Customer Release Notes

Linux QMI Drivers

SIERRA WIRELESS®

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Document History

Version	Date	Updates
1.0	July 21, 2014	Creation
1.1	July 22, 2014	Add SierraLinuxQMIdriversS2.20N2.25
1.2	Oct 17, 2014	Add SierraLinuxQMIdriversS2.20N2.26
1.3	Oct 20, 2014	Add SierraLinuxQMIdriversS2.20N2.27
1.4	Dec 10, 2014	Add SierraLinuxQMIdriversS2.21N2.28
1.5	Dec 17, 2014	Update SierraLinuxQMIdriversS2.21N2.28
1.6	Feb 03, 2015	Add SierraLinuxQMIdriversS2.22N2.29
1.7	Feb 03, 2015	Add supported platform in section 1
1.8	Mar 09, 2015	Add SierraLinuxQMIdriversS2.23N2.30
1.9	Apr 08, 2015	Add SierraLinuxQMIdriversS2.23N2.31
1.10	May 14, 2015	Add SierraLinuxQMIdriversS2.24N2.32
1.11	July 09, 2015	Add SierraLinuxQMIdriversS2.24N2.33
1.12	Aug 27, 2015	Add SierraLinuxQMIdriversS2.25N2.34
1.13	Sep 15, 2015	Update auto suspend issue fixed in SierraLinuxQMIdriversS2.25N2.34
1.14	Oct 26, 2015	Add SierraLinuxQMIdriversS2.25N2.35
1.15	Dec 08, 2015	Add SierraLinuxQMIdriversS2.25N2.36
1.16	Jul 12, 2016	Add SierraLinuxQMIdriversS2.25N2.37
1.17	Sep 28, 2016	Add SierraLinuxQMIdriversS2.26N2.38
1.18	Nov 07, 2016	Add SierraLinuxQMIdriversS2.26N2.39
1.19	Dec 01, 2016	Add how to disable qcserial/qmi_wwan kernel modules
1.20	Jan 05, 2017	Add SierraLinuxQMIdriversS2.27N2.40
1.21	Feb 28, 2017	Add SierraLinuxQMIdriversS2.27N2.41
1.22	Apr 10, 2017	Add SierraLinuxQMIdriversS2.28N2.42
1.23	May 24, 2017	Add SierraLinuxQMIdriversS2.28N2.43
1.24	July 06, 2017	Add SierraLinuxQMIdriversS2.28N2.44
1.25	Aug 18, 2017	Add SierraLinuxQMIdriversS2.29N2.45
1.26	Aug 22, 2017	Add SierraLinuxQMIdriversS2.29N2.45.1
1.27	Sep 4, 2017	Add SierraLinuxQMIdriversS2.29N2.46
1.28	Sep 14, 2017	Add SierraLinuxQMIdriversS2.29N2.47
1.29	Oct 31, 2017	Add SierraLinuxQMIdriversS2.30N2.48
1.30	Dec 22, 2017	Add SierraLinuxQMIdriversS2.31N2.49
1.31	Feb 28, 2018	Add SierraLinuxQMIdriversS2.31N2.50
1.32	Apr 27, 2018	Add SierraLinuxQMIdriversS2.32N2.51
1.33	Jun 22, 2018	Add SierraLinuxQMIdriversS2.33N2.52
1.34	Aug 17, 2018	Add SierraLinuxQMIdriversS2.34N2.53
1.35	Oct 26, 2018	Add SierraLinuxQMIdriversS2.35N2.54
1.36	Dec 21, 2018	Add SierraLinuxQMIdriversS2.36N2.55
1.37	Mar 08, 2019	Add SierraLinuxQMIdriversS2.36N2.56
1.38	May 03, 2019	Add SierraLinuxQMIdriversS2.37N2.57

Contents

1. Overview

This document captures all technical changes to the Sierra Wireless Linux QMI driver release package.

1.1. Naming Convention

The release name uses the following naming convention:

SierraLinuxQMIdriversS*a.b*N*c.d*

Where:

- S refers to the serial driver GobiSerial
- N refers to the network driver GobiNet
- *a.b* is the release version of the serial driver
- *c.d* is the release version of the network driver

These drivers are based on the open source drivers posted at:
https://www.codeaurora.org/patches/quic/gobi/Gobi3000/

The output provided by executing the **modinfo** shell command for either the serial or the network driver is to be interpreted as follows:

< Open source driver version> / < Sierra driver version >

1.2. USB Interface Numbering for Supported Devices

Interface	MC77xx/MC73xx	MC83xx
DM	0	1
NMEA	2	3
MDM	3	2
NET	8	0

1.3. Supported Platforms

Generic QMI 9x50 with VID_1199 PID_90b0

Generic QMI 9x50 with VID_1199 PID_90b1

Generic QMI 9x50 with VID_1199 PID_90c0

Generic QMI 9x50 with VID_1199 PID_90c1

Generic QMI 9x50 with VID_1199 PID_9090

Generic QMI 9x50 with VID_1199 PID_9091

Generic QMI 9x30 with VID_1199 PID_9070
Generic QMI 9x30 with VID_1199 PID_9071
Generic QMI 9x15 WP7102-51 with VID_1199 PID_68A2
Generic QMI 9x15 AR with VID_1199 PID_9100
Generic QMI 9x15 AR with VID_1199 PID_9102
Generic QMI 9x15 AR with VID_1199 PID_9110
Generic QMI 9x15 WP with VID_1199 PID_9056
Generic QMI 9x15 MC73xx with VID_1199 PID_68A2
Generic QMI 9x15 MC73xx with VID_1199 PID_68C0
Generic QMI 9x15 MC73xx with VID_1199 PID_9041
Generic QMI 9x15 with VID_1199 PID_9041
Generic QMI 9x15 with VID_1199 PID_9051
Generic QMI 9x15 with VID_1199 PID_9053
Generic QMI 9x15 with VID_1199 PID_9054
Generic QMI 9x15 with VID_1199 PID_9056
Generic QMI 9x15 with VID_1199 PID_9061
Gobi 3000 Composite Device with VID_1199 PID_9011
Gobi 3000 Composite Device with VID_1199 PID_9013
Gobi 3000 Composite Device with VID_1199 PID_9015
Gobi 3000 Composite Device with VID_1199 PID_9019
Gobi 3000 Composite Device with VID_03f0 PID_371d
Gobi 5000 Composite Device with VID_1199 PID_9060
Gobi 5000 Composite Device with VID_1199 PID_9061

1.4. Supported Linux kernel versions

Linux kernel 2.6.32 to 5.0

1.5. Note on Kernel 3.4 onwards

The Linux distribution may have in built drivers and applications that can interfere with SDK process's execution. The below Qualcomm drivers, if present, need to be black listed.

- `qcserial`
- `qmi_wwan`

Please black list them as below (example is for Ubuntu). Add the 2 entries to the "`/etc/modprobe.d/blacklist-modem.conf`" file and restart the host

```
blacklist qcserial
blacklist qmi_wwan
```

2. Release History

2.1. Release Summary

Release	Date
SierraLinuxQMIdriversS2.37N2.57	03/05/2019
SierraLinuxQMIdriversS2.36N2.56	08/03/2019
SierraLinuxQMIdriversS2.36N2.55	21/12/2018
SierraLinuxQMIdriversS2.35N2.54	26/10/2018
SierraLinuxQMIdriversS2.34N2.53	17/08/2018
SierraLinuxQMIdriversS2.33N2.52	22/06/2018
SierraLinuxQMIdriversS2.32N2.51	27/04/2018
SierraLinuxQMIdriversS2.31N2.50	28/02/2018
SierraLinuxQMIdriversS2.31N2.49	22/12/2017
SierraLinuxQMIdriversS2.30N2.48	31/10/2017
SierraLinuxQMIdriversS2.29N2.47	14/09/2017
SierraLinuxQMIdriversS2.29N2.46	04/09/2017
SierraLinuxQMIdriversS2.29N2.45	18/08/2017
SierraLinuxQMIdriversS2.28N2.44	06/07/2017
SierraLinuxQMIdriversS2.28N2.43	24/05/2017
SierraLinuxQMIdriversS2.28N2.42	10/04/2017
SierraLinuxQMIdriversS2.27N2.41	28/02/2017
SierraLinuxQMIdriversS2.27N2.40	05/01/2017
SierraLinuxQMIdriversS2.26N2.39	09/11/2016
SierraLinuxQMIdriversS2.26N2.38	28/09/2016
SierraLinuxQMIdriversS2.25N2.37	12/07/2015
SierraLinuxQMIdriversS2.25N2.36	08/12/2015
SierraLinuxQMIdriversS2.25N2.35	26/10/2015
SierraLinuxQMIdriversS2.25N2.34	27/08/2015
SierraLinuxQMIdriversS2.24N2.33	09/07/2015
SierraLinuxQMIdriversS2.24N2.32	14/05/2015
SierraLinuxQMIdriversS2.23N2.31	08/04/2015
SierraLinuxQMIdriversS2.23N2.30	09/03/2015
SierraLinuxQMIdriversS2.22N2.29	03/02/2015
SierraLinuxQMIdriversS2.21N2.28	17/12/2014
SierraLinuxQMIdriversS2.20N2.27	20/10/2014
SierraLinuxQMIdriversS2.20N2.26	17/10/2014
SierraLinuxQMIdriversS2.20N2.25	22/07/2014
SierraLinuxQMIdriversS2.19N2.24	13/06/2014
SierraLinuxQMIdriversS2.18N2.24	30/04/2014
SierraLinuxQMIdriversS2.17N2.23	06/01/2014
SierraLinuxQMIdriversS2.16N2.23	28/11/2013

Release	Date
SierraLinuxQMIdriversS2.15N2.22	08/11/2013
SierraLinuxQMIdriversS2.14N2.22	28/10/2013
SierraLinuxQMIdriversS2.13N2.22	17/10/2013
SierraLinuxQMIdriversS2.12N2.21	30/09/2013
SierraLinuxQMIdriversS2.12N2.20	13/09/2013
SierraLinuxQMIdriversS2.12N2.19	30/08/2013
SierraLinuxQMIdriversS2.11N2.18	17/07/2013
SierraLinuxQMIdriversS2.11N2.17	21/06/2013
SierraLinuxQMIdriversS2.11N2.16	19/06/2013
SierraLinuxQMIdriversS2.10N2.15	02/05/2013
SierraLinuxQMIdriversS2.9N2.14	13/03/2013
SierraLinuxQMIdriversS2.8N2.13	22/10/2012
SierraLinuxQMIdriversS2.6N2.12	26/01/2012
SierraLinuxQMIdriversS2.5N2.12	09/14/2011
SierraLinuxQMIdriversS2.4N2.9	08/19/2001
SierraLinuxQMIdriversS2.3N2.6	06/16/2011
SierraLinuxQMIdriversS2.2N2.5	06/14/2011
SierraLinuxQMIdriversS2.1N2.4	05/30/2011
SierraLinuxQMIdriversS2.0N2.3	04/27/2011
SierraLinuxQMIdriversS2.0N2.2	03/15/2011

2.2. SierraLinuxQMIdriversS2.37N2.57

2.2.1. Network Driver Changes

- Support Linux kernel 5.0
- Add support to Android platform

2.2.2. Serial Driver Changes

- Add support to Android platform

2.3. SierraLinuxQMIdriversS2.36N2.56

2.3.1. Network Driver Changes

- Support Linux kernel 4.20
- Fixed GobiNet crash during driver removal on some customer platform issue
- Fixed “scheduling while atomic” warning message from kernel on some customer platform issue
- Fixed IP not retrieved on kernel 2.6.32 issue

2.3.2. Serial Driver Changes

- Nil

2.4. SierraLinuxQMIdriversS2.36N2.55

2.4.1. Network Driver Changes

- Support Linux kernel 4.19
- Add driver option to fix data packet drop in bridge mode
- Improve close function to fix lite SDK application may lockup in some use case
- Improve USB remote wakeup handling
- Fixed auto suspend not working on 2.6.32-21

2.4.2. Serial Driver Changes

- Fixed driver may try to sleep 50 days during NMEA port opening

2.5. SierraLinuxQMIdriversS2.35N2.54

2.5.1. Network Driver Changes

- Fixed memory leak in GobiNet driver
- Fixed EM7565 may unable to register QMI services issue
- Support kernel 4.16
- Fixed GobiNet may cause system run out of process ID issue

2.5.2. Serial Driver Changes

- Fixed memory leak in GobiSerial driver

2.6. SierraLinuxQMIdriversS2.34N2.53

2.6.1. Network Driver Changes

- Fix memory leak of GobiNet driver in some use case
- Fix USB driver may not responding after firmware download completed
- Fix GobiNet driver may crash on some customer platform issue
- Improve GobiNet unload mechanism to prevent dead locked

2.6.2. Serial Driver Changes

- Improve GobiSerial unload mechanism

2.7. SierraLinuxQMIdriversS2.33N2.52

2.7.1. Network Driver Changes

- Fix kernel warning message during driver deregister
- Fix file handle close incorrectly issue
- Update to support MTU size bigger than 1500
- Fix DHCP not working on QMAP virtual IP mode
- Add support to Linux kernel 4.15
- Fix inconsistent lock state found on kernel 4.9.44

2.7.2. Serial Driver Changes

- Fix NMEA port not working on Linux kernel with meltdown patch

2.8. SierraLinuxQMIdriversS2.32N2.51

2.8.1. Network Driver Changes

- Disable padding bytes for QMAP
- Add IOCTL to get QMI service version
- Fix build error on Ubuntu 18.04
- Improve QMAP packet return code path

2.8.2. Serial Driver Changes

- Add RAW ACM interface
- Support zero link payload on QDL mode

2.9. SierraLinuxQMIdriversS2.31N2.50

2.9.1. Network Driver Changes

- Add documentation for QMAP implementation
- Fixed flow control TLV is not sent if QMAP is disabled issue

2.10. SierraLinuxQMIdriversS2.31N2.49

2.10.1. Network Driver Changes

- Disable QMAP when NETNUM equal to 1 or 0
- Fixed potential throughput issue for QMAP
- Fixed incorrect QMAP packet count issue
- Fixed file pointer not close properly after modem disconnected issue
- Improve driver stability by submit URB through kernel work queue

2.10.2. Serial Driver Changes

- Support interface 5 and 6 of AR series of modem for open SIM access

2.11. SierraLinuxQMIdriversS2.30N2.48

2.11.1. Network Driver Changes

- Support QMAP with IPV4 and IPV6
- Add virtual adapter option for QMAP
- Fixed QMAP throughput issue

2.11.2. Serial Driver Changes

- Add support to EM7565

2.12. SierraLinuxQMIdriversS2.29N2.47

2.12.1. Network Driver Changes

- Fixed copy_from_user is missing in QMAP ioctl
- Fixed Linux kernel error during firmware download with lite SDK
- Fixed kernel keep printing debug log when starting data call
- Fixed select() always return 0 issue

2.13. SierraLinuxQMIdriversS2.29N2.46

2.13.1. Network Driver Changes

- QMAP Support
    - Switched to use IP alias instead of virtual adapter
        - No virtual adapter will be enumerated

    - Enable QMAP automatically according to modem configuration
    - Add ioctl to assign IP and Mux ID pair to driver
        - QMI_SET_IP_ADDRESS_IOCTL

2.14. SierraLinuxQMIdriversS2.29N2.45

2.14.1. Network Driver Changes

- QMAP Support
    - Enable by iQMUXEnable switch
        - Enumerate 8 virtual adapter with gobi-<qcqmi#>- prefix
    - Add ioctl to query QMAP support on firmware
        - IOCTL_QMI_GET_QMAP_SUPPORT
- Add support for EM7565
- Fix QMIDevice closed by child process exits

2.14.2. Serial Driver Changes

- Add support for EM7565

2.15. SierraLinuxQMIdriversS2.28N2.44

2.15.1. Network Driver Changes

- Fix _PROBE_LOCK_ macro issue
- Update iTEEnable flag:
    - Default: no TE TLV
    - 1: TE TLV with value one (enabled)
    - 0: TE TLV with value 0 (disabled)
- Stability improvement during device disconnect

2.16. SierraLinuxQMIdriversS2.28N2.43

2.16.1. Network Driver Changes

- Fix kernel soft lockup during modem power cycle stress test
- Fix large packets drop after MTU update

2.17. SierraLinuxQMIdriversS2.28N2.42

2.17.1. Network Driver Changes

- Fix Client ID is not released when no read operation occur

- Fix USB hard_header_len changed in Ethernet Mode
- Add PID support for AR758x: 0x9100, 0x9102, 0x9110

2.17.2. Serial Driver Changes

- Add PID support for AR758x: 0x9100, 0x9102, 0x9110

2.18. SierraLinuxQMIdriversS2.27N2.41

2.18.1. Network Driver Changes

- Fix crash under power cycle test
- Fix select exit immediately
- Add Linux kernel 4.8 support

2.19. SierraLinuxQMIdriversS2.27N2.40

2.19.1. Network Driver Changes

- Dynamic detect between Ethernet mode & RAWIP mode
- Fix USB3 suspend/resume issue
- Disable QoS TE feature by default
- Fix first packet dropped when resume from usb autosuspend
- Enable services filter before suspend
- Fix kernel 4.4 compile warning

2.19.2. Serial Driver Changes

- Fix kernel 4.4 compile warning

2.20. SierraLinuxQMIdriversS2.26N2.39

2.20.1. Network Driver Changes

- Improve stability when device disconnect

2.21. SierraLinuxQMIdriversS2.26N2.38

2.21.1. Network Driver Changes

- Fix issue after hibernate for 9x30

- Remove QOS_MODE

2.21.2. Serial Driver Changes

- Delay & failure handling when sending GPS_START

2.22. SierraLinuxQMIdriversS2.25N2.37

2.22.1. Network Driver Changes

- Fix compilation on 4.4 kernel
- Fix suspend/resume issue on USB 3.0

2.23. SierraLinuxQMIdriversS2.25N2.36

2.23.1. Network Driver Changes

- Fix compilation on 3.12 kernel

2.24. SierraLinuxQMIdriversS2.25N2.35

2.24.1. Network Driver Changes

- Support TE flow control for QoS default bearer
- Add support for URBMonitor on 3.12 kernel

2.25. SierraLinuxQMIdriversS2.25N2.34

2.25.1. Network Driver Changes

- Fix driver crash during auto suspend stress test
- Add support for AR7554RD
- Fix driver not cleanup during module reset
- Fix auto suspend issue

2.25.2. Serial Driver Changes

- Fix driver crash during auto suspend stress test
- Fix driver not cleanup during module reset
- Fix auto suspend issue

2.26. SierraLinuxQMIdriversS2.24N2.33

2.26.1. Network Driver Changes

- Improve IPv6 RawIP support, no kernel's usbnet.c change required
- Print usb connection speed

2.27. SierraLinuxQMIdriversS2.24N2.32

2.27.1. Network Driver Changes

- Fix kernel crash and hang in deregistration
- Add ioctl modem & host mtu synchronization
- Fix IPv6 issue on RAWIP mode
    - On 2.6.3x kernel, please make sure skbuff in usbnet.c of kernel have enough headroom
    - You can modify skb_reserve from NET_IP_ALIGN to ETH_HLEN

2.27.2. Serial Driver Changes

- AT port support for AR7558

2.28. SierraLinuxQMIdriversS2.23N2.31

2.28.1. Network Driver Changes

- Fix enumeration issue on PowerPC
- Fix Ethernet adapter shows as hidden before data call is up

2.29. SierraLinuxQMIdriversS2.23N2.30

2.29.1. Network Driver Changes

- Fix DHCP failure on data call right after modem reset
- Fix proc node removal issue
- Fix compatibility with Centos 6.6 kernel 2.6.32

2.29.2. Serial Driver Changes

- Support USB PID 0x9070
- Fix compatibility on kernel 3.5

2.30. SierraLinuxQMIdriversS2.22N2.29

2.30.1. Network Driver Changes

- Enhance QMI read/write
  - Implement read URB timeout
  - Retry on write URB
  - Log read/write URB recoveries at procfs
- Fix memory leak at QMICTLSyncProc
- Add support for MDM9x30 modem, e.g. EM7455
- Fix Klocwork reported issues

2.30.2. Serial Driver Changes

- Blacklist ADB interface
- Reduce GPS_START/STOP bulk message to 100ms from 1s

2.31. SierraLinuxQMIdriversS2.21N2.28

2.31.1. Network Driver Changes

- Fix URB_monitor to support kernel 2.6.35, 3.0.6, 3.10.21 and 3.10.39
- Fallback to usbnet packet counter statistic
- Update to use usb_control_msg for writing QMI request to modem
- Support adapter rename
- Persistent Mac address across reset
- Update interrupt endpoint interval to 4ms on usb high speed

2.31.2. Serial Driver Changes

- Remove incorrect warning message
- Fix Klocwork detected errors

2.32. SierraLinuxQMIdriversS2.20N2.27

2.32.1. Network Driver Changes

- Fix URB_monitor on multiple PDN
- Fix URB_monitor(false) not called when freeing URB

2.33. SierraLinuxQMIdriversS2.20N2.26

2.33.1. Network Driver Changes

- Fix issue when transaction id wrap over
- Add workaround to fix corrupted IPv6 Ethernet header
- Improve uplink throughput

2.34. SierraLinuxQMIdriversS2.20N2.25

2.34.1. Serial Driver Changes

- Fix mutex warning on kernel 3.12

2.34.2. Network Driver Changes

- Disable QOS_MODE by default
- Fix crash in pGobiDev null check

2.35. SierraLinuxQMIdriversS2.18N2.24

2.35.1. Serial Driver Changes

- Kernel 3.11 - 3.13 supports
- Fix AT port issue when WAKEHOSTEN is set to 0x2
- Fix no NMEA for USB PID 0x9041

2.35.2. Network Driver Changes

- Disable scanning usb interface 11 for MDM9x15 modem
- Kernel 3.11 - 3.13 supports
- Fix 2nd PDN enumerate issue on big endian platform
- Fix usb_kill_urb kernel oops
- Fix QMI enumerate for MDM9x15 with PID 0x68C0

2.36. SierraLinuxQMIdriversS2.17N2.23

2.36.1. Serial driver changes

Fix non-responsive serial port for kernel version between 2.6.33 & 3.3.x.

2.37. SierraLinuxQMIdriversS2.16N2.23

2.37.1. Serial Driver Changes

- AR7 series modem support by blacklisting interface 4/5/6
- Fix double disc mutex lock in kernel 3.2
- Fix compilation on kernel 3.2

2.37.2. Network driver changes

- QoS traffic redirection according to DSCP mapping
  - Added wildcard DSCP 0x40 for batch mapping

2.38. SierraLinuxQMIdriversS2.15N2.22

2.38.1. Serial Driver Changes

- Fix compilation on kernel 3.5.0
- Fix no incoming data after port re-open, only affect kernel > 2.6.32
- Move bulk in completion error under debug flag
  - When bulk-in complete failed, the driver re-submit a URB to trigger the next read. The retry is only display when debug flag is on.

2.39. SierraLinuxQMIdriversS2.14N2.22

2.39.1. Serial Driver Changes

- Fix ttyUSB number keep increasing after -EPROTO handling
  - Ignore bulk-in callback at port closing, thus reduce unnecessary error prints

2.40. SierraLinuxQMIdriversS2.13N2.22

2.40.1. Serial Driver Changes

- Resume traffic when bulk-in completes with EPROTO
  - This is not supported on PowerPC platform

2.40.2. Network Driver Changes

- Implement IOCTL_QMI_DUMP_MAPPING

- Fix multi-pdn enumeration on big endian platform

2.41. SierraLinuxQMIdriversS2.12N2.21

2.41.1. Network Driver Changes

Improve downlink throughput.

2.42. SierraLinuxQMIdriversS2.12N2.20

2.42.1. Network driver changes

- Probe time improvement
- Add ioctl for read & edit QoS mapping
- Work around Ethernet header missing in LTE

2.43. SierraLinuxQMIdriversS2.12N2.19

2.43.1. Serial Driver Changes

- Disc-mutex double lock, avoid double lock at runtime
- Add new PID 0x68c0 of MC78/AR7/WP7 support in GobiSerial

2.43.2. Add Network driver changes

Add new PID 0x68c0 of MC78/AR7/WP7 support in GobiNet.

2.44. SierraLinuxQMIdriversS2.11N2.18

2.44.1. Network Driver Changes

Add MC780x multiple PDN support base on PID 0x68A2.

2.45. SierraLinuxQMIdriversS2.11N2.17

2.45.1. Network Driver Changes

Update QoS mapping to support multiple PDN.

2.46. SierraLinuxQMIdriversS2.11N2.16

2.46.1. Serial Driver Changes

- Add usb audio support on Gobi Serial driver
- Fix disc_mutex double lock
- Add more MDM9X15 PIDs, replace blacklist interfaces array with BITs and probe only vendor class interface (0xff)

2.46.2. Network Driver Changes

- Add more MDM9X15 PIDs, replace blacklist interfaces array with BITs and probe only vendor class interface (0xff)
- Bios Locking & WDA SetDataFormat
  - Replace QMI_CTL_SET_DATA_FORMAT with QMI_WDA_SET_DATA_FORMAT
  - Add Set FCC Authentication request to support Bios Locking. That is, initialize the modem to stay in Lower Power Mode (LPM)
- QoS support
  - Add ioctl for get transmit queue

2.47. SierraLinuxQMIdriversS2.10N2.15

2.47.1. Serial Driver Changes

- Add firmware download mode support for WP71xx & MC78xx (VID 0x1199, PID 0x9040)
- Compilation fix for Linux kernel 3.4.x & 3.5.x

2.47.2. Network Driver Changes

- Fix duplicated MAC addresses when two modem are connected
- QoS support
  - Added ioctl for IP TOS field to Qos ID mapping & header prepend
  - Added transmit queue callback mechanism to user space by signal
  - Added QoS Network support indication parsing

2.48. SierraLinuxQMIdriversS2.9N2.14

2.48.1. Serial Driver Changes

- QMI driver support for Linux Kernel 3.4 onwards.
- QMI driver – 64 bit host support.
- Add support for Gobi5K (MC73xx).

2.48.2. Network Driver Changes

- Gobi Net driver enhancement for code stability.
- Add support for Gobi5K (MC73xx).

2.49. SierraLinuxQMIdriversS2.8N2.13

2.49.1. Serial Driver Changes

Add flow control support for 9x15 device.

2.50. SierraLinuxQMIdriversS2.6N2.12

2.50.1. Serial Driver Changes

Resolved issue resulting in failed firmware downloads on some ARM platforms with MC77xx devices.

2.51. SierraLinuxQMIdriversS2.5N2.12

2.51.1. Network Driver Changes

- Kernel-2.6.39.4 support - key off of the “eth” device name, as opposed to “usb”, in order to extract the proper device <index> to use when creating the /dev/qcqmix device.
- URB submission – In accordance with recent modifications to the Linux kernel, modified the driver such that URBs are not submitted from within a lock.
- Raw IP support – added support for Raw IP mode of operation. Refer to the readme file in the top level release directory for further details.

2.52. SierraLinuxQMIdriversS2.5N2.10

2.52.1. Serial Driver Changes

Merge with open source release 2011-7-29-1026.

2.52.2. Network Driver Changes

Merge with open source release 2011-7-29-1026.

2.53. SierraLinuxQMIdriversS2.4N2.9

2.53.1. Serial Driver Changes

Function renaming to avoid duplicate name conflicts with qcserial.c when the drivers are built as part of the kernel image.

2.53.2. Network Driver Changes

- Merge with open source release Gobi3000Drivers1060_06302011
- Linux kernel 3.0 support
- Function renaming to avoid duplicate name conflicts when the drivers are built as part of the kernel image.
- In line with Linux kernel drivers, the Interrupt URB resubmission rate is now also based on the value supplied in the device's endpoint descriptor as opposed to being solely hard-coded.
- Big Endian support – removed duplicate byte swapping operation in order to correctly report various driver statistics.

2.54. SierraLinuxQMIdriversS2.3N2.6

2.54.1. Serial Driver Changes

- 0x1199 VID, 0x9019 PID support
- Auto-suspend enhancement by addition of a remote wakeup flag

2.54.2. Network Driver Changes

0x1199 VID/ 0x9019 PID support.

2.55. SierraLinuxQMIdriversS2.2N2.5

2.56. SierraLinuxQMIdriversS2.1N2.4

2.57. SierraLinuxQMIdriversS2.0N2.3

2.58. SierraLinuxQMIdriversS2.0N2.2

2.59. SierraLinuxQMIdriversS2.0N2.0

3. Reference Documents

Readme.txt - top level readme file.