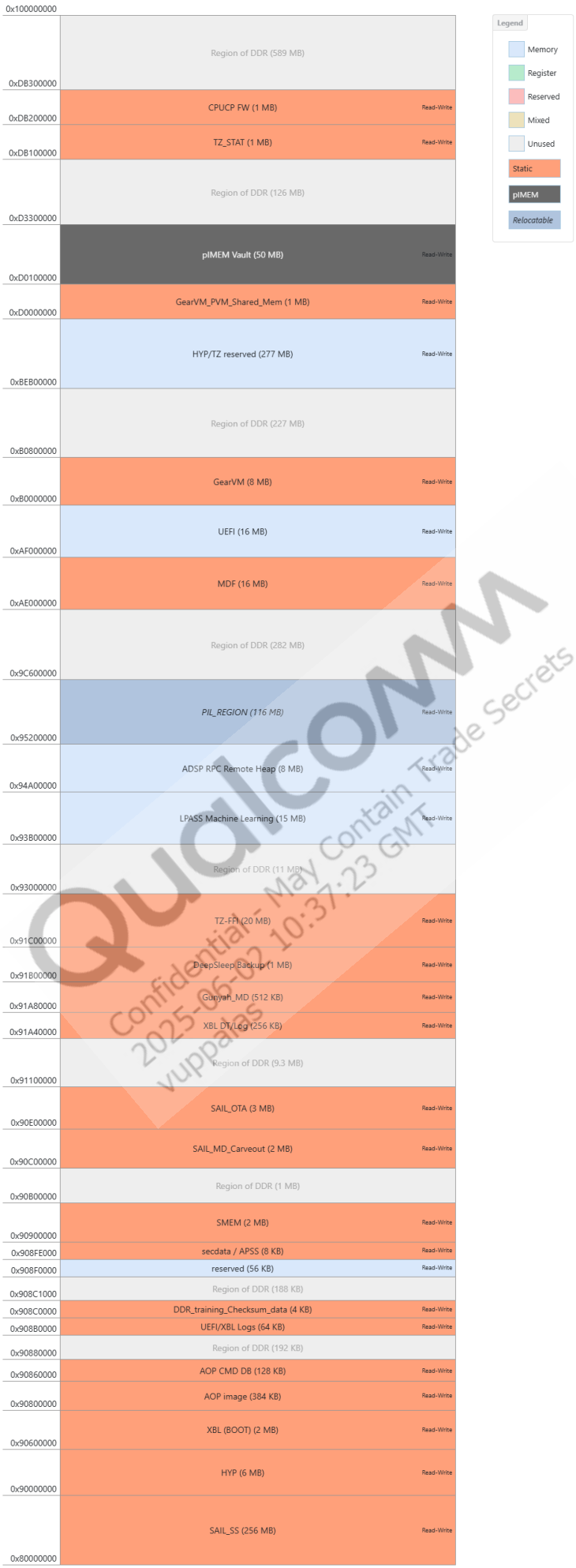
IQ9 ASIC

The following figure shows the run-time memory map for the IQ9 ASIC.



IQ8 ASIC

The following figure shows the run-time memory map for the IQ8 ASIC.



13. References

Chipset	Title
Common	Qualcomm Linux Documentation Home
	Qualcomm Linux Build Guide
QCS6490	Qualcomm Dragonwing™ RB3 Gen 2 Development Kit Quick Start Guide
IQ9	Qualcomm Dragonwing™ IQ-9075 Quick Start Guide Qualcomm® IQ-9 Beta Evaluation Kit Quick Start Guide
IQ8	Qualcomm® IQ-8 Beta Evaluation Kit Quick Start Guide

14. Test Reports

Functionality test report

FA	Test Case	Qualcomm® RB3 Gen 2 Vision Development Kit	Custom IQ9 Beta EVK	Base IQ9 Beta EVK	Custom Dragonwing™ IQ-9075 EVK	Base Dragonwing™ IQ-9075 EVK	Base IQ8 Beta EVK	Custom IQ8 Beta EVK
Kernel	Access Serial Console	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	adb shell reboot	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Reboot edl	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Reboot (shutdown -r)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Reboot (shutdown -r now)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Force shutdown(shutdown -h now)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	shutdown (simple shutdown)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	CPU utilization in idle state	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	ZRAM	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Dump collection	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Boot to adb shell	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Pil	Pass	Pass	Pass	Pass	Pass	Pass	Pass
LE Core	Check udev is running	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	systemctl enable or disable unit	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	systemd Initialization	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	PD mapper service check	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	services start/stop	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Tools	QIFL flashing	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Security	SELinux_Permissive_Check	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Power	Suspend	Pass	NA	NA	NA	NA	NA	NA
	TCXO	Pass	NA	NA	NA	NA	NA	NA
Boot	KVM	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Connectivity	BT enable	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	BT disable	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	BT pair	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Wlan enable	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	ETH	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Ping	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	SSH	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Multimedia	Camera	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	AudioRecord	Pass	Pass	NA	Pass	Pass	NA	Pass
	Audio Playback	Pass	Pass	NA	Pass	Pass	NA	Pass
	Video Decode	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Video encode	Pass	Pass	NA	Pass	NA	NA	Pass
	Display up	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	sensors listing and validation(accel, gyro, mag, and pressure)	Pass	NA	NA	NA	NA	NA	NA
	Graphics Tests verification	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	CV	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	DSP	Pass	Pass	Pass	Pass	Pass	Pass	Pass

15. Additional Information

Step for IQ9 (QCS9100) meta creation:

Applicable to the following distributions:

- Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|
- Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|QIMPSDK
- Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|QIRPSDK

Following is an example for `Qualcomm_Linux.SPF.1.0|AP|Standard|OEM|QIMPSDK`

1. Configure `contents.xml`

```
cd <FIRMWARE_ROOT>/qualcomm-linux-spf-1-0_ap_standard_oem_nm-qimpsdk/QCS9100.LE.1.0/
```

a. Remove the following from `contents.xml`

```
----------

<build>
      <name>sail</name>
      <role>sail</role>

<chipset>QCS9100,SA8775P,QAM8775P,SA8650P,QCS9075</chipset>
      <build_id>SAIL.SI.1.2-00011-AU.LEMANS-1</build_id>
      <windows_root_path cmm_root_path_var="SAIL_BUILDROOT">.\..\SAIL.SI.1.2\</windows_root_path>
      <linux_root_path cmm_root_path_var="SAIL_BUILDROOT">./../SAIL.SI.1.2/</linux_root_path>
      <image_dir>sail_proc</image_dir>
      <release_path>BIN</release_path>
      <download_file cmm_file_var="SAIL_HYP_BINARY" minimized="true" oem_imageid="SAIL-HYP" storage_type="spinor" fastboot_complete="SAIL_HYP" backup_partition="SAIL_HYP_BKUP" k2c_sail="true">
        <file_name>sailfreertos.elf</file_name>
        <file_path flavor="sail_nor">sail_proc/build/ms/bin/SAIL_RTOS/DEBUG/lemans/signed/</file_path>
      </download_file>
      <file_ref ignore="true" security_profile="SAIL">
        <file_name>sail_security_profile.xml</file_name>
        <file_path flavor="sail_nor">sail_proc/BSP/security/security_profile/lemans/</file_path>
      </file_ref>
      <buildfile_path>/</buildfile_path>
      <build_command> </build_command>
 </build>
```

```
-----------
```

b. Add the following in `contents.xml`

```
------------

<build>
      <name>sail</name>
      <role>sail</role>

<chipset>QCS9100,SA8775P,QAM8775P,SA8650P,QCS9075</chipset>
      <build_id>SAIL.SI.1.0.c1-00021-AU.LEMANS-1</build_id>
      <windows_root_path
cmm_root_path_var="SAIL_BUILDROOT">.\..\SAIL.SI.1.0.c1\</window
s_root_path>
      <linux_root_path
cmm_root_path_var="SAIL_BUILDROOT">./../SAIL.SI.1.0.c1/</linux_
root_path>
      <image_dir>sail_proc</image_dir>
      <release_path type="src">BIN</release_path>
      <release_path type="bin">BIN</release_path>
      <release_path type="bin_meta_art">BIN</release_path>
      <download_file backup_partition="SAIL_DLP_BKUP"
cmm_file_var="SAIL_DLP_BINARY" fastboot_complete="SAIL_DLP"
minimized="true" storage_type="spinor" k2c_sail="true">
        <file_name>sail_nor_dlp.bin</file_name>
        <file_path
flavor="sail_nor">sail_proc/BSP/spinor/dlp/</file_path>
      </download_file>
      <download_file cmm_file_var="SAIL_HYP_BINARY"
minimized="true" oem_imageid="SAIL-HYP" storage_type="spinor"
fastboot_complete="SAIL_HYP" backup_partition="SAIL_HYP_BKUP"
k2c_sail="true">
        <file_name>sailhyp.elf</file_name>
        <file_path
flavor="sail_nor">sail_proc/build/ms/bin/SAIL_RTOS/DEBUG/lemans
/signed/</file_path>
      </download_file>
      <download_file cmm_file_var="SAIL_SW1_BINARY"
minimized="true" oem_imageid="SAIL-SW1" storage_type="spinor"
fastboot_complete="SAIL_SW1" backup_partition="SAIL_SW1_BKUP"
k2c_sail="true">
        <file_name>sailsw1.elf</file_name>
        <file_path
flavor="sail_nor">sail_proc/build/ms/bin/SAIL_RTOS/DEBUG/lemans
/signed/</file_path>
      </download_file>
      <download_file cmm_file_var="SAIL_SW2_BINARY"
oem_imageid="SAIL-SW2" minimized="true" storage_type="spinor"
fastboot_complete="SAIL_SW2" backup_partition="SAIL_SW2_BKUP"
k2c_sail="true">
```

```
        <file_name>sailsw2.elf</file_name>
        <file_path
flavor="sail_nor">sail_proc/build/ms/bin/SAIL_RTOS/DEBUG/lemans
/signed/</file_path>
      </download_file>
      <download_file cmm_file_var="SAIL_SW3_BINARY"
minimized="true" oem_imageid="SAIL-SW3" storage_type="spinor"
fastboot_complete="SAIL_SW3" backup_partition="SAIL_SW3_BKUP"
k2c_sail="true">
        <file_name>sailsw3.elf</file_name>
        <file_path
flavor="sail_nor">sail_proc/build/ms/bin/SAIL_RTOS/DEBUG/lemans
/signed/</file_path>
      </download_file>
      <file_ref ignore="true" security_profile="SAIL">
        <file_name>sail_security_profile.xml</file_name>
        <file_path
flavor="sail_nor">sail_proc/BSP/security/security_profile/leman
s/</file_path>
      </file_ref>
      <buildfile_path>/</buildfile_path>
      <build_command> </build_command>
    </build>

-------------
```

2. Configure `partition.xml`.

```
cd <FIRMWARE_ROOT>/qualcomm-linux-spf-1-0_ap_standard_oem_nm-
qimpsdk/QCS9100.LE.1.0/common/config/sail_nor_lemans
```

a. Remove the following from `partition.xml`

```
<partition label="SAIL_HYP"              size_in_kb="900"
type="8701faa8-baa0-43cf-9c90-3b30495c558e"
filename="sailfreertos.elf"/>

<partition label="SAIL_HYP_BKUP"         size_in_kb="900"
type="ccd55b90-28b7-4d96-993f-ac93a512f1eb"
filename="sailfreertos.elf"/>
```

b. Add the following in `partition.xml`

```
 <partition label="SAIL_DLP"              size_in_kb="4"
type="e71077eb-c60d-46ac-a6a0-130dd47925fc"
filename="sail_nor_dlp.bin"/>

 <partition label="SAIL_HYP"              size_in_kb="900"
type="8701faa8-baa0-43cf-9c90-3b30495c558e"
filename="sailhyp.elf"/>
```

```
 <partition label="SAIL_SW1"              size_in_kb="1024"
type="48f990b1-4e61-4b16-9f76-2244ee819eb3"
filename="sailsw1.elf"/>

 <partition label="SAIL_SW2"              size_in_kb="2048"
type="e96d074b-6921-49f2-bd7c-c6a0a4bb72e1"
filename="sailsw2.elf"/>

 <partition label="SAIL_SW3"              size_in_kb="2048"
type="dbba35e0-bc57-453f-9b0c-e8c0193a3e9d"
filename="sailsw3.elf"/>

 <partition label="SAIL_HYP_BKUP"         size_in_kb="900"
type="ccd55b90-28b7-4d96-993f-ac93a512f1eb"
filename="sailhyp.elf"/>

 <partition label="SAIL_SW1_BKUP"         size_in_kb="1024"
type="025416ff-75ca-475a-9c62-e4c90e4acc2d"
filename="sailsw1.elf"/>

 <partition label="SAIL_SW2_BKUP"         size_in_kb="2048"
type="a866cb7e-3e25-4c2e-95cd-2dfae9290fba"
filename="sailsw2.elf"/>

 <partition label="SAIL_SW3_BKUP"         size_in_kb="2048"
type="58af8cc0-33e0-4216-a59a-0356488db42e"
filename="sailsw3.elf"/>

 <partition label="SAIL_DLP_BKUP"         size_in_kb="4"
type="7b361e53-ac16-4c81-86b2-ae5cbfab198a"
filename="sail_nor_dlp.bin"/>
```

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