Linux QMI SDK 04.00.24

Customer Release Note

SIERRA WIRELESS®

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Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the Sierra Wireless modem are used in a normal manner with a well-constructed network, the Sierra Wireless modem should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Sierra Wireless accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the Sierra Wireless modem, or for failure of the Sierra Wireless modem to transmit or receive such data.

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1.0	February 28, 2018	Creation
2.0	April 11, 2018	Updated document reference number and template
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2.2	June 22, 2018	Updated for 04.00.15
2.3	Aug 17, 2018	Updated for 04.00.16
2.4	Oct 26, 2018	Updated for 04.00.17
2.5	Dec 21, 2018	Updated for 04.00.18
2.6	Mar 08, 2019	Updated for 04.00.19
2.7	May 03, 2019	Updated for 04.00.20
2.8	Jul 05, 2019	Updated for 04.00.21
2.9	Sep 13,2019	Updated for 04.00.22
2.10	Nov 22,2019	Updated for 04.00.23
2.11	Feb 17, 2020	Updated for 04.00.24

Contents

List of Tables

1. Introduction

This document describes the contents of the Linux QMI SDK **04.00.24** release.

1.1. New Features/Enhancements

Table 1. New Features/Enhancements

Feature	Description
Add SWIAVMS API to get settings	• QMI_SWI_M2M_AVMS_GET_SETTINGS (Auto reboot TLV) implementation in full and lite SDK
Add new TLV in 3GPP2 subscription info	• QMI_NAS_GET_3GPP2_SUBSCRIPTION_INFO (CDMA MDN Info TLV) implementation in full and lite SDK
Add NAS API to get cell location information	• QMI_NAS_GET_CELL_LOCATION_INFO (WCDMA cell information Ext, UMTS Extended Information and LTE Neighboring WCDMA Cell Information Ext TLV) implementation in full and lite SDK
Add NAS API to get home network	• QMI_NAS_GET_HOME_NETWORK (Network MNC and network name source TLV) implementation in full and lite SDK
Add NAS API to get serving system	• QMI_NAS_GET_SS_INFO (MNC PCS digit Inc Status TLV) implementation in full and lite SDK
Add NAS API to get system information	• QMI_NAS_GET_SYS_INFO (Include NR5G, TE eMBMS Coverage Info, SIM Reject Information, IMS Voice Support Status, LTE Voice Domain on LTE, Network Selection Registration Restriction, LTE Registration Domain, LTE eMBMS Coverage Info Trace ID TLVs) implementation in full and lite SDK
Add NAS API to get system selection preference	• QMI_NAS_GET_SYS_SELECT_PREF (TDSCDMA Band, Registration Restriction, modem usage and voice domain preferences TLV) implementation in full and lite SDK
Add NAS API to get perform network scan	• QMI_NAS_SCAN_NET (network name source TLV) implementation in full and lite SDK
Add new TLV in LTE PHY CA indication	• QMI_NAS_LTE_CPHY_CA_IND (Physical Carrier Aggregation Downlink Bandwidth Type and Number of Scells configured TLV) implementation in full and lite SDK
Add NAS API to extract RF band information indication	• QMI_NAS_RF_BAND_INFO_IND implementation in full and lite SDK
Add LOC API to get fix criteria	• QMI_LOC_GET_FIX_CRITERIA implementation in full and lite SDK
Add UIM API to read record	• QMI_UIM_READ_RECORD implementation in full and lite SDK
Add UIM API to write record	• QMI_UIM_WRITE_RECORD implementation in full and lite SDK
Add UIM API to write transparent	• QMI_UIM_WRITE_TRANSPARENT implementation in full and lite SDK
Add UIM API to get service status	• QMI_UIM_GET_SERVICE_STATUS implementation in full and lite SDK
Add UIM API to set service status	• QMI_UIM_SET_SERVICE_STATUS implementation in full and lite SDK

Feature	Description
Add WDS API to enable SWI profile change indication	• QMI_WDS_SWI_PROFILE_CHANGE implementation in full and lite SDK
Add WDS API to decode SWI profile change indication	• QMI_WDS_SWI_PROFILE_CHANGE_IND implementation in full and lite SDK
Add logger hook function	• Logging by user defined logger function instead of syslog in Lite firmware downloader
Add API to get firmware information from user input path.	• Extract firmware file information from user input path in full SDK
Add documentation in SetDefaultProfileLTE	• Update documentation for API usage on Sprint network
Add QMAP support and GetRuntimeSettings in Connection manager	• Add support to QMAP • Add an option to do GetRuntimeSettings
Add IPv4v6 support in lite-connection manager.	• Support both IPv4 and IPv6 data connections.
Add encode CDMA SMS sample code	• Add sample code in full and lite SMS sample applications
Exclude unsupported RAW SMS message type	• Not decode unsupported RAW SMS message type

1.2. Lite SDK APIs added

- pack_loc_GetFixCriteria
- unpack_loc_GetFixCriteria
- unpack_loc_FixCriteria_Ind
- pack_nas_SLQSNasIndicationRegisterV2
- unpack_nas_SLQSNasIndicationRegisterV2
- pack_nas_SLQSGetHomeNetwork
- unpack_nas_SLQSGetHomeNetwork
- unpack_nas_SLQSGetSysInfoV2
- pack_nas_SLQSGetSysInfoV2
- pack_nas_SLQSPerformNetworkScanV2
- unpack_nas_SLQSPerformNetworkScanV2
- pack_nas_SLQSGetServingSystemV2
- unpack_nas_SLQSGetServingSystemV2
- pack_nas_SLQSNasGetCellLocationInfoV2
- unpack_nas_SLQSNasGetCellLocationInfoV2
- pack_nas_SLQSGetSysSelectionPrefExtV2
- unpack_nas_SLQSGetSysSelectionPrefExtV2
- unpack_nas_SLQSNasRFBandInfoCallback_Ind
- pack_uim_SLQSUIMSetServiceStatus

- unpack_uim_SLQSUIMSetServiceStatus
- pack_uim_SLQSUIMGetServiceStatus
- unpack_uim_SLQSUIMGetServiceStatus
- pack_uim_SLQSUIMReadRecord
- unpack_uim_SLQSUIMReadRecord
- pack_uim_SLQSUIMWriteRecord
- unpack_uim_SLQSUIMWriteRecord
- pack_uim_SLQSUIMWriteTransparent
- unpack_uim_SLQSUIMWriteTransparent
- pack_wds_SLQSSwiProfileChangeCallback
- unpack_wds_SLQSSwiProfileChangeCallback
- unpack_wds_SLQSSwiProfileChangeCallback_Ind

1.3. Lite SDK APIs updated

- pack_nas_SLQSNasGet3GPP2Subscription
- unpack_nas_SetNasLTECphyCaIndCallback_ind

1.4. Full SDK APIs added

- SLQSSetWdsSwiProfileChangeCallback
- SLQSSetLocGetFixCriteriaCallback
- SLQSNasRFBandInfoCallback
- SLQSLOCGetFixCriteria
- SLQSGetHomeNetwork
- SLQSGetServingSystemV2
- SLQSPerformNetworkScanV2
- SLQSGetSysSelectionPrefExtV2
- SLQSNasGetSysInfoV2
- SLQSNasIndicationRegisterV2
- SLQSNasGet3GPP2SubscriptionV2
- SLQSNasGetCellLocationInfoV2
- SLQSUIMSetServiceStatus
- SLQSUIMGetServiceStatus
- SLQSUIMReadRecord
- SLQSUIMWriteRecord
- SLQSUIMWriteTransparent

1.5. Full SDK APIs updated

- Nil

2. Abbreviations and Definitions

Table 2. Abbreviations and Definitions

Abbreviation/Acronym	Definitions
MSM	Mobile Station Modem

Abbreviation/Acronym	Definitions
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: 41112405

[3] Linux QMI SDK Software Validation Test Report

Reference number: 41112406

4. Compatibility

Table 3. Hardware Compatibility

Compatible Devices
AR7554/AR7554RD
EM/MC73xx
MC77xx
MC83x5
MC/SL9090
MC/EM74xx
WP8548/7502/7504
WP76xx
WP7702
EM75xx
RC7611

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 (VID) pairs supported by the Linux QMI SDK.

Table 4. Supported Application-Mode VID/PIDs

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

Table 5. Supported Boot-Mode VID/PIDs

VID	1199	1199	1199	1199	1199	1199	1199	1199	3F0	1199	1199	1199
PID	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.

Following table enumerates the modules with their corresponding firmware that were tested with Linux QMI SDK **04.00.24**

Table 6. Modem and Firmware tested with the SDK

Modem	Firmware
WP7603	SWI9X07Y_02.37.00.00
WP7607	SWI9X07Y_02.37.00.00
WP7608	SWI9X07Y_02.37.00.00
WP7609	SWI9X07Y_02.37.00.00
WP7610	SWI9X07Y_02.37.00.00
WP7702	SWI9X06Y_02.33.00.00
EM7565	SWI9X50C_01.12.01.00
EM7511	SWI9X50C_01.12.01.00
EM7455	SWI9X30C_02.34.01.00
MC7305	SWI9X15C_05.05.58.00
RC7611	SWI9X07H_00.02.07.00

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

5. Software Release Description

Table 7. Release Information

SDK version	04.00.24
Date of generation	12/02/2020
Binary archive name	SLQS04.00.24.bin.tar.gz
Binary archive name	SLQS04.00.24-lite.bin.tar.gz
Source code archive name	SLQS04.00.24.src.tar.gz
Source code archive name	SLQS04.00.24.lite.src.tar.gz
Processor compatibility	x86, ARM, PowerPC, MIPS
Linux kernel compatibility	2.6.32 to 5.4
USB driver compatibility	S2.40N2.61

6. Software Changes

6.1. Validated Corrections/Improvements

Table 8. Validated Corrections/Improvements

ID	Description
LXQMISDK-1168	Support QMI_NAS_GET_SYS_INFO IOT
LXQMISDK-1170	Support QMI_NAS_RF_BAND_INFO_IND IOT
LXQMISDK-1404	[AndroidRIL] Support QMI_WDS_SWI_PROFILE_CHANGE and QMI_WDS_SWI_PROFILE_CHANGE_IND
LXQMISDK-1408	[AndroidRIL] Add APIs to support Android SIM operation.
LXQMISDK-1409	[AndroidRIL] Add support QMI_NAS_GET_3GPP2_SUBSCRIPTION_INFO TLV 0x16
LXQMISDK-1455	SDK register WDS service error when char device not ready on interface 10
LXQMISDK-1465	loop_invalid_unpack close file handle when read/write failed
LXQMISDK-1467	[AndroidRIL] Add support for QMI_LOC_GET_FIX_CRITERIA
LXQMISDK-1479	Tlv type 2 is not handled corretcly for eQMI_NAS_NETWORK_REJECT_IND in SDK
LXQMISDK-1480	add new NAS TLVs support in new firmware version of WP76xx and EM76xx
LXQMISDK-1482	add new SWIAVMS TLVs support in new firmware version of WP76xx and EM76xx
LXQMISDK-1502	create full SDK API SLQSGetFirmwareFileInfo to comprehensively identify different firmware file types and its contents
LXQMISDK-1506	SetDefaultProfileLTEV2 support for new SPRINT behavior
LXQMISDK-1513	Implement unpack_nas_SetNasLTECphyCaIndCallback_ind_t to identify LTE-A Pro networks
LXQMISDK-1514	Firmware update functions call syslog instead of user provided logger
LXQMISDK-1515	Add GetRuntimeSettings to Connection_Manager and lite-connection-manager
LXQMISDK-1516	IPv4V6 not supported in lite connection manager.
LXQMISDK-1517	sms_SLQSCDMAEncodeMOTextMsg fails with value sMS_HELPER_ERR_INVALID_ARG(4)
LXQMISDK-1520	provide an example in sample app on how to use API sms_SLQSCDMAEncodeMOTextMsg
LXQMISDK-1522	DecodeRawSMS not decode unspported message type

6.2. Known Issues

Table 9. Known Issues

ID	Description

6.3. Minor API Prototype Change

API	Comments
• unpack_nas_SLQSNasGet3GPP2Subscription	New TLV MDN was added
• unpack_nas_SetNasLTECphyCaIndCallback_ind	2 New TLV Physical Carrier Aggregation Downlink Bandwidth Type and Number of Scells configured was added

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

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.