



**Linux QMI SDK 04.00.16**

## **Customer Release Note**



**SIERRA**  
WIRELESS®

41112349  
2.3  
Aug 17, 2018

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# Document History

Version	Date	Updates
1.0	February 28, 2018	Creation
2.0	April 11, 2018	Updated document reference number and template
2.1	April 27, 2018	Updated for 04.00.14
2.2	June 22, 2018	Updated for 04.00.15
2.3	Aug 17, 2018	Updated for 04.00.16

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# 1. Introduction

This document describes the contents of the Linux QMI SDK 04.00.15 release.

## 1.1. New Features/Enhancements

Table 1. New Features/Enhancements

Feature	Description
<b>Add IOT support to QMI_NAS_GET_SYSTEM_SELECTION_PREFERENCE</b>	New Full SDK API: <ul style="list-style-type: none"> <li>SLQSGetSysSelectionPrefExt</li> </ul> New Lite SDK API: <ul style="list-style-type: none"> <li>pack/unpack_nas_SLQSGetSysSelectionPrefExt</li> </ul>
<b>Add new API for AVMS AVC2 support</b>	New Full SDK API <ul style="list-style-type: none"> <li>SLQSAVMSSetSettings_v2</li> <li>SLQSAVMSSetSettings_v2</li> </ul> New Lite SDK API <ul style="list-style-type: none"> <li>pack/unpack_swiavms_SLQSAVMSSetSettings_v2</li> <li>pack/unpack_swiavms_SLQSAVMSSetSettings_v2</li> </ul>
<b>Documentation update</b>	<ul style="list-style-type: none"> <li>Clarify AVMS AutoConnect behavior on WP76xx</li> <li>Clarify IPV4V6 data call result code meaning</li> <li>Update modem band capability bit mask value</li> </ul>
<b>Firmware downloader update</b>	<ul style="list-style-type: none"> <li>Add support of WP77xx in Lite firmware downloader</li> <li>Support new carrier "USCellular" in Full FW downloader</li> <li>Add 9x50 model family in Lite firmware downloader</li> </ul>
<b>Stress test for USB driver</b>	<ul style="list-style-type: none"> <li>Add USB driver memory usage auto test</li> </ul>
<b>Lite SDK API can shows availability of optional TLV</b>	<ul style="list-style-type: none"> <li>Add bit mask to show availability of optional return value from modem</li> <li>Supported QMI service in this release: swiloc, loc, ims, imsa, fms, cat, audio</li> </ul>

Please refer to QMAP\_FullSDK.html and QMAP\_LiteSDK.html for QMAP test procedures.

## 1.2. Lite APIs Changed

- **SWILOC:**
  - unpack\_swiloc\_SwiLocGetAutoStart
  - unpack\_swiloc\_SwiLocSetAutoStart
- **LOC:**
  - unpack\_loc\_EventRegister
  - unpack\_loc\_SetExtPowerState
  - unpack\_loc\_Start
  - unpack\_loc\_Stop
  - unpack\_loc\_SetOperationMode
  - unpack\_loc\_DeleteAssistData
  - unpack\_loc\_PositionRpt\_Ind

- unpack\_loc\_EngineState\_Ind
  - unpack\_loc\_SetExtPowerConfig\_Ind
  - unpack\_loc\_SLQSLOCGetBestAvailPos
  - unpack\_loc\_BestAvailPos\_Ind
  - unpack\_loc\_SetOperationMode\_Ind
  - unpack\_loc\_DeleteAssistData\_Ind
  - unpack\_loc\_GnssSvInfo\_Ind
  - unpack\_loc\_SLQSLOCInjectUTCTime
  - unpack\_loc\_SLQSLOCInjectPosition
  - unpack\_loc\_SLQSLOCSetCradleMountConfig
  - unpack\_loc\_SLQSLOCInjectSensorData
  - unpack\_loc\_EventNMEA\_Ind
  - unpack\_loc\_SLQSLOCGetServer
  - unpack\_loc\_GetServer\_Ind
  - unpack\_loc\_CradleMountCallback\_Ind
  - unpack\_loc\_EventTimeSyncCallback\_Ind
  - unpack\_loc\_InjectTimeSyncDataCallback\_Ind
  - unpack\_loc\_InjectSensorDataCallback\_Ind
  - unpack\_loc\_SensorStreamingCallback\_Ind
  - unpack\_loc\_InjectUTCTimeCallback\_Ind
  - unpack\_loc\_InjectPositionCallback\_Ind
- **IMS**
- unpack\_ims\_SLQSSetSIPConfig
  - unpack\_ims\_SLQSSetRegMgrConfig
  - unpack\_ims\_SLQSSetIMSSMSCConfig
  - unpack\_ims\_SLQSSetIMSUserConfig
  - unpack\_ims\_SLQSSetIMSVoIPConfig
  - unpack\_ims\_SLQSGetSIPConfig
  - unpack\_ims\_SLQSGetRegMgrConfig
  - unpack\_ims\_SLQSGetIMSSMSCConfig
  - unpack\_ims\_SLQSGetIMSUserConfig
  - unpack\_ims\_SLQSGetIMSVoIPConfig
  - unpack\_ims\_SLQSImConfigIndicationRegister
  - unpack\_ims\_SLQSRegMgrCfgCallBack\_ind
  - unpack\_ims\_SLQSSIPCfgCallBack\_ind
  - unpack\_ims\_SLQSSMSCfgCallBack\_ind
  - unpack\_ims\_SLQSUserCfgCallBack\_ind
  - unpack\_ims\_SLQSVoIPCfgCallBack\_ind
- **IMSA**
- unpack\_imsa\_SLQSRegisterIMSAIndication
  - unpack\_imsa\_SLQSGetIMSARegStatus
  - unpack\_imsa\_SLQSGetIMSAServiceStatus
  - unpack\_imsa\_SLQSImsaSvcStatusCallBack\_ind
  - unpack\_imsa\_SLQSImsaRegStatusCallBack\_ind
  - unpack\_imsa\_SLQSImsaRatStatusCallBack\_ind
  - unpack\_imsa\_SLQSImsaPdpStatusCallBack\_ind
- **FMS**
- unpack\_fms\_GetImagesPreference
  - unpack\_fms\_GetStoredImages
  - unpack\_fms\_SetImagesPreference

- **CAT**
  - unpack\_cat\_SetCATEventCallback
  - unpack\_cat\_SetCatEventCallback\_ind
  - unpack\_cat\_CATSendEnvelopeCommand
  - unpack\_cat\_CATSendTerminalResponse
  
- **AUDIO**
  - unpack\_audio\_SLQSGetAudioProfile
  - unpack\_audio\_SLQSSetAudioProfile
  - unpack\_audio\_SLQSGetAudioPathConfig
  - unpack\_audio\_SLQSSetAudioPathConfig
  - unpack\_audio\_SLQSGetAudioVolTLBConfig
  - unpack\_audio\_SLQSSetAudioVolTLBConfig

## 2. Abbreviations and Definitions

Table 2. Abbreviations and Definitions

Abbreviation/Acronym	Definitions
MSM	Mobile Station Modem
PRI	Product Release Instructions
QMI	Qualcomm MSM Interface
SLQS	Sierra Linux QMI SDK
WP	Work Package

## 3. Related Documentation

- [1] Linux QMI SDK Application Developer's Guide  
Reference number: 4110914
- [2] Linux QMI SDK Sanity Test Report  
Reference number: 41111983
- [3] Linux QMI SDK Software Validation Test Report  
Reference number: 41111984

## 4. Compatibility

Table 3. Hardware Compatibility

Compatible Devices
AR7554/AR7554RD
EM/MC73xx
MC77xx
MC83x5
MC/SL9090
MC/EM74xx
WP8548/7502/7504
WP7601/WP7603/WP7607/WP7609
WP7702
EM7565/EM7511

Note: MC77xx devices must operate in "QMI Mode" and not in "Direct-IP" mode.

To switch the device into QMI mode of operation, use the following AT commands:

- **AT!UDPID=68A2**
- **AT!RESET**

Note: MC73xx, set the device using "AT!UDPID=68C0".

The tables below list the hexadecimal values of the Vendor ID (VID) and Product ID (PID) pairs supported by the Linux QMI SDK.

Table 4. Supported Application-Mode VID/PIDs

<b>VID</b>	1199	1199	1199	1199	1199	1199	1199	1199	1199	3F0	1199	1199	1199
<b>PID</b>	68A2	68C0	9011	9013	9015	9019	9041	9071	371D	9091	90B1	90C1	

Table 5. Supported Boot-Mode VID/PIDs

<b>VID</b>	1199	1199	1199	1199	1199	1199	1199	1199	3F0	1199	1199	1199
<b>PID</b>	68A2	68C0	9010	9012	9014	9018	9040	9070	361D	9090	90B0	90C0

To check your device's VID/PID, issue the `lsusb` command. The output will present a list of USB devices with a column showing each device's manufacturer. The device VID/PID can be read from the row containing the correct device manufacturer. Additionally, on MC77xx devices, you can use the `AT!UDINFO?` command to check VID/PID information. If your VID/PID does not match any of the entries in the tables above, contact your FAE for support.

=The following table enumerates the modules with their corresponding firmware that were tested with Linux QMI SDK 04.00.15.

**Table 6. Modem and Firmware tested with the SDK**

<b>Modem</b>	<b>Firmware</b>
WP7603	SWI9X07Y_02.20.00.00
WP7607	SWI9X07Y_02.20.00.00
WP7608	SWI9X07Y_02.20.00.00
WP7609	SWI9X07Y_02.20.00.00
WP7702	SWI9X06Y_02.18.02.00
EM7565	SWI9X50C_01.08.00.00
EM7511	SWI9X50C_01.07.02.00
EM7455	SWI9X30C_02.30.03.00
MC7305	SWI9X15C_05.05.67.00

*Note: The SDK work across all firmware revisions in general. However, some new APIs might require recent firmware.*

## 5. Software Release Description

Table 7. Release Information

<b>SDK version</b>	04.00.16
<b>Date of generation</b>	17/08/2018
<b>Binary archive name</b>	SLQS04.00.16.bin.tar.gz
<b>Binary archive name</b>	SLQS04.00.16-lite.bin.tar.gz
<b>Source code archive name</b>	SLQS04.00.16.tar.gz
<b>Processor compatibility</b>	x86, ARM, PowerPC, MIPS
<b>Linux kernel compatibility</b>	2.6.32 to 4.15
<b>USB driver compatibility</b>	S2.34N2.53

## 6. Software Changes

### 6.1. Validated Corrections/Improvements

Table 8. Validated Corrections/Improvements

ID	Description
<a href="#">LXQMISDK-1260</a>	CLONE - qmiAirVantage: implement reboot & apn config settings
<a href="#">LXQMISDK-1259</a>	Check Service file descriptor memory usage
<a href="#">LXQMISDK-1256</a>	CLONE - Firmware download sample app doesn't indicate firmware downloaded successfully
<a href="#">LXQMISDK-1253</a>	SDK firmware download tool needs to support WP77xx modem
<a href="#">LXQMISDK-1250</a>	Support carrier "USCellular" in the SDK
<a href="#">LXQMISDK-1246</a>	EM7565 FW upgrader lite - update model family with EM7565
<a href="#">LXQMISDK-1243</a>	AVMS Documentation update for WP76xx
<a href="#">LXQMISDK-1241</a>	Firmware upgrade lite tool fails to upgrade firmware on Arris NVG558 platform
<a href="#">LXQMISDK-1239</a>	[FWATE] Add ip(IPV4) auto config option and mtu auto update option in the packingdemo application
<a href="#">LXQMISDK-1238</a>	Document SLQSSStartStopDataSession return values clearly
<a href="#">LXQMISDK-1237</a>	MP with EM7565 or EM7511 shows APN Not Found
<a href="#">LXQMISDK-1236</a>	Please update bandCapability bitmask values
<a href="#">LXQMISDK-1220</a>	Provide optimized method to check if TLV is present in swiloc service
<a href="#">LXQMISDK-1217</a>	Provide optimized method to check if TLV is present in LOC service
<a href="#">LXQMISDK-1216</a>	Provide optimized method to check if TLV is present in ims service
<a href="#">LXQMISDK-1215</a>	Provide optimized method to check if TLV is present in imsa service
<a href="#">LXQMISDK-1214</a>	Provide optimized method to check if TLV is present in fms service
<a href="#">LXQMISDK-1213</a>	Provide optimized method to check if TLV is present in cat service
<a href="#">LXQMISDK-1212</a>	Provide optimized method to check if TLV is present in audio service
<a href="#">LXQMISDK-1211</a>	qmrpkt recieving non-QMI response
<a href="#">LXQMISDK-1201</a>	Create a Indication matrix table.
<a href="#">LXQMISDK-1189</a>	Update AVC2 Set Setting in Test App to pack without reboot TLV
<a href="#">LXQMISDK-1166</a>	Support QMI_NAS_GET_SYSTEM_SELECTION_PREFERENCE IOT
<a href="#">LXQMISDK-1107</a>	Provide optimized method to check if TLV is present

### 6.2. Known Issues

Table 9. Known Issues

ID	Description
QT19X07-940	Add QMI to change USB composition

## 6.3. Minor API Prototype Change

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*Note:* When updating the SDK, make sure to pull the latest headers from <SDK\_ROOT>/api folder.

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## 6.4. Macro Usage

Table 10. Macro Usage

Macro	Usage
AM_API_MUTEX_TIMEOUT_IN_SEC	This is the timeout time (in seconds) for which the mutex is locked when the SDK is compiled with API_TIMEOUT flag.
API_TIMEOUT	This is a compilation flag. If this flag is defined during compilation, SDK will lock the mutex for a particular time. The locking time is defined by AM_API_MUTEX_TIMEOUT_IN_SEC. If this flag is not defined then the mutex is locked indefinitely.