



Firmware Release Note

RC7110/RC7120

Revision History

Rev#	Date	Updates
1	2023/12/15	Release 1.0 (SWI216C_01.02.06.00)
2	2024/03/06	Release 2.0 (SWI216C_01.02.08.00)
3	2024/11/19	Release 3.0 (SWI216C_01.02.10.00)

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1 Introduction

1.1 Document Scope

This document describes the firmware releases for the RC71xx product family, which includes RC7110 and RC7120.

Semtech highly recommends migrating to new releases when available to take advantage of any security and stability improvements.

1.2 Firmware Packages and Tools

Module resources, including firmware packages, release notes, tools and other product documentation are published on The Source at <https://source.sierrawireless.com/> and can be accessed via the device-specific page.

1.3 Document Audience

This Release Notes document may be distributed to select pre-release customers.

2 Compatibility

2.1 Hardware compatibility

The latest firmware release is compatible with commercial RC7110 and RC7120 hardware. There are no major known issues with pre-commercial hardware, but it is no longer actively tested or supported.

2.2 Software feature compatibility

The RC71xx feature set is closely compatible with the RC76xx. Refer to [1] RC71xx Migration Guide for a detailed comparison against the previous generation of products.

3 Firmware Release 3.0

Release 3.0 updates Release 2 with AT&T and Verizon TA, and updates Generic and PTCRB.

3.1 Firmware Release Description

3.1.1 Firmware Release Identification

Table 1. Firmware Release Identification – Release 3.0

Component	Details
Firmware Version	SWI216C_01.02.10.00
Date of generation (UTC)	2024/08/30
IMEI SV	02
GSMA TS.25	2024.6.17
Chipset Vendor Stack Version	QCX216.FR.1.0-0078D11.1
Supported HW	RC7110, RC7120

3.1.2 Carrier Packages

Table 2. Carrier Packages – Release 3.0

Carrier	Firmware	Configuration	Comment
Approved			
Generic	SWI216C_01.02.10.00	000.012_006	Approved by AT&T, Verizon, PTCRB, GCF, Anterix

3.1.3 Host Software Versions

The following tools were validated against this release.

Note: *Semtech recommends upgrading to newer Host Software releases when available. Refer to applicable software release notes for any compatibility restrictions.*

Table 3. Validated Host Software Tools

SW Tools Name	Version
Tool Package	71xx.1005

3.1.4 Software Changes

Table 4. Software Changes – Release 3.0

ID	Item	Description	Impacted Domains
KRAKEN-553	AT CMD	Fix +KTCPCLOSE not normal work at server mode	AT command
KRAKEN-554	AT CMD	DUT crash after send data via +KUDPSND	AT command
KRAKEN-445	AT&T	[RC7110][AT&T][AVL_DDR][LTE-BTR-1-3500][UE doesn't send NO SERVICE]	AT&T
KRAKEN-425	AT&T	[RC7110][AT&T][AVL_DDR][LTE-BTR-1-6940][EPS update type is not combined LA/TA]	AT&T
KRAKEN-552	FOTA	DUT unable to boot up after dFOTA	FOTA
KRAKEN-514	PSM	[RC71][LWM2M] Add control flag of "Reg update after expiration of PSM timer" to lwm2m cfg	Lwm2M
KRAKEN-512	Log	[RC71][LWM2M] Print log when trigger registration update by lifetime	Lwm2M
KRAKEN-504	PSM	[RC71][KRAKEN-504][LWM2M] change REG retry timer	Lwm2M
KRAKEN-509	Lwm2M	RC7110][VZW][Motive][TC 11.02] Lwm2m client does not perform full registration ,when it reboots, after completion of FOTA process	Lwm2M
KRAKEN-506	MQTT	[RC71][MQTT][KRAKEN-506] Fix "cannot publish empty string, it will got error message"	MQTT
KRAKEN-507	FOTA	[RC71x0][KRAKEN-507] Add function to reset OTA task parameters	FOTA
KRAKEN-508	FOTA	[RC71x0][KRAKEN-508] When FOTA Download Finish, Call reset OTA task.	FOTA
KRAKEN-498	Log	[RC7110][VZW][Motive][TC13.03] TC requires us to only reboot through sms but logs show that the device was factory reset through sms	Lwm2M
KRAKEN-494	Lwm2M	[RC7110][VZW][Motive][TC 2.08] Lwm2m client initiates a registration when Lifetime timer is not expired.	Lwm2M
KRAKEN-497	FOTA	[RC7110][VZW][Motive][TC 11.02] Outband FOTA process stuck after url write and updating node /5/0/1	Lwm2M
KRAKEN-499	LWM2M	[RC71XX][LWM2M] Cancel the previous unfinished Reg Update.	Lwm2M
KRAKEN-503	AT+CPSMS	[RC71][LWM2M] Clear PSM Timer of LWM2M at "AT+CPSMS=0"	Lwm2M
KRAKEN-483	SMS	[RC7110][Lwm2M] Modify check method to prevent PUSH message save to SIM or ME	Lwm2M

KRAKEN-490	PSM	[RC71] If PSM is disabled, do not enable PSM when setting the active timer	LwM2M
KRAKEN-492	PSM	[RC71XX][LWM2M] Add re-registration and Reg update at PSM mode	LwM2M
KRAKEN-442	PSM	[LwM2M] TC 15.0 PSM Timer failed	LwM2M
KRAKEN-458	VzW LC	[RC7110][VZW][DR IMSLess] TC 3.4 Failed step 17: unexpected attempts during T3402 timer	VzW
KRAKEN-459	VzW LC	[RC7110][VZW][DR IMSLess] TC4.8.1 Failed step 10: unexpected attempts during T3402 timer	VzW
KRAKEN-462	VzW LC	[RC7110][VZW][DR IMSLess] TC 5.2.x Failed (A01), Step 9, RRC Connection Setup timeout	VzW
KRAKEN-463	VzW LC	[RC7110][VZW][DR IMSLess] TC 5.8 Fail (A01), step 9, RRC Connection Setup timeout	VzW
KRAKEN-466	VzW LC	[RC7110][VZW][DR IMSLess] TC 6.7.1 Step 14: unexpected attempts during timer	VzW
KRAKEN-443	LwM2M	[LwM2M] TC15.01 Active Timer failed	LwM2M
KRAKEN-474	LwM2M	[RC7110][LWM2M] Fix coap handle free, but coap handle of server not set null	LwM2M
KRAKEN-475	LwM2M	[LwM2M] Fix TC5.10 failed	LwM2M
KRAKEN-418	LwM2M	[RC7x][LwM2M] Unable to trigger FoTA upgrade	AT command
KRAKEN-436	LwM2M	[RC7X][KRAKEN-436] TC 4.05 execution from motive bridge returns value "IoT Module"	AT command
KRAKEN-444	LwM2M	[LwM2M] TC2.20 Root Certificate Verification failed	LwM2M
KRAKEN-438	APN	[LwM2M] After TC5.07 CLASS 3 APN test, client has an extra APN "VZWINTERNET"	LwM2M
KRAKEN-435	LWM2M Client	[LwM2M] Sometimes client cannot reconnect to server due to handshake process fail	LwM2M
KRAKEN-521	FOTA	[RC71][LWM2M] Fix FOTA download don't use class2 APN.	LwM2M
KRAKEN-535	LwM2M	Remove redundant registration update when receive 1/1/8 wap push	LwM2M
KRAKEN-502	AT&T LC	QCX216 patch for AT&T requirement CDR-SIML-350	AT&T
KRAKEN-431	AT&T LC	[RC7110][AT&T][AVL_DDR][LTE-BTR-1-3984][UE failed to camp on PLMN 310-110 4G network]	AT&T
KRAKEN-450	AT&T LC	[RC7110][AT&T][AVL_DDR][LTE-BTR-1-3982][HPPLMN scan when the EF-EHPLMN file is populated]	AT&T
KRAKEN-510	Thermal	[RC71XX][Thermal] add pa temp to thermal mitigation, patemplimits	Thermal
KRAKEN-513	CMUX	RC71 CMUX crashing at high baud rates	Crash
KRAKEN-511	CFUN	[RC7x][LwM2M] Device crash during lwm2m test	Crash
KRAKEN-523	Band list	[RC-71xx] AT BAND for VZW B12	AT command
KRAKEN-533	MQTT	[KRAKEN-533] MQTT differences between RC76 and RC71	AT command
KRAKEN-532	Certstore	[KRAKEN-532][RC71xx]remove password requirement for certstore and certdelete	AT command
KRAKEN-496	LPM	[RC71XX][Voltage][KRAKEN-496] add volt glitch detect, change volt limits	LPM
KRAKEN-493	ATE	[AT CMD] ATE1 to show echo type input character	AT command

KRAKEN-484	+KTCPSTAT	[AT CMD] When RC71 set as TCP server, +KTCPSTAT didn't accumulate received data if client send data to server for couple times.	AT command
KRAKEN-485	TCP	[AT CMD] Definition of maximum buffer when RC71 as TCP server needs to be defined.	AT command
KRAKEN-488	UDP	[AT CMD][KUDP]There is no notification to inform user next received package information after user read first package data.	AT command
KRAKEN-489	TCP	[AT CMD][KTCP]When RC71 set as TCP client, there is no notification to inform user next received package after user read first package data.	AT command
KRAKEN-482	QCCMGR QCCMGS	Add back QCCMGR and QCCMGS	AT Command
KRAKEN-479	+KTCP CFG	[AT CMD] When set KTCP CFG with incorrect restore_on_boot parameter, it will show CME_OPERATION_NOT_SUPPORT, but still save successfully.	AT Command
KRAKEN-414	+KTCPSTART	[RC71XX][KRAKEN-414]When RC71 set as TCP server, RC76 set as client, RC76 send data to RC71, RC71 will show content directly without +ktcpstart cmd	AT command
KRAKEN-116	+WESHDOWN	[RC71xx][KRAKEN-116]+WESHDOWN=1,4 persistently stored by default	AT command
KRAKEN-518	+KTCPSTART	KTCPSTART not sending data	AT command
KRAKEN-526	+WIFISCAN	Add AT command WIFISCAN	AT Command
		Re-Label from 01.02.09.06 to 01.02.10.00	Re-Label
KRAKEN-541	Terminal profile	[RC-71xx] Update terminal profile/Remove B71	PTCRB/GCF
KRAKEN-515	Verizon	[KRAKEN-515][RC7110][VZW][Motive][TC11.02] VZWINTERNET APN is restored automatically when the device reboots after FOTA completion	LwM2M
KRAKEN-538	AT Command	[RC71XX][JIRA][KRAKEN-538] +KTCPSTART not functioning as expected	AT command

3.1.5 Known Issues

Note: This section reflects known issues in Release 3.0 as of the Date of Generation (UTC) indicated in the Release 3.0 Release Identification section above.

Table 5. Known Issues – Release 3.0

ID	Issue	Description	Impacted Domains

4 Firmware Release 2.0

Release 2.0 updates Release 1.0 with Generic PRI.

4.1 Firmware Release Description

4.1.1 Firmware Release Identification

Table 6. Firmware Release Identification – Release 2.0

Component	Details
Firmware Version	SWI216C_01.02.08.00
Date of generation (UTC)	2024/03/01
IMEI SV	0
GSMA TS.25	2024.01.01
Chipset Vendor Stack Version	QCX216.FR.1.0-0070A1.1
Supported HW	RC7110, RC7120

4.1.2 Carrier Packages

Table 7. Carrier Packages – Release 2.0

Carrier	Firmware	Configuration	Comment
Approved			
Generic	SWI216C_01.02.08.00	000.006_000	Approved by Orange

4.1.3 Host Software Versions

The following tools were validated against this release.

Note: *Semtech recommends upgrading to newer Host Software releases when available. Refer to applicable software release notes for any compatibility restrictions.*

Table 8. Validated Host Software Tools

SW Tools Name	Version
Tool Package	71xx.1003

4.1.4 Software Changes

Table 9. Software Changes – Release 2.0

ID	Description	Impacted Domains
KRAKEN-11	IP AT Cmds	MRD
KRAKEN-16	Internal UDP	MRD
KRAKEN-17	Internal TCP	MRD
KRAKEN-19	Modem Status, Customization, and Reset Cmds	MRD
KRAKEN-60	AUTO-SIM Feature	MRD
KRAKEN-61	Temperature/Voltage Monitoring	MRD
KRAKEN-62	SIM AT Commands	MRD
KRAKEN-63	SWI Proprietary AT Commands	MRD
KRAKEN-64	MQTT AT Cmds	MRD
KRAKEN-65	Key Storage/Management for Secure Connections	MRD
KRAKEN-71	Device Services Third Party delta FOTA (+WDSTPF)	MRD
KRAKEN-69	Secure Delta FOTA	MRD
KRAKEN-72	Configure UART1 Power Management (+KSLEEP)	MRD
KRAKEN-73	Dynamic Update of TS.25 PLMN List	MRD
KRAKEN-74	I/O AT Cmds	MRD
KRAKEN-80	Critical Data Backup & Corruption Recovery	MRD
KRAKEN-82	Secure Debug	MRD
KRAKEN-83	Secure Boot - SWI Key	MRD
KRAKEN-89	TLS1.2	MRD
KRAKEN-91	Carrier (delta) FOTA	MRD
KRAKEN-112	The "OK" shall return after +++ is sent to escape the data session	MRD
KRAKEN-122	[IE12][Thermal] update parameter of thermal monitor	Thermal
KRAKEN-377	[RC71][LwM2M] LwM2M AT command	LWM2M
KRAKEN-378	[RC71][LwM2M] LwM2M Client function	LWM2M
KRAKEN-379	[RC71][LwM2M] LwM2M FoTA	LWM2M
KRAKEN-380	[RC71][LwM2M] LwM2M Configuration	LWM2M
KRAKEN-346	[RC7110][PTCRB/GCF][TS36.523-1/TC8.5.4.1] UE capability transfer / Success – Fail	Conformance
KRAKEN-348	[RC7110][PTCRB/GCF][TS36.523-1/TC9.2.1.2.3] Successful combined attach procedure / EPS service only / MSC temporarily not reachable – Fail	Conformance

KRAKEN-365	[RC7120][GCF][ETSI TS 102 230-1/TC5.2.3.2] SIM2- Electrical tests on contact C2: 1,8 V - 3 V – Fail	Conformance
KRAKEN-366	[RC7120][GCF][ETSI TS 102 230-1/TC5.2.4.2] SIM2- Electrical tests on contact C3: 1,8 V - 3 V – Fail	Conformance
KRAKEN-328	[RC7120][GCF][TS36.521-3/TC7.3.29_2] E-UTRAN FD-FDD Radio Link Monitoring Test for In-sync in DRX for UE Category 1bis – Fail	Conformance
KRAKEN-318	[RC7120][GCF][TS36.523-1/TC9.1.5.1] EMM information procedure – Fail	Conformance
KRAKEN-446	[RC7120][PTCRB/GCF] [3GPP TS 31.124/TC27.22.2] TERMINAL PROFILE items mismatch	Conformance

4.1.5 Known Issues

Note: This section reflects known issues in Release 2.0 as of the Date of Generation UTC) indicated in the Release 2.0 Release Identification section above.

Table 10. Known Issues – Release 2.0

ID	Description	Impacted Domains
KRAKEN-425	[AVL_DDR][LTE-BTR-1-6940][EPS update type is not combined LA/TA]	AT&T
KRAKEN-431	[AVL_DDR][LTE-BTR-1-3984][UE failed to camp on PLMN 310-110 4G network]	AT&T
KRAKEN-445	[AVL_DDR][LTE-BTR-1-3500][UE doesn't send NO SERVICE]	AT&T

5 Firmware Release 1.0

5.1 Firmware Release Description

5.1.1 Firmware Release Identification

Table 11. Firmware Release Identification – Release 1.0

Component	Details
Firmware Version	SWI216C_01.02.06.00
Date of generation (UTC)	2023/12/15
IMEI SV	01
GSMA TS.25	N/A
Chipset Vendor Stack Version	QCX216.FR.1.0-0063
Supported HW	RC7110, RC7120

5.1.2 Carrier Packages

Table 12. Carrier Packages – Release 1.0

Carrier	Firmware	Configuration	Comment
Test			
Generic	SWI216C_01.02.06.00	000.003_000	Release 1.0

5.1.3 Host Software Versions

The following tools were validated against this release.

Note: *Semtech recommends upgrading to newer Host Software releases when available. Refer to applicable software release notes for any compatibility restrictions.*

Table 13. Validated Host Software Tools

SW Tools Name	Version
Tool Package	71xx.1001

5.1.4 Software Changes

Table 14. Software Changes – Release 1.0

ID	Description	Impacted Domains
KRAKEN-8	Linux USB Driver	MRD
KRAKEN-9	Windows (USB) Driver	MRD
KRAKEN-10	USB Name (Device Descriptor)	MRD
KRAKEN-11	IP AT Cmds	MRD
KRAKEN-12	Internal HTTP/HTTP(S)	MRD
KRAKEN-13	Internal FTP/FTPS (Client only)	MRD
KRAKEN-14	CMUX over UART	MRD
KRAKEN-15	SMS	MRD
KRAKEN-16	Internal UDP	MRD
KRAKEN-17	Internal TCP	MRD
KRAKEN-18	PPP	MRD
KRAKEN-19	Modem Status, Customization, and Reset Cmds	MRD
KRAKEN-20	Dual SIM Single Standby (DSSS)	MRD
KRAKEN-22	Internal IP Protocol (IPv4/v6)	MRD
KRAKEN-24	3GPP UE Capable Release Compliance	MRD
KRAKEN-25	Cat1bis Data Throughput	MRD
KRAKEN-26	VID/PID	MRD
KRAKEN-28	Cat1bis Full Duplex	MRD
KRAKEN-29	USB Serial	MRD
KRAKEN-31	USB 2.0	MRD
KRAKEN-32	GPIO	MRD
KRAKEN-34	SIM Interfaces - UIM1 and UIM2	MRD
KRAKEN-35	UART	MRD

5.1.5 Known Issues

Note: This section reflects known issues in Release 1.0 as of the Date of Generation (UTC) indicated in the Release 1.0 Release Identification section above.

Table 15. Known Issues – Release 1.0

ID	Description	Impacted Domains
KRAKEN-372	Module failed to boot up if the power is removed during firmware download	Download
KRAKEN-296	UIM2 still enable after at!custom="UIM2ENABLE";0	AT Command
KRAKEN-368	Firmware downgrade is allowed (sftl/sftw)	Tool
KRAKEN-399	There was showed error message while query Emergency Shutdown setting status (without set any Emergency Shutdown setting before query)	AT Command

6 Related Documentation

Module resources, including product documentation, firmware packages and tools are published on The Source at <https://source.sierrawireless.com>.

Table 16. Reference Documents

Reference Document	Document #
[1] RC71xx Migration Guide	41114702
[2] RC71xx AT Command Reference	41114675
[3] RC71xx Product Technical Specification	41114670

7 Abbreviations and Definitions

Table 17. Abbreviations and Acronyms

Abbreviation / Acronym	Definition
CVE	Common Vulnerabilities and Exposures
DV	Design Verification
FDT	Firmware Download Tool
FTM	Factory Test Mode
QMI	Qualcomm MSM Interface Qualcomm Modem Interface