HL78xx 4.x

Customer Release Notes

Important Notice

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.

Safety and Hazards

Do not operate the Sierra Wireless modem in areas where cellular modems are not advised without proper device certifications. These areas include environments where cellular radio can interfere such as explosive atmospheres, medical equipment, or any other equipment which may be susceptible to any form of radio interference. The Sierra Wireless modem can transmit signals that could interfere with this equipment. Do not operate the Sierra Wireless modem in any aircraft, whether the aircraft is on the ground or in flight. In aircraft, the Sierra Wireless modem MUST BE POWERED OFF. When operating, the Sierra Wireless modem can transmit signals that could interfere with various onboard systems.

Note: *Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. Sierra Wireless modems may be used at this time.*

The driver or operator of any vehicle should not operate the Sierra Wireless modem while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some states and provinces, operating such communications devices while in control of a vehicle is an offence.

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Document History

Version	Date	Updates
R00.01	Dec 11, 2018	Creation for AHL78XX.2.1.0.0
R00.02	Jan 25, 2019	Creation for AHL78XX.2.3.0.0
R00.03	Feb 08, 2019	Creation for AHL78XX.2.3.1.0
R00.04	Feb 20, 2019	Creation for AHL78XX.2.4.1.0
R00.05	March 13, 2019	Creation for BHL78XX.2.5.1.0
R00.06	March 20, 2019	Creation for BHL78XX.2.5.2.0
R00.07	April 1, 2019	Creation for BHL78XX.2.5.3.0
R00.08	April 3, 2019	Creation for BHL78XX.2.5.4.0
R00.09	April 8, 2019	Creation for BHL78XX.2.5.5.0
R00.10	April 15, 2019	Creation for BHL78XX.2.5.6.1
R00.11	April 23, 2019	Creation for BHL78XX.2.5.8.0
R00.12	June 4, 2019	Creation for BHL78XX.3.4.1.0

Version	Date	Updates
R00.13	June 6, 2019	§3 Related Documents Update
R00.14	July 3, 2019	Creation for HL78XX.3.4.5
R00.15	July 16, 2019	Creation for HL78XX.3.5.0
R00.16	Oct 29, 2019	Creation for BHL78XX3.7.2.3
R00.17	Nov 15, 2019	Updated Known Issues for BHL78XX.3.7.2.3
R01.00	Feb 13, 2020	Creation for HL78XX.4.3.9.0
R01.01	April 21, 2020	Creation for HL78XX.4.4.6
R01.02	Aug 7, 2020	Creation for HL78XX.4.4.14
R01.03	Aug 31, 2020	Creation for HL78XX.4.4.17
R01.10	Aug 17, 2020	Creation for HL78XX.4.5.4
R01.11	Sep 22, 2020	Creation for HL78XX.4.4.13.0
R01.12	Nov 12, 2020	Added releases HL78XX.4.4.13.2 and HL78XX.4.4.12.0 Updated HL78XX.4.4.14.0 (replaced details relative to 4.4.6.0 with details relative to 4.4.13.0) Updated HL78XX.4.4.13.0 (replaced details relative to 4.4.6.0 with details relative to 4.4.12.0)
R01.13	Dec 02, 2020	Added release HL78XX.4.4.20
R01.14	Feb 24, 2021	Creation for HL78XX.4.6.8
R01.15a	June 30, 2021	Creation for HL78XX.4.6.9.4
R01.19	March 24, 2023	Creation for HL78XX.4.7.1.0
R01.20	July 3, 2023	Creation for HL78XX.4.7.1.1_BP1

1. Introduction

1.1. Document Scope

This document describes AirPrime HL7800, HL7800-M, and HL7802 firmware release changes and known issues in external customer releases.

2. Abbreviations and Definitions

Table 1. Abbreviations and Definitions

Abbreviation/Acronym	Definitions
ATIP	Internal IP services for direct communication over AT command interface, including AT+KTCP, AT+KUDP, AT+KHTTP, AT+KFTP
AVMS	Air Vantage Management Services
DTR	Data Terminal Ready
IMEI	International Mobile Equipment Identity
PPP	Point-to-Point Protocol
RRC	Radio Resource Control
SIM	Subscriber Information Module
SINR	Signal to Interference plus Noise Ratio
UART	Universal Asynchronous Receiver Transmitter
URC	Unsolicited Result Code
USB	Universal Serial Bus

3. Related Documentation

Table 2.   Related Documentation

Ref. #	Doc. #	Document title
[R-1]	41111821	AirPrime HL78xx AT Commands Interface Guide
[R-2]	41111094	AirPrime HL7800 Product Technical Specification (Deprecated. See [R-10])
[R-3]	41112256	AirPrime HL78xx Development Kit User Guide
[R-4]	2174229	AirPrime HL7800 Low Power Modes Application Note
[R-5]	2174260	HL7800/HL7800-M Firmware Upgrade Requirement for NV Backup
[R-6]	2174213	AirPrime HL78xx Customization Guide Application Note
[R-7]	2174259	AirPrime HL780x Firmware Update Methods Application Note
[R-8]	41112974	AirPrime HL7802 Product Technical Specification (Deprecated. See [R-10])
[R-9]	2174285	AirPrime HL7800-M Secure Boot Modem Verification Failure Prevention Application Note
[R-10]	41113770	AirPrime HL780x Product Technical Specification

4. Compatibility

4.1. Software Tools Compatibility

S/W Tools Name	Version
SFT	V2.11.2102.0

4.2. Hardware Limitations

4.2.1. HL7800 Hardware Limitations

Limitation	Description (What/When)	Impacted Functionality/ Sub-Functionality	Affected Hardware (Serial numbers)
Baseband	Baseband version is preliminary one	ESD Power consumption in sleep mode	T6840RRRRRRRRR

4.2.2. HL7802 Hardware Limitations

Limitation	Description (What/When)	Impacted Functionality/ Sub-Functionality	Affected Hardware (Serial numbers)
Slight desensitivity	Module experiences slight desensitivity on GSM1800/1900 low channel	Rx sensitivity	5P939RRRRRRRRR 5P949RRRRRRRRR 5P952RRRRRRRRR

5. Released Files and Download Processes

Firmware may be updated on existing units using the following methods:

- Full image upgrade over UART or USB
- Differential upgrade locally over AT command port (UART or USB)
- Remotely via AVMS, carrier LWM2M or other 3rd party server where applicable.

Detailed procedures are described in reference [R-7] - HL78xx Firmware Update Methods. Some limitations may apply.

6. HL78XX.4.7.x Release Description

6.1. HL78XX.4.7.1.1 Release Description

6.1.1. 4.7.1.1 Release Identification

Table 3. Package Release Information

	Services (ATI9)
Firmware Identification	HL7800.4.7.1.0 HL7800-M.4.7.1.0 HL7802.4.7.1.0
Components	Chipset baseline: RK02010200153 Legato RTOS: 18.09.6.ALT1250.rc12 atSwi: 18.09.6.ALT1250.rc12 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_129__96afe6c8fdf77327e86cfbe69d5cd6cdd4af3a89 M1 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_138_FW M1/2G MAC (HL7802): ALT1250_02_01_02_00_138_2G
Date of generation	2023/06/20 06:48:03
IMEI SV	19
TS 25 PLMN List	16-Jan-2023
Supported HW	HL7800, HL7802

Note: *This release contains modem version 4.7.1.0. All changes are in the Legato IP stack and do not impact operator certifications. Note that the FW identification returned by AT commands will still report 4.7.1.0*

6.1.2.   **4.7.1.1 Software Change Description**

This section describes all corrections or improvements integrated in 4.7.1.1 since the previous release (HL78XX.4.7.1.0).

ID	Title	Description	Impacted Domain
ATIP			
ALT1250-5136	Error return Initial TCP/UDP connection after eDRX	Make sure the module is attached to the network. Enable eDRX, then go to hibernation. After module wakes up, connect the module to a TCP/UDP server, then CME ERROR: 921 is returned.	
ALT1250-5135	Module crashes when connecting to HTTP TLS server without CA certificate	Configure PDP context and SS profile with server authentication. Configure HTTP connection, which do not load any certs, then module crashes.	
ALT1250-5117	Restore session on boot works incorrect after hibernation	Configure module as TCP/UDP server with the parameter <restore_on_boot>= 1 and start a connection. Enable eDRX, then go to hibernation. After module wakes up, session is not restored on boot.	
Tools			
LE-16892 ALT1250-5276	AVMS version compare error when version includes modem + legato version	The image combination is certed modem (4.7.1.0) + (updated legato tag). When putting the AVMS package on the AVMS server, the version compare error will happen due to the current AVMS engine only comparing the modem version, not modem+ legato version.	

7. HL78XX.4.7.1.0 Release Description

7.1. 4.7.1.0 Release Identification

8. Package Release Information

	Services (ATI9)
Firmware Identification	HL7800.4.7.1.0 HL7800-M.4.7.1.0 HL7802.4.7.1.0
Components	Chipset baseline: RK02010200153 Legato RTOS: 18.09.6.ALT1250.rc10 atSwi: 18.09.6.ALT1250.rc10 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_129__96afe6c8fdf77327e86cfbe69d5cd6cdd4af3a89 M1 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_138_FW M1/2G MAC (HL7802): ALT1250_02_01_02_00_138_2G
Date of generation	2023/02/03 03:41:33
IMEI SV	19
TS 25 PLMN List	16-Jan-2023
Supported HW	HL7800, HL7802

8.1.1. 4.7.1.0 Software Change Description

This section describes all corrections or improvements integrated in 4.7.1.0 since the previous release (HL78XX.4.6.9.4).

ID	Title	Description	Impacted Domain
EURY-4803	AT&T LwM2M Changes	• Removing the requirement for 20199 testing • New requirement that the LwM2M client must be <u>disabled</u> in the FW that receives TA • Must be able to reenable through a AT command as below: ▪ at+dmsupport=1 ▪ at+cfun=1,1	
EURY-4630	Docomo LwM2M fix	+DMAPPCMDIND: "WRITE_PARTIAL" is not shown under 101B+ Obj19 data	

Bugs Resolved			
RF			
EURY-4839	HL7802 unable to register while using GPRS or Cat-M RAT	2G Unit report many XO drift data that cause module unable to register on either the GPRS or Cat-M network.	
EURY-4378	Device fails to send TAU after communication error with SIM	When using SIM cards of specific vendors like ST Micro, the device may fail to communicate to the SIM cards when entering deep sleep mode. The device will not recover itself until next reboot.	
EURY-4489	Device does not perform a graceful detach	On SIM communication failure during hibernate wakeup, the device is not detaching from the NW, putting it out of sync with the network causing periods of no connectivity.	
Low Power Mode / Power Consumption			
EURY-4851	2G unit brick in low temperature	FW 4.6.9.8 are failing at low temp & unit bricks after units return to room temp	
EURY-4642	[4.6.10.0] GPIO6 is almost always low even when HL78 is out of service	This issue will impact the module consumption	
EURY-4490	Device continues in eDRX cycle even after missing pTAU (after having SIM errors)	Customer unit power consumption will not meet expectations	
EURY-4476	[HL7800]The module may freeze on wakeup after 'AT+CPWROFF=1'	Impact to customer power consumption	
EURY-4443	[HL7800] High current consumption after received RRCConnectionReject	Current consumption fails in the customer use case.	
EURY-1164	[HL7800] power consumption : LTE-M PSM 1h in hibernate mode above the target	PSM test with keysight (LTE-M) FW2.5.1.0 AT+CPSMS=1,,,162,10 /T3412Ext = 2min / T3324 20s / AT+KSLEEP=1,2 Expected result < 150µA Actual Result 396µA	
ATIP			
EURY-4845	Idle time stop condition	When customer configures GPRS connection again, idle timer will not stop then trigger PDP disconnection.	GPRS
EURY-4786	Using USB sends garbage characters when using AT+CGDCONT? AT command	Some garbage characters were shown from USB output	
EURY-4756	[HL7800-M] The module is reset during UDP data communication on FW4.6.10.1	System assert during UDP testing	UDP

Bugs Resolved			
EURY-4641	[HL7800] Module lost "-" in AT+KHTTPHEADER sending over 6644bytes	HL7800 could not receive the correct range of byte	HTTP
EURY-4583	Device is not receiving TLS data packet over 1500 bytes sent from AWS	When the number of received data in secure socket client is larger than terminal default size of 1629 bytes, +KTCP_STAT read command returns 0 and +KTCP_DATA URC is not presented after the 1629 bytes are read out.	TLS
EURY-4167 ALT1250-4317	Incorrect AT!SECBOOTCFG query response for secureboot enable value	Incorrect AT!SECBOOTCFG query response for secureboot enable value is observed	Secure boot
EURY-4137	"OK" is returned instead of "ERROR" when executing GNSSAD command with invalid cases for <mode>=0	When customer configures GPRS connection again, idle timer will not stop then trigger PDP disconnection	GNSS
EURY-4078	+KUDP_RCV shows incorrect IP and port for secure client	After a secure client receives data through the +KUDPRCV command, the following +KUDP_RCV URC shows the incorrect port and IP address of the server.	UDP
EURY-3856	TLS server does not verify client's certificate in case of mutual authentication	TLS server does not verify client's certificate in case of mutual authentication	TLS
EURY-3529	+KCGPADDR command does not display PDP address after reboot with restore on boot option	+KCGPADDR command does not display PDP address after session is up	IP
EURY-3304	Module doesn't appear to flush data on TLS Connections until Socket Closes	Customer cannot fully receive data from secure TCP socket	TLS
EURY-1029	Module doesn't provide its certificate to server when using <auth>=2 (or 3) in KSSLCRYPTO command	Module will send some cipher suites which are not in the Approved Cryptographic Standard when configuring all cipher suites during HTTPS connection.	HTTPS
Tools			
ALT1250-4254	Update +HWREV for new FSN format with factory code	"new" FSN format (known as 5305145) that differed from the "old" (known as 2102464) . The result was as follows: |Old format (2102464)|TTYWWDNNNNPPHH-BB| |New format (5305145)|TTYWWDNNNNPPFH-BB|	

8.1. Restrictions

This section presents additional information or restrictions that should be considered for 4.7.x.

Feature	Description (What/When)	Impacted Functionality/Sub-Functionality
RF TX/RX test	RF test commands +WMTXPOWER/+WMRXPOWER are not supported on NB1.	RX/TX Power (NB1)
Band restrictions	Band 17 is not supported on Cat-M1. Do not enable it.	Cat-M1 Bands
		Local delta upgrade
Module sometimes goes to BOOTROM mode on power cycle and/or after FOTA if secure boot enabled with older than 4.4 firmware		Stability
Cannot make PPP connection on USB port with echo enabled	With local echo enabled (ATE1) the Windows PPP client fails to connect over USB. Since local echo is enabled by default, it must be explicitly disabled. In some cases, concatenated AT commands may be used to disable echo. In general, these are not supported, but with EURY-2253, commonly used ATE0V1 does now disable echo.	PPP / USB

8.1. Known Issues

The following issues may be observed in the 4.7.x release.

ID	Title	Description	Impacted Domain
ALT1250-5135	[HTTP][TLS] Module crashes when connecting to HTTP TLS server without CA certificate	Module crashes when connecting to HTTP TLS server without CA certificate [FIXED in 4.7.1.1]	TLS
ALT1250-5136	[eDRX][TCP] CME ERROR: 921 is returned after the module wakes up and initiates a connection to the TCP server	CME ERROR: 921 is returned after the module wakes up and initiates a connection to the TCP server [FIXED in 4.7.1.1]	TCP/UDP
ALT1250-5117	[KTCPCFG] [KUDPCFG] Restore session on boot works incorrect after hibernate in RK2	Restore session on boot works incorrect after hibernate [FIXED in 4.7.1.1]	TCP/UDP
ALT1250-5348 EURY-3295	[HL78xx] [USB] [GNSS] In USB and SFPLOG, device is rebooted after using "AT+GNSSSTART=0"	When the device is in SFPLOG mode, there is no "3,3" in the returned result of "AT+GNSSSTART=0", position fix is unavailable and the device is rebooted	USB
ALT1250-5124	[CCID] ERROR is returned for AT+CCID=?	if without %CCID in the response content, will return (show) ERROR	ATIP
ALT1250-5144 EURY-3896	Module crashes after network lost during FOTA download	While a FOTA is in progress, if the RF network connection is lost, the module will crash/reboot. The FOTA will automatically resume from that point once the network connection is re-established.	FOTA
EURY-627 EURY-1288	CMUX issue	The current CMUX implementation has some limitations. · An online ATIP session (e.g. AT+KTCPSTART=1) on one DLC blocks all DLCs · A URC configured on one DLC appears on all DLCs	CMUX

9. HL78XX.4.6.x Release Description

9.1. HL78XX.4.6.9.4 Release Description

9.1.1. 4.6.9.4 Release Identification

Table 4. Package Release Information

	Services (ATI9)
Firmware Identification	HL7800.4.6.9.4 HL7800-M.4.6.9.4 HL7802.4.6.9.4
Components	Chipset baseline: RK02010200137 Legato RTOS: 18.09.6.ALT1250.rc8 atSwi: 44.01 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_120_c2a0a2a6e5dd44ea4710b32fe98e69dc72bab7ce M1 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_123_FW M1/2G MAC (HL7802): ALT1250_02_01_02_00_119_2G NBIoT MAC (HL7800, HL7802): ALT1250_02_01_02_00_111_NB
Date of generation	2021/06/15
IMEI SV	14
TS 25 PLMN List	7 June, 2021
Supported HW	HL7800, HL7802

9.1.2. 4.6.9.4 Software Change Description

This section describes all corrections or improvements integrated in 4.6.9.4 since the previous release (HL78XX.4.6.8).

ID	Title	Description	Impacted Domain
New Features & Improvements			
Security			
EURY-4394	Restore support for TLS-ECDHE-ECDSA-WITH-AES-256-GCM-SHA384 with no authentication	After change EURY-3129, it was determined that no authentication option is still required in a limited case, so it was restored. This restores support for +KSSLCRYPTO <auth>=0 for this cipher suite on TLS (+KTCP) and DTLS (+KUDP) only: AT+KSSLCRYPTO=x,8,2,16384,8,4,**0**	ATIP (SSL)
ALT1250-4161	FreeRTOS vulnerability CVE-2021-31571	A vulnerability in FreeRTOS relating to integer overflow in queue creation in the kernel. Although there is no known way to exploit this from any existing interfaces, the security patch was applied as a precaution.	OS
Network			

ID	Title	Description	Impacted Domain
EURY-4244	SNTP client configuration	To address known issue EURY-4265, a new command was added AT+KNTPCFG to enable and configure the SNTP client already implemented in previous releases, but without an external command to configure. This feature is disabled by default. See AT Command Guide Rev 15 for more details.	TLS / FOTA
Standards and Carrier compliance			
ALT1250-4003	Update TS.25 table	Update TS.25 PLMN table to 7-Jun-2021	GCF
EURY-4328	AT&T MTU size compliance	To comply with <CDR-CDS-112> for IPv6 MTU size, the default IPv6 MTU size was changed from 1358 to 1430 for +KCARRIERCFG=5 (AT&T).	AT&T
EURY-2086	Docomo LWM2M	Default configuration for Docomo LWM2M was added and LWM2M was enabled by default for +KCARRIERCFG=7 (Docomo).	Docomo
EURY-4423	Docomo LWM2M	To better align with Docomo LWM2M compliance, all Notify packets are sent as Confirmable.	Docomo

Bugs Resolved			
RF			
EURY-4401	MPLL unlock	Due to a hard coded MPLL mapping in firmware, a small percentage of units were not able to set an accurate frequency for the desired band, causing a loss of RF connectivity. In some cases this condition was temperature sensitive so units operational at room temperature or higher may not be at 10C or lower. The problem was most prominent for low frequency bands but was also observed in mid bands. This MPLL mapping is now dynamic to account for all module variations.	RF
EURY-4327	HL7800-M AT+KBNDCFG? return CME ERROR: 3	After change to EURY-2603, it was found that some old PRI HL7800-M would return CME ERROR: 3 to AT+KBNDCFG even though the command executed successfully. This was due to NBIoT band initialization value in old (2018 or earlier) SKUs. It is now corrected for all SKUs.	+KBNDCFG

Bugs Resolved			
EURY-4314	Manual RAT switch fails on Verizon when attached to NW	When attached to the Verizon network with LWM2M enabled, AT+KSRAT will cause the module to lockup and reset, but not switch RAT. This issue was introduced in 4.6.x releases. AT+KSRAT may now be used to change RAT without reset whether attached to the network or not.	RAT switch
Low Power Mode			
EURY-4468	Intermittent lockup on wakeup from PSM hibernate	Due to a flaw in handling a very specific timing sequence on PSM wakeup, the module could intermittently lockup when exiting PSM hibernate from WAKEUP pin. Repeatability was carrier dependent. This has been corrected.	PSM stability
ATIP			
EURY-4366	+KHTTPGET fails for empty header value	It was observed that getting an empty HTTP header key-value pair would return +KHTTP_ERROR:1,5. This issue has been corrected so empty header values are supported.	ATIP (HTTP)
Tools			
EURY-4303 / EURY-4335	SFT takes too long to synchronize when using UART0 with 4.x	A baud rate search was added to SFT to operate on UART1 for any baud rate set (EURY-3994). When operating over UART0 on 4.x firmware, the baud rate search would fail, adding ~100sec to the upgrade time. An option has been added to SFT: -B to select a specific baud rate to start (e.g. **-B 115200**) and not perform the search. This reduces the time to prompt for reboot to ~10 sec. Note this option is available in the 1-click by selection interface option 0 = UART0.	SFT

9.2. HL78XX.4.6.8 Release Description

9.2.1. 4.6.8 Release Identification

Table 5.   Package Release Information

	Services (ATI9)
Firmware Identification	HL7800.4.6.8.0 HL7800-M.4.6.8.0 HL7802.4.6.8.0

	Services (ATI9)
Components	Chipset baseline: RK02010200128 Legato RTOS: 18.09.6.ALT1250.rc4 atSwi: 43.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_117__accfd760c9dbf0f87bb2abbca37dbb404d2958a2 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_116_FW MAC (HL7802): ALT1250_02_01_02_00_116_2G
Date of generation	2021/02/13
IMEI SV	13
TS 25 PLMN List	7 Dec, 2020
Supported HW	HL7800, HL7802

9.2.2.   **4.6.8 Software Changes Description**

This section describes all corrections or improvements integrated in 4.6.8 since the previous major release (HL78XX.4.5.4). Firmware version 4.4.20 has been more recently released and alignment in functionality is shown.

ID	Title	Description	Impacted Domain
New Features & Improvements			
ATIP (Internal IP stack services)			
EURY-875	UDP bi-directional data mode	Analogous to TCP data mode initiated by AT+KTCPSTART, the command AT+KUDPSTART has been added. See AT Command Guide Rev 14 for more details.	ATIP (UDP)
EURY-2813	DTLS Client	DTLS has been added to AT+KUDP for secure data communications. This may be used in original UDP AT packet mode or bi-directional data mode as noted in EURY-875. AT+KUDPCFG adds option 3, secure client and optional cipher_index. AT+KSSLCRYPTO adds cipher_index to map profile to DTLS connection. See AT Command Guide Rev 14 for more details.	ATIP (secure UDP)
EURY-2814	TLS Server	Just as TCP may operate in either client or server mode, TLS server mode has been added to existing TLS client mode. AT+KTCPCFG adds modes 4 and 5 for Secure server and Secure child, respectively. See AT Command Guide Rev 14 for more details.	ATIP (secure TCP)
Location services			
EURY-3218	PoLTE – enable via AT command	The ability to disable/enable PoLTE via AT command was added (for evaluation purposes) as AT+GNSSCONF=12,[0,1] All other commands for PoLTE continue as Altair custom commands.	PoLTE

ID	Title	Description	Impacted Domain
EURY-2791	A-GNSS support	Command AT+GNSSAD has been added to support downloading of GNSS assistance data. See AT Command Guide Rev 14 for more details.	GNSS
EURY-3510	Global cell IDs for neighboring GSM cells for geolocation	In firmware version 4.5, AT+KCELL=2 was added for LTE cells. This adds the same functionality for GSM cells (HL7802 only). See AT Command Guide Rev 14 for more details.	+KCELL
EURY-3828	Add GNSSCONF configuration persistence	GNSSCONF configuration is now persistent across hibernate, reset, power cycle, and firmware upgrade.	GNSS
Security			
EURY-1975	AT command access restrictions	Internal AT commands deemed to make the module vulnerable to security exposure or destructive actions have been removed.	AT
EURY-3129 EURY-3908	Remove support for weak TLS encryption algorithms	The following changes were made: - Restrict key exchange algorithm to ECDHE only (no RSA). See <mkey_algo> parameter in +KSSLCRYPTO command. - Restrict encryption algorithm to CCM and GCM and make AES-128-GCM the default. See <enc_algo> parameter in +KSSLCRYPTO command. - Remove NULL from mac algorithms. See <mac_algo> parameter in +KSSLCRYPTO command. This restricts the set of cipher suites to: TLS-ECDHE-RSA-WITH-AES-128-GCM-SHA256 TLS-ECDHE-ECDSA-WITH-AES-128-GCM-SHA256 TLS-ECDHE-ECDSA-WITH-AES-256-GCM-SHA384 TLS-ECDHE-ECDSA-WITH-AES-128-CCM TLS-ECDHE-ECDSA-WITH-AES-256-CCM TLS-ECDHE-ECDSA-WITH-AES-128-CCM-8 TLS-ECDHE-ECDSA-WITH-AES-256-CCM-8	ATIP (SSL)
EURY-3338 EURY-3583	PenTest improvements	Issues identified in GE Penetration Test Report were addressed. No external vulnerabilities had been identified.	PenTest
EURY-2803	Ensure only mbedTLS library is used for random number generation	All random number generation is now done through mbedTLS.	Random numbers

ID	Title	Description	Impacted Domain
Other			
EURY-4235	Configurable UART1_RTS pull-up	Previously, when hardware flow control was used and to ensure RTS was not asserted while the host MCU was asleep/off, it was necessary to apply an external pull-up to pin C3. A configuration option has now been added to enable an internal pull-up with AT+KHWIOCFG=6,1. See AT Command Guide Rev 14 for more details.	UART
EURY-3251	Cat-M1 mechanism for signal quality notification on exit from eDRX hibernate	In firmware version 4.5, AT+KCELLMEAS URC was added for cell status data on exit from Cat-M1 PSM hibernate. This adds the same for Cat-M1 eDRX hibernate. See AT Command Guide Rev 14 for more details.	RF
EURY-3589	High temperature protection (minimum functionality mode)	AT+KTEMPMON was originally added to support auto shutdown and GPIO out indication on high temperature threshold. In this release, options to enter minimum functionality mode (AT+CFUN=0) and optionally also assert the GPIO output indication have been added. See AT Command Guide Rev 14 for more details.	Temperature monitoring
EURY-3471	SIM Hot Swap (LTE)	With SIM detect enabled, inserting an external SIM now automatically initializes it for LTE. No user intervention is required. For GSM, SIM hot swap is not yet supported (EURY-4036)	SIM
EURY-3564	Add +KUSBCOMP to NVBU	AT+KUSBCOMP configuration is added to the NVBU backup. To ensure restoration of +KUSBCOMP configuration, execute AT+NVBU=1 with this release or later.	NVBU
EURY-4102	Add +KSIMSEL to NVBU	AT+KSIMSEL configuration is added to the NVBU backup. To ensure restoration of +KSIMSEL configuration, execute AT+NVBU=1 with this release or later.	NVBU
Standards and Carrier compliance			
EURY-3765	Update IMEI SV	Update IMEI SV to 13.	GCF/PTCRB
ALT1250-4003	Update TS.25 table	Update TS.25 PLMN table to 7-Dec-2020	GCF
EURY-4277	B66 is reported as half duplex not supported by UE	PTCRB TS 36.523-1 8.5.4.1 failure due to band 66 capability reporting. This has been fixed.	PTCRB
See notes for 4.4.17, 4.4.20, 4.4.13.2	Carrier compliance	The previous release 4.5.4 was aligned with carrier compliance as of 4.4.14. This release includes full alignment with carrier compliance in 4.4 branches up to 4.4.20 and including 4.4.13.2.	Verizon, AT&T, Telstra
EURY-4142	Continuous reboot on AT&T NB1 Band 12	On AT&T NB1 since 4.4.14, attaching to Band 12 causes a chronic crash/reboot due to mishandling of MFBI indication. This has been fixed. For releases with this issue, configure Band 17 instead of Band 12.	AT&T

ID	Title	Description	Impacted Domain
EURY-3786	Crash/assert/freeze seen during Verizon SIM activation	In about 50% of cases during Verizon SIM activation, a stack overflow would cause an assert and reset starting the process over. This could result in very long activation times. This has been fixed.	Verizon
EURY-3989	Verizon NB1 FOTA failover to M1	In accordance with Verizon requirements, when Verizon LWM2M FOTA is initiated on NBIoT, the RAT is automatically switched to M1, if available, for the delta file download, and switched back to NBIoT upon completion. This feature is automatically enabled for Verizon carrier (+KCARRIERCFG=1) and disabled otherwise. It is not implemented for AirVantage FOTA.	Verizon
EURY-3783	AT&T LWM2M	CDR-DVM-4551 and CDR-DVM-4557 updated in 13340 v20.2 was added.	AT&T
EURY-3168	AT&T LWM2M Location Object	Velocity resource added to location object to satisfy AT&T LWM2M requirements.	AT&T
EURY-3275	AT&T AT+ODIS for LWM2M	Support for AT+ODIS per https://iotdevices.att.com/att-iot/IDthroughODIS.aspx	AT&T
EURY-1931	NB1 attach rejected on CSL network in HK	CSL rejected attach due to UE advertising support to the network for EIA0 in the Attach Message (with +KCARRIERCFG=0). This advertisement is now removed, and attach is successful. Note that this does not imply certification to operate on the CSL network.	CSL
Bugs Resolved			
RF			
EURY-3656	+KCELL=0 on 2G	A regression in firmware version 4.5 resulted in AT+KCELL=0 on 2G returning "+CME ERROR:60". This functionality is now restored.	+KCELL
EURY-3426 EURY-3452	Cannot attach to GSM with multi-RAT configuration	With GSM in the preferred RAT list (+KSELACQ) as the preferred option, an initial attach was attempted, but then dropped. GSM could only be used if manually selected (+KSRAT). GSM can now be automatically selected from the preferred RAT list.	+KSELACQ
EURY-4028	Stuck in +CEREG: 4 for > 30 min	On some modules, after a long period out of coverage (>90 sec) it would take a long time (2 hrs) to re-attach after coverage is restored.	Out of coverage recovery
EURY-3200	HL7802 cold boot time in GSM is ~15 sec	An internal error in initialization during boot sequence with GSM RAT enabled was delaying boot completion by ~15 sec. Many services such as ATIP were not available in this time. Cold boot time has been reduced to ~7 sec.	GSM boot
EURY-2603	Cannot set/query bands for non-selected RAT	Previously AT+KSRAT=<rat> was required to set bands (AT+KBNDCFG=<rat>,<mask>) or to query bands (AT+KBNDCFG?). AT+KBNDCFG can now be set for any band, and query displays configuration for all bands.	+KBNDCFG

ID	Title	Description	Impacted Domain
EURY-3241	HL7800 allows GSM enable	HL7800 allowed AT+KSRAT=2 even though GSM was not supported. Once set, RF was disabled. This option is no longer available.	+KSRAT
Low power mode			
EURY-3569 EURY-3610	+KUDP_DATA indication missing on wake from hibernate	Upon receipt of downlink data during eDRX PTW, the module should wake and send a URC to indicate to the host to read the data. In some cases, this indication arrived too early from the MAC processor and was lost. The configuration has now been changed to ensure URCs are reliably communicated.	eDRX
EURY-3194	Modem leaves eDRX mode after tower switch, will not return to eDRX after the switch	In areas of low coverage serviced by multiple cells, after multiple cell reselections, in rare occasions the module can no longer enter a low power state and requires a reset to recover. This has been corrected.	eDRX
EURY-3141	Module warm boots while performing periodic Tracking Area Update procedure on eDRX state	Module warm boots and activates LWM2M connection after performing periodic Tracking Area Update procedure on eDRX state (with eDRX URC disabled) resulting in more power consumed. Warm boot now occurs only when necessary for URCs or data.	eDRX
EURY-4164 EURY-4170 EURY-4241 EURY-4242	URC mistimed with RI	In some cases, when waking from hibernate on MT data a time gap of 300-400 msec was observed between the RI signal and URC indicating data arrived. RI might sometimes signal well before or after the URC. This caused unnecessarily long wake time before data could be processed or missed data as the host may not have been awake or have returned to low power mode. The timing has now been tightened up so that RI always occurs before the URC.	eDRX
EURY-1191 EURY-1261 EURY-2702 EURY-4247	Module cannot go back into hibernate mode anymore after ~250 PSM DH0 cycles	Sometimes on Cat-M1, but more reproducible on NB-IoT with PSM hibernate enabled, after several hundred PSM cycles, the unit will not return to hibernate and stop sending TAUs. In light hibernate, this condition would cause a reset. This has been corrected.	PSM
ATIP (internal IP stack services)			
EURY-3922	ATIP connections sometimes fail to pass data	It has been observed that in some cases an ATIP (e.g. +KTCP or +KUDP) connection would be established but could not pass data. The root cause was that the random source port selection was sometimes using reserved ports (<100). The solution was to ensure that random source ports be >2047.	ATIP (all)
EURY-3140	"KHTTP_ERROR: 1,6" is returned when performing POST data to https server	A missing delimiter in content-length in the header was causing a parsing error. This has been fixed.	ATIP (secure HTTP)
EURY-3103	Missing indication on HTTPS connection failure	Missing the URC +KHTTP_ERROR: 1,5 when the HTTPS connection could not be established. This is now displayed.	ATIP (secure HTTP)

ID	Title	Description	Impacted Domain
EURY-3183	HTTP format non-compliance	An HTTP non-compliance issue (Body replaced by Authorization header) has been identified with ATIP (HTTP) service. This has been corrected.	ATIP (HTTP)
EURY-4156	HTTP POST modifies the payload	Since firmware version 4.5, when a character sequence 0x0D,0x0D is in a chunked encoded payload, the second character is changed to 0x0A. This has been corrected.	ATIP (HTTP)
EURY-3183	"Authorization" is automatically added to the HTTP header	All HTTP Post/Put transactions put "Authorization: Basic Og== " in the header when username and password were not used. Impact on customer depends on whether the HTTP server ignores garbled base64 encoding of ":" colon character. This has been removed.	ATIP (HTTP)
EURY-3587	HTTP POST may drop data	In the case of HTTP chunked encoding, if the sequence "0<CR><LF><CR><LF>" occurs in the data payload, the chunk will be truncated. This has been corrected.	ATIP (HTTP)
EURY-3701	FIN causes premature socket termination after successful completion of +KHTTPPOST	In the case of HTTP chunked encoding, an unintended FIN packet would sometimes be sent to the server, thus terminating the socket prematurely. This has been corrected.	ATIP (HTTP)
EURY-4060	Additional <CR><LF> characters inserted in HTTP body if response is spread over multiple packets	Since firmware version 4.5, if an HTTP response is spread over multiple packets, additional <CR><LF> characters are inserted. This has been corrected.	ATIP (HTTP)
EURY-3810	Missing <CR><LF> between HTTP header and body data if body data is 0 bytes	In the case of 0 byte body, the <CR><LF> after the header was missing. <CR><LF> is now properly included for this case completing the fix for EURY-3182 in firmware version 4.5.	ATIP (HTTP)
EURY-4094 EURY-4197	Crashes whenever server returns unknown status for +KHTTPPOST	Previously, a non-standard HTTP status code from an HTTP post would cause the module to assert and reboot. +KHTTP_IND now displays the code as "Unknown status code".	ATIP (HTTP)
EURY-3665	UDP sent data includes partial EOF Pattern when data ends with multiple '+' characters	When sending UDP data ending multiple '+' characters and terminated by EOF Pattern, the first 2 characters of the EOF Pattern are included in the data. This has been fixed.	ATIP (UDP)
EURY-3447	AT+KIPOPT <wait time> behavior does not work for +KUDP with partial EOF pattern	In the case that the end of UDP data matches the start of the EOF Pattern, data delivery on timeout would not happen. This has been corrected.	ATIP (UDP)
EURY-4145	TLS sessions do not used assigned source port	When selecting a source port for a secure TCP or UDP client session, the selected source port would be ignored, and a random port selected instead. This has been corrected to use the source port selected.	ATIP (secure TCP, UDP)
EURY-3533	TCP sent data sometimes includes partial EOF Pattern	When sending TCP data, depending on the setting in +KIPOPT and timing of data sent, part of the EOF Pattern may be sent. This has been fixed.	ATIP (TCP)

ID	Title	Description	Impacted Domain
EURY-3946	Module cannot start 2 secure sessions simultaneously	Due to some changes in TLS memory allocation in firmware version 4.4.17 (4.5.x not affected), the number of ATIP TLS sessions possible was reduced to as little as 1, depending on the type of connection and security used. This has been increased to a guaranteed minimum of 2 concurrent ATIP connections or more depending on number and type of other secure connections (e.g. AirVantage or carrier LWM2M).	ATIP (secure)
EURY-4161	Unable to connect AWS secure socket on AT&T network	In the case of a secure connection where the UE has an IPv4 address and DNS resolves an IPv4 and IPv6 address for the server, the connection could not be established as only the IPv6 address was being passed up. A non-secure connection or secure connection with UE IPv6 address could be established. This has been corrected for either IPv4 or IPv6 UE or server address types.	ATIP (secure)
EURY-3907 EURY-3043	Modem reset during TCP activity	A memory leak was found under some TCP scenarios that eventually caused memory depletion and reset after a few hundred connections. The depletion occurred more quickly in marginal coverage. This has been corrected.	ATIP (TCP)
EURY-4194	+KTCPSTART hangs module if secure connection is not successful	With TLS enabled, AT+KTCPSTART=1 would hang on connection failure requiring a hard reset to recover. This would not happen with TLS disabled, or with AT+KTCPCNX=1. A TLS +TCPSTART failure now returns +CME ERROR without hanging.	ATIP (TLS/TCP)
EURY-3660	+KTCPSTART/+KTCPSND cannot properly resume using ATO	In the case where TCP data has been sent and terminated with EOF Pattern, returning to command mode, the connection could not be resumed with ATO. This is now supported.	ATIP (TCP)
EURY-3770	Empty UDP datagram closes connection	With TCP, an empty datagram signals socket closure. UDP was being handled the same way, but this is not correct per the standard. This disconnect for UDP is no longer initiated.	ATIP (UDP)
EURY-3400	Module returns duplicate response when check +KCNXTIMER	With both TCP server and UDP server configured on the same PDP context with restore_on_boot enabled, after reboot +KCNXTIMER query responded twice. It now returns one response.	ATIP
EURY-4186	Stored root certificate not persisted on upgrade from 4.4.x	Due to the extension to 4 root cert support in firmware version 4.5, AT+KCERTSTORE for 4.4.x or earlier would not carry forward on upgrade. Now (in 4.6) any previously programmed cert is set as the first of 4 certs. This does not work in reverse. A cert set in 4.6 is not persisted if downgraded to 4.4 or earlier.	ATIP (secure)

ID	Title	Description	Impacted Domain
EURY-3579	WatchDog interrupt triggers when receiving large file with +KFTP	Most internal IP watchdog issues were resolved in firmware version 4.5. Only an FTP receive that takes more than 160 seconds may trigger the watchdog and reboot. This corresponds to ~700 kB file over CAT-M1 in good coverage. Much larger files have also been shown to transfer successfully, however. This is now corrected.	ATIP (FTP)
EURY-3549 EURY-3608	+KFTPRCV hangs if offset is greater than file size	If attempting to FTP read more than the available file size, the AT interface would hang, requiring hard reset to recover. This has been fixed.	ATIP (FTP)
EURY-1103	Module frozen during 5 MB file sent to FTP server	Uploading a large file with AT+KFTPSND would eventually hang the device requiring a hard reset to recover. This has been fixed.	ATIP (FTP)
EURY-3591	+KFTPSND hangs after stress test	After about 30 minutes of repeatedly opening a connection, sending 8 bytes of data, and closing the connection, the AT port would lock up requiring a hard reset to recover. This has been fixed.	ATIP (FTP)
CMUX			
EURY-4062	All CMUX DLC ports are unresponsive to application AT commands after hibernate wakeup	Since firmware version 4.4.2, application level AT commands such as ATIP (AT+KTCP*, AT+KUDP* etc.) cause CMUX to hang when executed after a wake from hibernate. A hard reset is required to recover. This has been fixed.	CMUX
USB			
EURY-3853 EURY-4188	AT+KUSBCOMP=1,5,0,0 does not persist	When USB was initially introduced it was expected to be a primary interface so safeguards were put in place to ensure that it would support AT commands. But as a secondary debug port this is not needed so should not be forced. Now configurations that do not include AT interface are allowed and persisted, for example AT+KUSBCOMP=1,3,4,5	USB
AT command interface			
EURY-4008	[PPP] LCP Handshake takes too long	A ~6 second delay in establishing a PPP connection was observed. This has been reduced to ~1 second.	PPP
EURY-3611	AT+CRCES blocks AT port indefinitely in GSM	When operating on GSM, AT+CRCES causes the module to be unresponsive, requiring a hard reset to recover. This has been fixed.	+CRCES
EURY-4031	Missing x0D (CR) from first URC after boot	After reset or when waking from hibernate (eDRX or PSM), the first URC was missing the leading 0x0D character. This has been corrected.	URC
EURY-3857	AT+KTEMPMON=? truncated if no GPIO in use	AT+KTEMPMON=? should return all available GPIOs, but if that list is too long it gets truncated and so is incomplete. This has been corrected.	+KTEMPMON

ID	Title	Description	Impacted Domain
EURY-3822	AT+KCUS changes not persistent	Changes to +KCUS were being reverted on every boot. The KCUS handler has been reworked to resolve this.	+KCUS
EURY-3655	AT+KEDRXCFG accepts invalid parameters	AT+KEDRXCFG returns OK even for invalid input parameters. In some cases, those values are written leading to unpredictable behavior. This has been fixed.	+KEDRXCFG
EURY-2771	+KTEMPMEAS is returned 4 times on enabling	+KTEMPMEAS URC was returned 4 times consecutively after enabling URC even though the threshold was not crossed. Now only 1 instance of URC is issued and only after crossing the temperature threshold.	+KTEMPMON
EURY-2397	+IPR? returns an incorrect baud rate value in USB port	Previously, AT+IPR? on USB would return a large negative number. It now returns ERROR.	+IPR
Reliability and Stability			
EURY-3827	HL7800-M 1-click firmware upgrade causes NV corruption	A combination of HL7800-M with patch applied for SecBoot Modem Verif Fail (2174285) and 1-click update was corrupting NV. As a workaround, the SFT -e option is required and was embedded in all 1-clicks for HL7800-M. A permanent fix was applied that does not required the SFT -e option.	NV
EURY-3958	V25Ter profile commands do not work after reset stress test	AT&V and AT&W (read/write V25Ter profile) stop working after 10000 loops of: AT&V / AT&W / AT+CFUN=1,1 This indicates a corrupt config file. This was fixed as part of EURY-3827.	NV
EURY-3464	Lockup with eDRX under variable temperature	In an extended stress test cycling between -20C to +55C over some days, the module may lock up consuming 10-20 mA and require a hard reset to recover. This has been fixed.	Lockup
EURY-2702 EURY-4247	Module with setting +KSREP: 1,0 does not return to hibernate after several PSM cycles	On Cat-M1 with +KSREP=1,0 (minimum delay enabling UART on wake from hibernate) and PSM hibernate enabled, after several hundred PSM cycles, the unit will not return to hibernate. This has been corrected.	PSM
EURY-3910	Cannot enter low power state after switching from eDRX to PSM	In some use cases it is necessary to switch between eDRX and PSM for optimal power saving vs. reachability. It was found in rare cases that this switch would put the module in a state where it could not enter low power mode. This has been corrected.	Low power mode
EURY-3194 EURY-3726	Cannot enter low power state in eDRX after multiple cell reselections in weak coverage	After multiple cell reselections with eDRX enabled, the module is eventually blocked from entering low power state. It would recover with a manual reset or sometimes on its own after a few minutes. This has been fixed.	Low power mode
EURY-3528 EURY-3855	Sometimes crash and may lock up on soft reset	In rare cases (0.1%) AT+CFUN=1,1 would cause a crash, and in about half of those cases the module would lock up requiring a power cycle to recover. This has been corrected.	Soft reset

ID	Title	Description	Impacted Domain
Ready to Connect			
EURY-4050	UE is slow to attach to a new network after NW Detach	When a NW Detach is received with Sierra SIM, there was an 8 minute delay before attempting to attach to a new network. This delay has been removed.	Sierra SIM
EURY-3872	Fail to attach after SIM RESET	During initial Sierra SIM activation, there is a SIM reset initiated from the network side. Once reset, the UE is expected to re-attach, but it wasn't. This is now fixed and activation completes successfully with a re-attach.	Sierra SIM (activation)
EURY-2799 EURY-3825 EURY-3972 EURY-4025	Sierra SIM not detected on wake-up from Hibernate	Due to an incompatibility between Sierra SIM behavior on power up and warm boot procedure, SIM connectivity was lost briefly on wake from hibernate. This has been fixed.	Sierra SIM (Low power mode)
EURY-3509	Rare lockup on 2G attach	In rare cases (< 10%), attaching on 2G with Sierra SIM may crash. In some of those cases it may lockup and require a hard reset to recover. This has been fixed.	Sierra SIM (stability)
EURY-3291	Sierra SIM after power cut may not re-attach	In some cases when using Sierra SIM, if there is a sudden power cut, the module would sometimes boot in AT+CFUN=4 state and require manual AT=CFUN=1 to re-attach. This has been fixed.	Sierra SIM (power cut)
AirVantage			
EURY-3505	FOTA failure: "WDSI:15" observed when carrier LWM2M registered	On some units where Carrier LWM2M is enabled, AV FOTA update would fail and the FOTA client would become unresponsive. The issue was not always reproducible and could be avoided by disabling Carrier LWM2M client. This has been fixed. AV FOTA is now reliable with LWM2M carrier client also enabled. The same fix is also present in firmware versions 4.4.17 and 4.4.20, but not 4.5.4.	AirVantage FOTA
EURY-3444	Synchronization job failed when module attaches to GSM network	Using AirVantage services, a synchronization operation could be scheduled on server side to retrieve a large number of monitored data values from a platform. On HL7802, this operation always failed for some objects when GSM bearer is used. The operation now always succeeds.	AirVantage FOTA
EURY-2957 EURY-3809 EURY-4095	Sometimes, Job status is still "In Progress" while module made a connection to AVMS server	For very small delta files, the FOTA completes sooner than can be handled and the upgrade gets out of sync with the server. This has been corrected for all delta image sizes.	AirVantage FOTA
EURY-3904	AV FOTA Package Download Starts after WDSS=1,0	Due to retries to establish a connection, the command to stop it may not take effect and the FOTA will continue. This has been corrected.	AirVantage / Sierra SIM

ID	Title	Description	Impacted Domain
Carrier LWM2M			
EURY-4187	+DMEVENT not working	Since firmware version 4.5, +DMEVENT URCs have not been working for carriers other than LGU+. This has been restored to work for all carriers supporting LWM2M. See AT Command Guide Rev 14 for more details.	Carrier LWM2M
EURY-4088	LWM2M activity with new SIM activation taking too long	Verizon SIM activation would take up to 10 minutes due to LWM2M activity. This has been reduced to 60-70 seconds if no delays are introduced due to network issues.	Verizon LWM2M
IO			
EURY-3717	Intermittent GPIO2 not toggling for CEREG changes with multiple cell reselections	In rare cases, expected +CEREG indications were missed because GPIO2 was not asserted. This has been corrected.	GPIO2
EURY-3792	GPIO2 does not return to input state when RI is disabled	If GPIO2 is enabled in +KRIC and then disabled, it remains an output. This has been corrected to revert to input, no pull when disabled.	GPIO2
Local upgrade			
EURY-4127 EURY-4178	Cannot upgrade firmware by 1K-XMODEM in Linux (Windows is OK)	Since firmware version 4.4.0, local delta firmware upgrade with X-MODEM (AT+WDSD) may fail for a delta image size that satisfies the criterion 4096*n+m, where m<1024. This has been corrected for starting images 4.6.5 or later. See Known Issues for 4.4.x/4.5.x firmware.	Local delta upgrade
EURY-3281	Firmware upgrade from 3.x with USB enabled loses USB configuration	If USB is enabled on firmware version 3.x (e.g. 3.7.2.3) and firmware is upgraded to 4.x (e.g. 4.5.4), the USB configuration is reset to a default value that is inactive so there is no communication. The default USB setting now has AT interface enabled.	USB
Admin and diagnostics			
EURY-2826	Module intermittently fails to generate backup with automatic mode enabled	With NVBU auto-restore enabled (AT+NVBU=3,1), if there is no backup on boot up, one should be automatically created. This was observed to be true on the first test iteration (erase backup AT+NVBU=0 and reset), but not on subsequent iterations. It has now been corrected.	+NVBU
EURY-3720	NVBackup is initiated with "Reboot limit reached, forcing restore" message	With NB-IoT RAT set (AT+KSRAT=1) and NVBU autorestore enabled (AT+NVBU=3,1), the autorestore operation was incorrectly triggered resulting in user configuration being reverted to backup. This has been fixed.	+NVBU
EURY-4040	Some parts of +CCID are missing, only 12 bytes are shown	AT+CCID output was truncated at a non-decimal character if present. All characters are now displayed.	+CCID

ID	Title	Description	Impacted Domain
EURY-4121	AT+WMTXPOWER/ +WMRXPOWER do not properly support Band 66	Band 66 was exceeding an internal limit and therefore not being handled correctly by RF diagnostic commands. This has been corrected.	RF test
EURY-4283	option to disable flow control on UART0 in LOG mode	In the past it was found that flow control was required on most host platforms to capture logging at high speed and so the default was made to enable it. This, however, prevented hosts without hw flow control from capturing logs at any speed. An option has been added to disable hw flow control in LOG mode for such hosts to collect logs at lower speeds. See AT Command Guide Rev 14 for more details.	LOG
Tools			
EURY-3994	SFT firmware upgrade not possible at 921600 when module UART1 set to 460800	Due to the limited baud rate selection, if the AT port rate was set to 460800, it was necessary to select this as the upgrade speed to properly sync. SFT now scans all baud rates to find the current setting before upgrading at the selected speed.	SFT
EURY-4293	SFT v2.10.2101.0 will not upgrade C0 modules	In a previous SFT release a chip ID check was added to SFT to ensure the firmware would match the ALT1250 version, but old C0 chips were not included. This has now been added.	SFT
EURY-4185	SFT exits before upgrade complete	SFT would exit after completing firmware download, but before confirming that the module had completed programming. It now waits to confirm that the module has fully rebooted, and that the UART1/AT port is responsive.	SFT

9.3. Restrictions

This section presents additional information or restrictions that should be considered for 4.6.x.

Feature	Description (What/When)	Impacted Functionality/Sub-Functionality
RF TX/RX test	RF test commands +WMTXPOWER/+WMRXPOWER are not supported on NB1.	RX/TX Power (NB1)
Band restrictions	Band 17 is not supported on Cat-M1. Do not enable it.	Cat-M1 Bands

Feature	Description (What/When)	Impacted Functionality/Sub-Functionality
Local delta upgrade from 4.4 may not work for Linux 1K Xmodem	Due to a bug introduced in firmware version 4.4 and fixed in 4.6 (EURY-4127), local delta upgrades from 4.4 using Linux 1K Xmodem (AT+WDSD with linux **sx -vv -k** option) will fail if the delta file size satisfies 4096*n + m, m outside the range [-31, 1024]. Summary of common **HL7800-M** upgrade paths: | From	To	m	Support
---	---	---	---
4.4.14	4.6.8	-24	yes
4.4.17	4.6.8	124	yes
4.4.13.2	4.6.8	2708	no
4.4.14	4.6.9.4	460	yes
4.4.17	4.6.9.4	160	yes
4.4.13.2	4.6.9.4	1616	no | The workaround for image sizes that are not supported is to use XMODEM on Windows host, or use SFT, or FOTA.	Local delta upgrade
Module sometimes goes to BOOTROM mode on power cycle and/or after FOTA if secure boot enabled with older than 4.4 firmware	For modules already shipped with secure boot enabled before July 31, 2020, if power is cycled, it will sometimes (~10% occurrence) reboot in BOOTROM mode and require another power cycle to boot properly. This is most easily reproducible during a FOTA, but not a necessary condition. This may also occur upon exit from first hibernate after a FOTA (see Known Issue EURY-4065 below for newer modules). Modules that have secure boot enabled while running 4.4 firmware will not exhibit this problem, but it is not possible to fix modules that have already had secure boot enabled with older firmware. Modules shipped from Sierra after July 31, 2020 with secure boot enabled, *regardless of firmware version*, will not have this problem *(EURY-3231).*	Stability
Cannot make PPP connection on USB port with echo enabled	With local echo enabled (ATE1) the Windows PPP client fails to connect over USB. Since local echo is enabled by default, it must be explicitly disabled. In some cases, concatenated AT commands may be used to disable echo. In general, these are not supported, but with **EURY-2253**, commonly used ATE0V1 does now disable echo.	PPP / USB

9.4. Known Issues

The following issues may be observed in the 4.6.x release.

ID	Title	Description	Impacted Domain
EURY-627 EURY-1288 EURY-3609 EURY-3874 EURY-3968	CMUX issues	The current CMUX implementation has some limitations. • An online ATIP session (e.g. AT+KTCPSTART=1) on one DLC blocks all DLCs • A URC configured on one DLC appears on all DLCs • DLCs sometimes stop responding and CMUX needs to be restarted • CMUX does not work at 9600 baud	CMUX
EURY-3132 EURY-3637	UDP data dropped when entering hibernate mode	If the WAKEUP pin is de-asserted immediately after OK from +KUDPSND, the data may not be sent before the module enters hibernate state and in this case the data is lost. Until this is fixed, the WAKEUP pin must be kept asserted for an extra 100 ms after OK to ensure that the data is delivered. Even longer in CE mode.	ATIP (UDP)
EURY-2958	Persistent atIP socket silently fails initialization on warm boot, non-default PDN	In the case of a connection configured as persistent, only the 1st PDN will persist across a hibernate cycle. Others will not persist and will need a reset to recover.	ATIP (UDP, TCP)
EURY-3856	TLS server does not verify client's certificate in case of mutual authentication	In the case of TCP server configuration with TLS and mutual authentication, the server does not authenticate the client certificate.	ATIP (TLS server)
EURY-3896 / EURY-4441	Module crashes after network lost during FOTA download	While a FOTA is in progress, if the RF network connection is lost, the module will crash/reboot. The FOTA will automatically resume from that point once the network connection is re-established.	FOTA (stability)
EURY-4468	Module lockup on exit from PSM hibernate on AT&T	When using PSM and lowest power state (AT+KSLEEP=1,2) on AT&T network, it was observed that after multiple wake and sleep cycles triggered by the WAKEUP pin, the module would lock up in a high power consumption state and not respond to AT commands. A hard reset is required to recover from this state. A workaround is to disable carrier LWM2M with AT+DMSUPPORT=0. This has been fixed in 4.6.9.4.	PSM / Low power stability
EURY-4065	Module crash/reset on first exit from hibernate after FOTA	After successful FOTA and next exit from hibernate, the module will crash/reset. It will resume normal operation from then on. For older modules with secure boot enabled, a reset may not occur automatically, and a hard reset or power cycle is required. (See note on BOOTROM in limitations above).	FOTA / Low power (stability)

ID	Title	Description	Impacted Domain
EURY-4265 EURY-4278	Secure connection failure on 2G without NITZ	Some 2G carriers do not support network time (NITZ). A consequence of this is that any secure connections using time to validate certificates (including AirVantage FOTA) will fail. This can be confirmed by querying AT+CCLK? After attaching to the network and seeing: +CCLK: "00/00/00,00:00:00-00" To work around this problem, time must be set manually with AT+CCLK. For 4.6.9.4 a new command AT+KNTPCFG has been added to enable and control the NTP client for getting time of day without NITZ. It is disabled by default. See EURY-875 above for details.	TLS / FOTA
EURY-4314	Manual RAT switch fails on Verizon when attached to NW	When attached to the Verizon network with LWM2M enabled, AT+KSRAT will cause the module to lockup and reset, but not switch RAT. To work around this issue, use the reset option, e.g. AT+KSRAT=0,1 to change RAT, or first detach from the network with AT+CFUN=4, then re-attach after switch with AT+CFUN=1.	RAT switch
EURY-4338	AT+KBND? command displays wrong active band when module registered on network with band 66	When band 66 is active, AT+KBND? displays band 3.	AT+KBND?
EURY-4440	Spurious transmit on reset after TX test command used in LOG mode	If configured with AT+SWITRACEMODE=LOG and TX test mode (AT+WMTXPOWER) is used, a short (1 sec) Tx burst may occur on first soft reset (AT+CFUN=1,1) after disabling TX test mode. This does not occur for other +SWITRACEMODEs or if hard reset or power cycle is used. Note that +SWITRACEMODE=LOG should only be used when capturing RF logs for troubleshooting, and be returned to CUSTOMER mode afterwards.	TX test

10. HL78XX.4.5.4.0 Release Description

10.1. Release Identification

Table 6. Package Release Information

	Services (ATI, AT%VER)
Firmware Identification	HL7800.4.5.4.0 HL7800-M.4.5.4.0 HL7802.4.5.4.0
Components	Chipset baseline: RK02010200101 Legato RTOS: 18.09.5.ALT1250.rc4 2020/05/29 19:39:14 atSwi: 35.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_94__31f472b547df5417a8f942dd14d4c8cb9bf65395 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_91_FW MAC (HL7802): ALT1250_02_01_02_00_91_2G
Date of generation	2020/07/22 23:37:54
IMEI SV	10
TS 25 PLMN List	8 June, 2020
Supported HW	HL7800, HL7802

10.2. Software Changes Description

This section describes all corrections or improvements integrated in 4.5.4 since the previous release (HL78XX.4.4.14.0). Note that 4.5.4 and 4.4.14 were released at similar times and have the same Altair baseline integrated.

ID	Title	Description	Impacted Domain
New Features & Improvements			
Various	Legato 18.09.5.ALT1250.rc4	Upgrade Legato framework from 18.09.5.ALT1250.rc4. Includes: • LE-14459 – Improved internal stability • LE-14380 – Using AirVantage services, a platform can send monitored data values to the AirVantage server. When the AirVantage server retrieves the current SIM mode, its value is not correct when the +KSIMSEL=20 mode is set.	
EURY-62 / EURY-64	Auto RAT switching	In previous releases, the Radio Access Technology (RAT) could only be selected manually via AT+KSRAT. A new command is now added (AT+KSELACQ) to assign a RAT preference list such that failure to attach on the preferred RAT will allow others to be scanned automatically. See AT Command Guide for more details.	RF

ID	Title	Description	Impacted Domain
EURY-66	Change RAT without reset	In previous releases, the Radio Access Technology (RAT) could be selected manually via AT+KSRAT, but a reset was required for the new setting to take effect. A reset is not required now.	RF
EURY-2298 / EURY-3232	AT command to request PTW (paging time window) when initiating eDRX	The existing standard command AT+CEDRXS allows configuration of some of the eDRX parameters, but does not include Paging Time Window (PTW), which is hard coded to 1.28sec. The command AT+KEDRXCFG is created to perform the same function but also adds configurability of PTW and the ability to configure inactive access technologies. AT+KEDRXCFG=[[<mode>],[,[<ActType>][,[<eDRXCycle>][,**[<PTW>]**]]]] In the 4.4 release this feature was experimental, but now the setting is persistent and so can be used commercially. Note that changing the setting does not get immediately renegotiated with the network. An attach (e.g. after radio off/on or reset) or TAU refresh (after timeout) is required. See AT Command Guide for more details.	RF Network / Power save
EURY-2959	Add global cell IDs for neighboring LTE cells for geolocation	With AT+KCELL=0, global cell ID was only provided for camped cell, so the output could not be used for reliable geolocation. A new version of the command AT+KCELL=2 has been added to provide global cell IDs for surrounding cells. See AT Command Guide for more details.	Location services
EURY-997 / EURY-2948	Four concurrent connected secure sockets	Previously, only one root certificate could be stored, but to support 4 concurrent connected secure sockets, up to 4 root certs may be required. To support this, AT+KCERTSTORE now includes index 0-3 for root cert and AT+KSSLCRYPTO adds an extra parameter to specify the root cert index. See AT Command Guide for more details.	ATIP / Security
EURY-3186	Remove authentication modes "No authentication" and "Provide client certificate to server" from <auth> parameter in +KSSLCRYPTO command	These +KSSLCRYPTO options were determined to be insecure and potentially misleading, and as a result have been removed. See AT Command Guide for more details.	ATIP / Security
EURY-887	HTTP chunked transfer encoding	HTTP host chunked transfer encoding support has been added. See IETF RFC 2616 and AT Command Guide on +KHTTPPOST for more details.	ATIP / HTTP
EURY-2109	+KTCP_ACK support	Support for **URC-ENDTCP-enable** in +KTCPCFG has been added. See AT Command Guide for more details.	ATIP / Indication
EURY-2061	Notification with new signal quality data on exit from PSM hibernate	Rather than having the host poll AT+KCELLMEAS after exiting PSM hibernate, a URC is added to provide that information proactively when available. See AT Command Guide for more details.	RF Status

ID	Title	Description	Impacted Domain
EURY-3235	UART boot time configuration	While significant improvements were made in release 4.4 to align CTS and +KSUP:0 with AT readiness, it became apparent that in some cases it was preferable to make the AT port available sooner, if only for limited (and indeterminate) functionality. For this purpose, a second optional parameter was added to the AT+KSREP command. The timeout specified in msec determines the max time the UART will be held disabled while handlers are being initialized. The default value of 4000 msec is greater than the longest time for full AT ready as measured empirically. A value of 0 may be specified to have the UART enabled as soon as some 3GPP commands are available. See the AT Command Guide for more details.	AT / CTS
EURY-2031	Add EID to +CCID	Previously, AT+CCID? would return only ICCID for Sierra SIM. EID has been added. See the AT Command Guide for more details.	SIM Status
EURY-3342	Potential infoleak in AT+CGAUTH	In code analysis, a potential infoleak was discovered in AT+CGAUTH and fixed. No practical exploit of this flaw has been found.	Security
ALT1250-3716	AT!PRIID	Add support for AT!PRIID to display SKU information	AT
EURY-3466	AT+KDRXCFG	Add support to configure DRX cycle length. See the AT Command Guide for more details.	LTE
Standards and Carrier compliance			
EURY-3287	Update IMEI SV	Update IMEI SV to 10.	GCF/PTCRB
ALT1250-3780	Update TS.25 table	Update TS.25 PLMN table to 8-Jun-2020	GCF
Bugs Resolved			
EURY-3489	Cannot re-attach with CHAP enabled	PPP authentication settings (AT+WPPP) were not persisted for some carrier configurations and so re-attach would fail if CHAP is required. These authentication settings are now persisted for all carriers.	Connectivity
EURY-3386	Module awoken when close and reopen AT port with Sleep and Lite Hibernate configured	UART DTR pin was not correctly mapped to the proper sleep state. This has been corrected.	Power save / sleep
EURY-595	Module enters hibernate with DTR control configured	If DTR control is configured with AT+KSLEEP=0,2 the module should be restricted to light hibernate, but was entering hibernate. This has been corrected. Now AT+KSLEEP=0,2 is the same as AT+KSLEEP=0,1.	Power save / DTR
EURY-3254	Dash/hyphen character getting dropped from TCP data stream using +++	Updates were made to preserve proper data order when appending +++ to the data stream.	ATIP (TCP)

ID	Title	Description	Impacted Domain
EURY-1794 / EURY-2393 / EURY-3042 EURY-3254 / EURY-3230	Dash/hyphen character getting dropped from TCP/UDP data stream	For ATIP sessions (e.g. +KTCP, +KUDP, etc.) online data is terminated with a predefined EOF pattern. By default, this pattern contains several '-' characters that, if also included in actual data was sometimes processed as EOF pattern and not forwarded on. Substantial improvements were made in 4.4. The remaining known corner cases have been addressed in 4.5.	ATIP
EURY-3366	Module fails to get HTTP headers with basic authentication	A regression was introduced in release 4.4 where HTTPS basic authentication method per IETF RFC 7617 does not work. This has been corrected.	ATIP (HTTP)
EURY-3326	Module remains in data mode after sending data size equal to value of <size> parameter in +KFTPSND command	A regression was introduced in release 4.4 where the module would not send data and did not automatically return to command mode after the command in some conditions. This has been corrected.	ATIP (FTP)
EURY-1663	Module sends NULL at some last bytes when using <size> parameter in KFTPSND command	When sent bytes was less than +KFTPSND size, NULL pad bytes were being appended. This padding has been removed. Only actual send bytes are sent.	ATIP (FTP)
EURY-3182	HTTP format non-compliance	An HTTP non-compliance issue has been addressed with ATIP (HTTP) service: • Missing empty line after http-header	ATIP (HTTP)
EURY-3134	Domain name limited to 46 characters	AT+KTCPCFG was limited to domain names up to 46 characters. That limit has now been raised to 127 characters.	ATIP (TCP)
EURY-2528	Module cannot receive data from FTP server when using <offset> in +KFTPRCV command	When FTP receive offset is used, some servers return server code 125, others 150. Only server code 150 was handled. Both are now handled.	ATIP (FTP)
EURY-1134	Can't abort an FTP download	Previously, there was no way to abort an FTP download in progress. Abort is now supported via EOF Pattern, +++, or DTR (if so configured).	ATIP (FTP)
EURY-2211	Module cannot send TCP data (100KB) after some successful attempts during stress testing)	After multiple successful +KTCPSND transfers of 100 kB files, a +CME ERROR: 923 error is returned. This has been corrected.	ATIP (TCP)
EURY-2587 / EURY-2875 / EURY-3449	WatchDog interrupt triggers when receiving large file with ATIP	ATIP data send/receive transactions (TCP, HTTP) that took more than 160 seconds would trigger the watchdog and reboot. This corresponds to ~700 kB file over CAT-M1 in good coverage. This issue has been fixed for TCP and HTTP. There is still an outstanding issue with FTP (EURY-3579).	ATIP stability
EURY-2182	"+KUDP_NOTIF: 1,8" is not returned when data sent is larger than data configured	When bytes to send in +KUDPSND was less than bytes sent in data mode, no +KUDP_NOTIF: 1,8 indication was received. This has been corrected.	ATIP (UDP)
EURY-2614	AT+KTCPSND stress test failed	Continuously sending data with AT+KTCPSND would eventually cause "KTCPNOTIF: 1,8" and "CME ERROR: 923" due to internal queue overflow. This has been corrected.	ATIP stability
EURY-1129 / EURY-3175	GPIO2 is not toggled consistently for +CEREG or SMS notifications	Coming out of hibernate, +CEREG or SMS indication was not triggering GPIO2 in most cases when configured to do so with AT+KRIC. This has been fixed.	RF status

ID	Title	Description	Impacted Domain
EURY-2749	Unexpected voltage spike on TX_ON signal when enter/exit eDRX hibernate	A voltage spike was being observed on TX_ON for some platforms on every transition to/from eDRX hibernate. This line now has an internal pull down applied to reduce the spike behavior.	RF status
EURY-3199	AT+KSRAT returns ERROR if RAT unchanged	Previously, if AT+KSRAT=<value> was executed where value=current RAT, it would return ERROR. It now returns OK.	AT / RAT selection
EURY-3189	FOTA download does not automatically resume after power loss	If power was lost during an AirVantage FOTA download and rebooted, a manual AV connection was required for FOTA download to resume. This has been corrected so the FOTA download is restarted automatically.	AirVantage FOTA
EURY-3148	Incorrect IMSI pushed to AirVantage	Using AirVantage services, a platform can connect to the AirVantage server. This server can retrieve some data on platform side, like IMSI. If the used SIM is the external one with a Sierra SIM or if the used SIM is eSIM, the IMSI that the platform sends to the AirVantage platform could be the currently inactive one. This has been corrected.	AirVantage / Sierra SIM
EURY-3131	AVMS does not display negative altitude correctly	A small negative altitude was reporting a very large value on AirVantage Application Data. This now reports accurately to within approximately 20m.	AirVantage / Monitor data
EURY-2975	Cannot select "Router IP Addresses" resource of the object 4 on AVMS server in dataset	Using AirVantage services, monitored data can be retrieved. The "Router IP addresses" option was missing from the server UI. This option is now included.	AirVantage / Monitor data
EURY-3139	AT&K3 does not return OK after entering AT&K3 command many times	Repeated executions of AT&K3 would eventually return +CME ERROR: 4. It now always returns OK.	AT port stability

10.3. Restrictions

This section presents additional information or restrictions that must be considered.

Feature	Description (What/When)	Impacted Functionality/Sub-Functionality
Enable pin for external DCDC	Before using +KWIOCFG to activate this feature, you must send AT Commands below: AT+KGPIOCFG=8,0,2 (Set GPIO8 output high) OK AT+KGPIO=8,1 OK	IO Configuration
New pin output for monitoring HL7800 status	Before using +KWIOCFG to activate this feature, you must send AT Commands below: AT+KGPIOCFG=6,0,2 (Set GPIO6 output high) OK AT+KGPIO=6,1 OK	IO Configuration
RF TX/RX	Commands +WMTXPOWER/+WMRXPOWER are not supported on NB1.	RX/TX Power (NB1)

Feature	Description (What/When)	Impacted Functionality/Sub-Functionality
PWR_ON_N	PWR_ON_N Managed feature is disabled, HL7800/HL7802 starts as soon as VBAT is applied.	Module start sequence
Band restrictions	Band 17 is not supported on Cat-M1. Do not enable it.	Cat-M1 Bands

10.4. Known Issues

The following issues may be observed in the 4.5.4 release.

ID	Title	Description	Impacted Domain
EURY-3100 / EURY-3121 / EURY-3231	Module sometimes goes to BOOTROM mode on power cycle if secure boot enabled with older than 4.4 firmware	For modules already shipped with secure boot enabled, if power is cycled, it will sometimes (~10% occurrence) reboot in BOOTROM mode and require another power cycle to boot properly. This is most easily reproducible during a FOTA, but not a necessary condition. Modules that have secure boot enabled while running 4.4 firmware will not exhibit this problem, but it is not possible to fix modules that have already had secure boot enabled with older firmware. *Modules shipped from Sierra after July 31, 2020 with secure boot enabled, regardless of firmware version, will not have this problem (EURY-3231).*	Stability
EURY-3132	UDP data dropped when entering hibernate mode	If the WAKEUP pin is de-asserted immediately after OK from +KUDPSND, the data may not be sent before the module enters hibernate state and in this case the data is lost. Until this is fixed, the WAKEUP pin must be kept asserted for an extra 100 ms after OK to ensure that the data is delivered.	ATIP (UDP)
EURY-3183	HTTP format non-compliance	An HTTP non-compliance issue has been identified with ATIP (HTTP) service: • Body replaced by Authorization header	ATIP (HTTP)
EURY-3579	WatchDog interrupt triggers when receiving large file with +KFTP	Most internal IP watchdog issues have been resolved in 4.5. Only now an FTP receive that takes more than 160 seconds may trigger the watchdog and reboot. This corresponds to ~700 kB file over CAT-M1 in good coverage. Much larger files have also been shown to transfer successfully, however. The root cause is under investigation.	ATIP stability
EURY-1741 / EURY-2768	CMUX corruption	Data corruption issues over CMUX have been observed in the following scenarios: • When HW flow control asserted by host • With a customer driver These conditions may be interrelated, but that is still under investigation. They are specific to a particular host stack and not generally reproducible.	CMUX

ID	Title	Description	Impacted Domain
EURY-1558	Cannot make dial-connection via module with USB port with echo enabled	With local echo enabled (ATE1) the Windows PPP client fails to connect over USB. Since local echo is enabled by default it must be explicitly disabled. In some cases, concatenated AT commands may be used to disable echo. In general, these are not supported, but with **EURY-2253**, commonly used ATE0V1 does now disable echo.	PPP / USB
EURY-3505	FOTA failure: "WDSI:15" observed when carrier LWM2M registered	On some units where Carrier LWM2M is enabled, AV FOTA update will fail and the FOTA client will be unresponsive. The issue is not always reproducible, and improvements are seen by disabling Carrier LWM2M client	AirVantage FOTA
EURY-3444	Synchronization job failed when module attaches to GSM network	Using AirVantage services, a synchronization operation could be scheduled on server side in order to retrieve a large number of monitored data values from a platform. On HL7802, this operation always fails for some objects when GSM bearer is used. The operation should always succeed.	AirVantage FOTA
EURY-2799	Internal SIM not detected after exiting hibernate in PSM mode	It may happen that upon exit from hibernation, the verification of the EF-EPSLOCI file in SIM will fail and as a result, the SIM appears as not detected. Action is being taken to skip verification if no changes occurred.	SIM status

11.   HL78XX.4.4.x Release Description

11.1.   HL78XX.4.4.20.0 Release Description

11.1.1.   Release Identification

Table 7.   Package Release Information

	Services (ATI, AT%VER)
Firmware Identification	HL7800.4.4.20.0 HL7800-M.4.4.20.0 HL7802.4.4.20.0
Components	Chipset baseline: RK02010217108 Legato RTOS: 18.09.4.ALT1250.rc4 2020/08/10 17:27:43 atSwi: 30.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_17_100__341e6ce7cdf510f5416ef0bbf9f5a5891d550b02 MAC (HL7800, HL7800-M): ALT1250_02_01_02_17_98_FW MAC (HL7802): ALT1250_02_01_02_17_98_2G
Date of generation	2020/10/08 22:49:59
IMEI SV	12
TS 25 PLMN List	May 11, 2020
Supported HW	HL7800, HL7802

11.1.2.   Software Changes Description

This section describes all corrections or improvements integrated in 4.4.20 since the previous release (HL78XX.4.4.17.0).

ID	Title	Description	Impacted Domain
Bugs Resolved			
EURY-3808 EURY-3743 EURY-3804 EURY-3754 EURY-3685 EURY-3575	Incremental updates on Altair Baseline to: RK_02_01_02_17_108	Sierra Firmware 4.x releases are all based on Altair RK2.1.2 code stream. This release contains incremental improvements in carrier compliance. Includes: Verizon • NB1 data upload performance • NB1 OOB-FOTA intermittent failure • NB1 new UICC activation intermittent failure AT&T • LWM2M Factory Reset • NB1 AT+CPIN? Returns SIM Ready • LWM2M Connectivity Extension Object	Verizon AT&T
EURY-3933	Verizon LWM2M bootstrap fails	Incorrect DNS handling occurred when bootstrapping to an IPv4-only LWM2M server. This was corrected.	Verizon

ID	Title	Description	Impacted Domain
EURY-3827	NV corruption after firmware upgrade	On HL7800-M with patch to resolve to fix EURY-3398 on older releases, it was necessary to include the -e option in SFT to avoid possible NV corruption on upgrade and has been included in all 1-click upgrade tools for affected releases. This firmware change removes the need to use the -e option in SFT.	NV
EURY-3895	AT&T LWM2M DTLS ID	Support was added to auto populate the AT&T LWM2M DTLS ID to simplify factory provisioning	AT&T

11.2. HL78XX.4.4.17.0 Release Description

11.2.1. Release Identification

Table 8. Package Release Information

	Services (ATI, AT%VER)
Firmware Identification	HL7800.4.4.17.0 HL7800-M.4.4.17.0 HL7802.4.4.17.0
Components	Chipset baseline: RK02010217106 Legato RTOS: 18.09.4.ALT1250.rc4 2020/08/10 17:27:43 atSwi: 30.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_98__3be41b9b2ae81eea201ce089dd9ad62cc0c35485 MAC (HL7800, HL7800-M): ALT1250_02_01_02_17_96_FW MAC (HL7802): ALT1250_02_01_02_17_96_2G
Date of generation	2020/08/25 00:15:51
IMEI SV	12
TS 25 PLMN List	May 11, 2020
Supported HW	HL7800, HL7802

11.2.2. Software Changes Description

This section describes all corrections or improvements integrated in 4.4.17 since the previous incremental release HL78XX.4.4.14.0.

ID	Title	Description	Impacted Domain
Bugs Resolved			
Various EURY-3631 EURY-3750 EURY-3698 EURY-3519 EURY-3722 EURY-1191 EURY-3541	Incremental updates on Altair Baseline to: RK_02_01_02_17_106	Sierra Firmware 4.x releases are all based on Altair RK2.1.2 code stream. This release contains incremental improvements in power consumption, stability, and carrier compliance. Includes: • Fix corner case where DH0 timer calculation was incorrect, leaving the system stuck in DH0 state. Observed during field testing. • Fix an issue where repeated downloads may cause a data stall and loss of data connectivity. Issue was related to a memory leak during a handover • Fix a regression observed in interim (unreleased) releases leading to a crash in eDRX • Fix occasional freeze in PSM during NBIoT when timer is > 1.5h • Fix issue on Verizon where data connectivity fails after AT+COPS=2 then AT+COPS=0	All
EURY-3505	Intermittent memory management failure with AVMS	Fix corner case where an assert could sometimes occur when memory was released by AirVantage when other services are active	AirVantage

11.3. HL78XX.4.4.14.0 Release Description

11.3.1. Release Identification

Table 9. Package Release Information

	Services (ATI, AT%VER)
Firmware Identification	HL7800.4.4.14.0 HL7800-M.4.4.14.0 HL7802.4.4.14.0
Components	Chipset baseline: RK02010200101 Legato RTOS: 18.09.4.ALT1250.rc3 2020/03/02 10:50:25 atSwi: 30.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_94__31f472b547df5417a8f942dd14d4c8cb9bf65395 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_91_FW MAC (HL7802): ALT1250_02_01_02_00_91_2G
Date of generation	2020/07/02 23:50:43
IMEI SV	09
TS 25 PLMN List	May 11, 2020
Supported HW	HL7800, HL7802

11.3.2. Software Changes Description

This section describes all corrections or improvements integrated in this release since the previous incremental release HL78XX.4.4.13.0.

ID	Title	Description	Impacted Domain
Standards and Carrier compliance			
EURY-3402	AT&T carrier compliance improvements	Corrections in: • LWM2M issues • Protocol Stack	AT&T

11.4. HL78XX.4.4.13.2 Release Description

11.4.1. Release Identification

Table 10. Package Release Information

	Services (ATI, AT%VER)
Firmware Identification	HL7800.4.4.13.2 HL7800-M.4.4.13.2 HL7802.4.4.13.2
Components	Chipset baseline: RK02010216101 Legato RTOS: 18.09.4.ALT1250.rc3 2020/03/02 10:50:25 atSwi: 30.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_91__addeecb2a882ba381913f96f3f1427637ffd62d3 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_89_FW MAC (HL7802): ALT1250_02_01_02_00_89_2G
Date of generation	2020/09/07 07:06:20
IMEI SV	09
TS 25 PLMN List	May 11, 2020
Supported HW	HL7800, HL7802

11.4.2. Software Changes Description

This section describes all corrections or improvements integrated in this release since release HL78XX.4.4.13.0

ID	Title	Description	Impacted Domain
Standards and Carrier compliance			
EURY-3687	Telstra carrier compliance improvements	Addressed issue affecting NB1/CAT-M that could cause UE to be unable to resume UL data transfer after a low-level failure.	RF Network
		Resolved issue affecting NB1 that could cause UE to send the wrong status report and stop downlink data.	RF Network

11.5. HL78XX.4.4.13.0 Release Description

11.5.1. Release Identification

Table 11. Package Release Information

	Services (ATI, AT%VER)
Firmware Identification	HL7800.4.4.13.0 HL7800-M.4.4.13.0 HL7802.4.4.13.0
Components	Chipset baseline: RK0201020099 Legato RTOS: 18.09.4.ALT1250.rc3 2020/03/02 10:50:25 atSwi: 30.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_91__addeecb2a882ba381913f96f3f1427637ffd62d3 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_89_FW MAC (HL7802): ALT1250_02_01_02_00_89_2G
Date of generation	2020/06/30 07:01:46
IMEI SV	09
TS 25 PLMN List	May 11, 2020
Supported HW	HL7800, HL7802

11.5.2. Software Changes Description

This section describes all corrections or improvements integrated in this release since the previous major release HL78XX.4.4.12.0

ID	Title	Description	Impacted Domain
Standards and Carrier compliance			
EURY-3594	Telstra carrier compliance improvements	Telstra carrier compliance features have been added when AT+KCARRIERCFG=13 • RRC Inactivity Timer value of 35 sec (changed from 15 sec). Updated *on upgrade.*	Telstra

11.6. HL78XX.4.4.12.0 Release Description

11.6.1. Release Identification

Table 12. Package Release Information

	Services (ATI, AT%VER)
Firmware Identification	HL7800.4.4.12.0 HL7800-M.4.4.12.0 HL7802.4.4.12.0

	Services (ATI, AT%VER)
Components	Chipset baseline: RK0201020099 Legato RTOS: 18.09.4.ALT1250.rc3 2020/03/02 10:50:25 atSwi: 30.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_91__addeecb2a882ba381913f96f3f1427637ffd62d3 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_89_FW MAC (HL7802): ALT1250_02_01_02_00_89_2G
Date of generation	2020/06/23 21:49:20
IMEI SV	09
TS 25 PLMN List	May 11, 2020
Supported HW	HL7800, HL7802

11.6.2. Software Changes Description

This section describes all corrections or improvements integrated in this release since the previous major release HL78XX.4.4.6.0

ID	Title	Description	Impacted Domain
New Features & Improvements			
EURY-3439	Security improvements	Implemented central entropy pool which is initialized at Sierra factory and collects entropy from several sources during runtime. Entropy pool is used by the pseudo random number generator.	Security
Standards and Carrier compliance			
EURY-3190 / EURY-3403 / EURY-3270 / EURY-3252	AT&T carrier compliance improvements	Corrections in: • LWM2M issues • Protocol Stack	AT&T
EURY-3305 / EURY-3576 / EURY-3573 / EURY-3354 / EURY-3067 / EURY-3062 / EURY-2524 / EURY-1699	Verizon carrier compliance improvements	Corrections in: • LWM2M issues • NBIoT issues	Verizon
EURY-3389 / EURY-3392 / EURY-3409 / EURY-3543	Telstra carrier compliance improvements	Telstra carrier compliance features have been added when AT+KCARRIERCFG=13 • NBIoT ePCO enabled • Connected Mode Mobility disabled in Cat-M1 *on upgrade*	Telstra
EURY-3080	LGU+ carrier compliance improvements	Following corrections: • Module-initiated Network Detach now when wrong PIN entered three times	LGU+
Bugs Resolved			

ID	Title	Description	Impacted Domain
EURY-3398	HL7800-M stuck in boot loop after power cycle stress test	It has been found that certain exception cases, such as abnormal power failure, would generate onboard logging in flash. For HL7800-M, these logs would eventually be written into the unused flash segment reserved for the NBIoT image, and cause a subsequent boot failure for secure boot enabled modules. A full firmware download is necessary to recover. Steps can be taken to prevent this flash sector from being written. See [R-9] AirPrime HL700-M Secure Boot Modem Verification Application Note to configure shipped units to prevent this issue.	Stability
EURY-2794	Fast Registration inadvertently disabled	Despite having fast registration (MRU) enabled in the factory, when +KCARRIERCFG was being set to anything other than Verizon, this feature was being disabled. As a result, cold boot scan times could be up to 10x longer, depending on number of bands configured. This has now been corrected to always use MRU as the first preference. Further, in cases where it has been disabled by an affected firmware version (introduced in 3.5.0) it will be corrected automatically on upgrade to 4.4.13 (and later) / 4.5.4 (and later).	RF Scan
EURY-3535	Module cannot attach again if SIB14 access barring has ever been applied	If the SIB14 access barring is applied by the network at the time of Attach, the module cannot attach even after the access barring is released. A reset was required to recover. This scenario is now handled without user intervention.	LTE Connectivity
EURY-3375	NV Backup file cannot be generated without entering <parti_id> parameter	AT+NVBU=0 should generate a NV backup file (second parameter omitted). A bug was introduced in release 4.4.0 where the second parameter was required for the command to succeed. The second parameter has been restored to optional for this command. This is also addressed in 4.4.11 and later 4.4.x firmware versions.	NV Backup

11.7.   Restrictions

This section presents additional information or restrictions that must be considered.

Feature	Description (What/When)	Impacted Functionality/Sub-Functionality
Enable pin for external DCDC	Before using +KWIOCFG to activate this feature, you must send AT Commands below: AT+KGPIOCFG=8,0,2 (Set GPIO8 output high) OK AT+KGPIO=8,1 OK	IO Configuration

Feature	Description (What/When)	Impacted Functionality/Sub-Functionality
New pin output for monitoring HL7800 status	Before using +KWIOCFG to activate this feature, you must send AT Commands below: AT+KGPIOCFG=6,0,2 (Set GPIO6 output high) OK AT+KGPIO=6,1 OK	IO Configuration
RF TX/RX	Commands +WMTXPOWER/+WMRXPOWER are not supported on NB1.	RX/TX Power (NB1)
PWR_ON_N	PWR_ON_N Managed feature is disabled, HL7800/HL7802 is starting as soon as VBAT is applied.	Module start sequence

11.8. Known Issues

The following issues have been observed in the 4.4.x releases.

ID	Title	Description	Impacted Domain
EURY-3100 / EURY-3121 / EURY-3231	Module sometimes goes to BOOTROM mode on power cycle if secure boot enabled with older than 4.4 firmware	For modules already shipped with secure boot enabled, if power is cycled, it will sometimes (~10% occurrence) reboot in BOOTROM mode and require another power cycle to boot properly. This is most easily reproducible during a FOTA, but not a necessary condition. Modules that have secure boot enabled while running 4.4 firmware will not exhibit this problem, but it is not possible to fix modules that have already had secure boot enabled with older firmware. *Modules shipped from Sierra after July 31, 2020 with secure boot enabled, regardless of firmware version, will not have this problem (EURY-3231).*	Stability
EURY-3189	FOTA download does not automatically resume after power loss	If power is lost during an AirVantage FOTA download and the module reboots (not in BOOTROM as noted above), the FOTA download will not resume automatically. A manual reconnection to the AirVantage server is required: AT+WDSS=1,1	AirVantage FOTA
EURY-3132	UDP data dropped when entering hibernate mode	If the WAKEUP pin is de-asserted immediately after OK from +KUDPSND, the data may not be sent before the module enters hibernate state and in this case the data is lost. Until this is fixed, the WAKEUP pin must be kept asserted for an extra 100 ms after OK to ensure that the data is delivered.	Internal IP
EURY-1794 / EURY-2393 / EURY-3042 / EURY-3254	Dash/hyphen character getting dropped from TCP/UDP data stream	For ATIP sessions (e.g. +KTCP, +KUDP, etc.) online data is terminated with a predefined EOF pattern. By default, this pattern contains several '-' characters that, if also included in actual data, was sometimes processed as EOF pattern and not forwarded on. While some improvements have been made, corner cases still exist for data ending in dash characters.	Internal IP

ID	Title	Description	Impacted Domain
EURY-3182 / EURY-3183	HTTP format non-compliance	Some HTTP non-compliance issues have been identified with internal HTTP service: • Missing empty line after http-header • Body replaced by Authorization header	Internal IP / HTTP
EURY-2875	WatchDog interrupt triggers when receiving large file with ATIP	Any internal IP data send/receive transaction (TCP, FTP, HTTP) that takes more than 160 seconds will trigger the watchdog and reboot. This corresponds to ~700 KB file over CAT-M1 in good coverage.	Internal IP stability
EURY-1741 / EURY-2768	CMUX corruption	Data corruption issues over CMUX have been observed in the following scenarios: • When HW flow control asserted by host • With a customer driver These conditions may be interrelated, but that is still under investigation. They are specific to a particular host stack and not generally reproducible.	CMUX
EURY-1558	Cannot make dial-connection via module with USB port with echo enabled	With local echo enabled (ATE1) the Windows PPP client fails to connect over USB. Since local echo is enabled by default it must be explicitly disabled. In some cases, concatenated AT commands may be used to disable echo. In general, these are not supported, but with EURY-2253, commonly used ATE0V1 does now disable echo.	PPP / USB
EURY-3505	FOTA failure: "WDSI:15" observed when carrier LWM2M registered	On some units where Carrier LWM2M is enabled, AV FOTA update will fail and the FOTA client will be unresponsive. The issue is not always reproducible, and improvements are seen by disabling Carrier LWM2M client *Resolved in 4.4.17, 4.4.20, and 4.6.x firmware.*	AirVantage FOTA

12. History

12.1. HL78XX.4.4.6.0 Release Description

12.1.1. Release Identification

Table 13. Package Release Information

	Services (ATI, AT%VER)
Firmware Identification	HL7800.4.4.6.0 HL7800-M.4.4.6.0 HL7802.4.4.6.0
Components	Chipset baseline: RK0201020088 Legato RTOS: 18.09.4.ALT1250.rc3 2020/03/02 10:50:25 atSwi: 30.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_80__b8247bc6f15eaf43cfdf7605486de028995374aa MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_81_FW MAC (HL7802): ALT1250_02_01_02_00_81_2G
Date of generation	2020/04/10 18:01:58
IMEI SV	09
TS 25 PLMN List	17 February 2020
Supported HW	HL7800, HL7802

12.1.2. Software Changes Description

This section describes all corrections or improvements integrated in this release since the previous major release HL78XX.4.3.9.0.

ID	Title	Description	Impacted Domain
New Features & Improvements			
	Updated Altair Baseline in Firmware releases 4.x	Sierra Firmware 4.x is based on Altair RK2.1.2 release, providing incremental improvements in power consumption, stability, and carrier compliance. (Sierra Firmware 3.x releases were based on Altair RK2.1.1 release.)	All
EURY-2746 / EURY-3053	Proprietary RAI Command	Added AT+KNMPSD to support a non-standard Release Assistance Indication feature to help in power saving. The UE user may call this command to locally release RRC after the application has completed all data transactions. This allows the UE to enter a low power state sooner. It is supported for Cat-M1 and NB1. See AT Command Guide for more details.	RF Network / Power save

ID	Title	Description	Impacted Domain
EURY-2298	AT command to request PTW (paging time window) when initiating eDRX	The existing standard command AT +CEDRXS allows configuration of some eDRX parameters, not including Paging Time Window (PTW), which is hard coded to 1.28 sec. The command AT+KEDRXCFG is created to perform the same function but adds configurability of PTW. AT+KEDRXCFG=[[<mode>],[,[<ActType>][,[<eDRXCycle>][,[<PTW>]]]]] See AT Command for more details.	RF Network / Power save
EURY-1486	UDP Data URC	Support has been added to display received data in a URC. This is enabled via AT+KUDPCFG parameter <data_mode>=1. When enabled, received UDP data is indicated by: +KUDP_DATA: <session_id>, <ndata_available>, <udp remote address>, <upd remote port>, <data> See latest AT command guide for more details. Due to an internal limitation, max URC size is 511 bytes. If the data payload causes the URC to exceed that size, it is delivered in multiple URCs.	Internal IP
EURY-675	AT parser not accepting extra spaces between parameters	For some AT commands, parameters delimited by commas could not also include spaces. Spaces before or after commas are now supported.	AT parser
EURY-2253	ATE0V1 to disable echo	Although concatenated AT commands are not supported in general, there is a specific need to support ATE0V1 to disable echo for some legacy dialup scripts.	AT parser
EURY-115	GNSS concurrence with cellular	In the initial GNSS implementation, it was necessary to stop the cellular interface before starting GNSS. It is now possible to start a fix with cellular interface enabled in eDRX or PSM. Any LTE activity will still take precedence and temporarily interrupt the GNSS session, but it will restart automatically.	GNSS
EURY-2164 / EURY-2781	Simultaneous UART + USB	Previously, AT+KUSBCOMP settings would unconditionally disable all UARTs. UART and USB operation are now possible simultaneously, if the services requested on USB do not conflict with that on UART. For example, AT_PPP is typically mapped to UART1, so AT+KUSBCOMP=1,3,4,5 can map other services to USB while AT_PPP remains on UART1. See AT Command Guide for more details.	USB
EURY-2865	Increase RSA KEY File Size	The previous RSA key size was limited to 3000 bytes in AT+KPRIVKSTORE. This limit has been increased to 4096 bytes.	Security
EURY-2865	Create additional entropy sources	Additional sources of entropy have been added to improve product security.	Security
EURY-1979 / EURY-2084	Trace mode security improvements, part 1	In past releases, the HL78 was tested and shipped with the debug console enabled. This enables some capabilities that that are not needed in deployed units. A firmware upgrade to 4.4 will disable the console. It can still be enabled for debug purposes.	Security
EURY-2697	NV Backup feature configurability enhancements	The following NV Backup feature configuration options have been added: AT+NVBU=3,0 – disable automatic recovery AT+NVBU=3,1 – enable automatic recovery AT+NVBU=4,1 – erase backup See AT Command Guide for more details.	NV Backup

ID	Title	Description	Impacted Domain
Standards and Carrier compliance			
EURY-2721	Update IMEI SV	Update IMEI SV to 09.	GCF/PTCRB
EURY-3201	Remove Band 14 support	Band 14 is reserved for FirstNet and not required for LPWA modules so support has been removed.	All carriers
EURY-3060 / EURY-3064 / EURY-3075 / EURY-3076	AT&T carrier compliance improvements	AT&T carrier compliance features have been added when AT+KCARRIERCFG=5 • LWM2M Connectivity Object added • LWM2M PSK persistence added • Max MTU size set to 1430 bytes • Blacklist reserved APNs from AT+CGDCONT	AT&T
EURY-3063	Verizon carrier compliance improvements	Verizon carrier compliance features have been added when AT+KCARRIERCFG=1 • Disable S1-U capability	Verizon
EURY-2305 / EURY-3156	Telstra carrier compliance improvements	Telstra carrier compliance features have been added when AT+KCARRIERCFG=13 • RRC Inactivity Timer value of 15 sec. • Connected Mode Mobility disabled in Cat-M1	Telstra
EURY-2800	PTCRB compliance improvements	For Subcarrier space of 3.75 kHz in Band 5 and Band 8, TX power was below 21 dBm	PTCRB
EURY-3046	GCF compliance improvements	SMS Class 0 is now always discarded after it is displayed.	GCF
EURY-1584 / EURY-2255 / EURY-2682 / EURY-2756 / EURY-2834	LGU+ compliance improvements	LGU+ carrier compliance improvements have been added when T+KCARRIERCFG=9 • LWM2M credential generation • Faster download speed on Huawei eNB • LWM2M defaults updated • Auto FOTA enabled • +CEER enabled • Fast registration mode enabled reliably	LGU+
Bugs Resolved			
EURY-2752 / EURY-3158	Some AT commands fail soon after warm boot	Readiness for AT commands after warm or cold boot is indicated by +KSUP:0 (if enabled) or CTS asserted. In previous firmware versions, one or both of these indications were arriving before the module had fully initialized to be ready for some AT commands. This has now been corrected so that CTS is asserted in unison with +KSUP:0 after initialization.	AT / CTS
EURY-1245 / EURY-2842	CTS line pulses when in AT+KSLEEP=1,0 sleep	With AT+KSLEEP=1,0 the CTS line is observed to toggle off and on rapidly whenever the module wakes for any reason, even if there is no serial activity. This has now been corrected to only assert CTS if serial activity is pending (e.g. URC to be generated).	CTS
EURY-2686 / EURY-2761	CMUX hibernate persistence	CMUX context was not persisted across hibernate so had to be re-established by the host on every wakeup. It is now persisted.	CMUX
EURY-2654 / EURY-2761	PDP context loss in PSM/Hibernate	In some scenarios, PDP context was lost in PSM/hibernate, so the module would re-attach to the network on every wakeup, incurring extra power consumption. This has been corrected.	Power save / PSM

ID	Title	Description	Impacted Domain
EURY-2495	PDP Context 3 is deleted after first +KUDPCLOSE	When PDP Context 3 is used (e.g. Verizon), closing a UDP connection on that context would delete it. It could then take up to 6 minutes to re-establish it, which can be very disruptive for applications. This would only occur on the first +KUDPCLOSE. It now is not deleted in any case.	Connectivity
EURY-2741	(HL7802) PDP call failed in GSM with PDP IP type IPv4v6	PDP call in GSM will fail when PDP profile IP type is set to IPv4v6 even though the IPv4 portion is serviceable. IPv4v6 profile now works for GSM.	GSM connectivity
EURY-2646	Abnormal wakeup during hibernate mode	If the module woke from eDRX hibernate while out of coverage, return to hibernate could be erratic (or not occur at all) for a few hours. The module now returns to hibernate.	Power save / eDRX
EURY-2795	No hibernate after return from OOS		
EURY-2486	KSUP: 2 (SIM not present) received after hibernation with ST Micro SIM	A ST Micro SIM in development was not being detected on coming out of hibernate. This has been fixed through a combination of changes to the SIM and HL78 firmware.	Power save
EURY-2846 / EURY-2997	Failed AT command response after exit from hibernate or reset/FOTA	In some cases, an AT command executed within 2 sec of +KSUP:0 indication would fail but would pass after a delay. This has been corrected so that CTS or +KSUP:0 are now reliable indication of AT readiness.	Power save
EURY-2259	After wakeup from hibernate on received data, +KCNX_IND: 1,1,0 sometimes comes with +KUDP_IND: 1,1, but not always	+KCNX_IND: 1,1,0 was sometimes seen coming out of hibernate. That was not correct. It is now only received when the connection is first established.	Power save / Internal IP
EURY-3056	IPv4 address on IPv4v6 APN not persisted across hibernate	If an IPv4 address was used for an internal TCP/UDP session on an IPv4v6 APN, it would revert to the IPv6 address after hibernate and stop working. It now will restore the correct address for the socket to maintain connectivity.	Power save / Internal IP
EURY-2441	KPATTERN not persistent across hibernate	The default KPATTERN "--EOF--PATTERN--" may be changed with AT+KPATTERN, but the non-default value was not persisted across eDRX or PSM hibernate. This has been fixed.	Power save / Internal IP
EURY-2530	+KFTPSND automatically inserts characters when sent bytes is less than <size> configured	When using +KFTPSND with <size> parameter set greater than bytes sent, extra characters were sent (e.g. start of EOF Pattern). This has been fixed.	Internal IP (FTP)
EURY-2675	Upgrade from 1.x firmware corrupts TCP timer	A local or FOTA upgrade from 1.x (e.g. 1.7.x) to 3.4.x+ corrupts some configurations set by AT+KTCPCFG. One such value is the timeout timer, where a value of 60 sec becomes 2 sec resulting in TCP connection failures in long delay scenarios such as poor coverage. The original configuration is now restored correctly on upgrade. Note that values set after upgrading are persisted correctly.	Internal IP
EURY-2827	HTTP POST/PUT/DELETE AT commands cannot receive the body response from httpbin.org test server	For servers that send HTTP response in two segments, first time the header and next time the body, the client does not display the response body. This is now handled.	HTTP

ID	Title	Description	Impacted Domain
EURY-2810	Too long Authorization (129 bytes) in +KHTTPHEADER? separated into 2 parts, +KHTTP_ERROR: 1,6 returned	HTTP header greater than 128 bytes was not supported. This limit has been increased to 256 bytes.	HTTP
EURY-1138	The 400 Bad Request error returned when performing a HTTP request with IPV6	For HTTP requests using IPv6, the URI was not formed correctly causing some servers to reject it. This has been fixed.	HTTP
EURY-2488	AT+CEMODE not persistent	AT+CEMODE can be changed at runtime, but would revert back to 2 on reset. It is now persistent across all reset types: warmboot, reset, and firmware update.	RF Network
EURY-2821	In 2G mode, for some cases user-initiated detach leads to partial detach.	If the user manually initiates detach on 2G via AT+COPS=2, the detach is only partially completed. Because of this, any future attach attempt may not be completely successful. This is now fixed.	CS/PS Detach
EURY-2818	AT+KCELL=0 always returns ERROR on Cat-M1	After the module attached to M1 network, AT+KCELL=0 command would always return +CME ERROR: 60. This has been fixed.	RF status
EURY-2625	+KCELL "comma" character is missing between LTE neighbor cells	The comma character was missing between the 13th and 14th parameters in the AT+KCELL=0 response (2nd and 3rd LTE neighbor cell). This is now fixed.	RF status
EURY-2705	+KCELL RSSI output in GSM presented in dBm	For GSM (+KSRAT=2) +KCELL report was being presented in dBm. This has been corrected to report a range from 0-63.	RF status
EURY-1524	AT port frozen after using GNSS with UE in USB mode	After getting a GNSS fix and executing AT+GNSSSTOP over USB, the AT command port would freeze, requiring a reset to recover. This has been fixed.	AT port stability / GNSS / USB
EURY-2584	Module crash after starting the GNSS session after exiting hibernate	With hibernate enabled with eDRX or PSM and exiting with wakeup pin, an attempt to start a GNSS session would crash the module. This has been fixed.	AT port stability / GNSS
EURY-1730	GNSS NMEA over USB doesn't output the GNSS sentences	If configured for NMEA over dedicated port, AT+GNSSNMEA=1, no NMEA sentences were output on USB and no fix was obtained, whereas this worked for UART. This is now fixed.	GNSS / USB
EURY-2820	AirVantage does not report last GNSS fix information if there is no active GNSS session	GNSS information was not sent to AirVantage server even when +GNSSLOC has the last GNSS fix available. The latest fix is now reported to AirVantage.	AirVantage / GNSS
EURY-2536	AirVantage does not report last RSSI resource value for GSM/NB1	While AirVantage reports the correct RSSI value (lwm2m.4.0.2) for Cat-M1, it does not for NBIoT or GSM. All RATs are now supported.	AirVantage / RF Status
EURY-2536	Object 10241 no values for the resources related to the selected SIM	Reading SIM status via AirVantage object 10241 would return ID, but not status information. All relevant information for this object is now provided.	AirVantage / SIM Status
EURY-2002	Object 10242 no values for the resources related to the signal quality	Reading SIM status via AirVantage object 10241 would not return accurate RSRQ value. The correct value is now reported.	AirVantage / signal quality

ID	Title	Description	Impacted Domain
EURY-2944	USB Bootloader port fails to enumerate	On some HL7802 modules, the USB bootloader port would fail to enumerate, preventing firmware download over USB. This was a configuration issue. USB bootloader is now enabled with AT+KUSBCOMP	SFT / USB
EURY-2857	AT port stuck after executing AT+CGCLASS="B"	In a scripted test, it was sometimes observed that the AT port would lock up after executing AT+CGCLASS="B" after a few minutes out of coverage with Sierra SIM.	AT port stability / Sierra SIM
EURY-2640	Module crashes when sending +KCARRIERCFG write command with invalid value	AT+KCARRIERCFG=-1 would crash the module, causing a reset. It now returns ERROR.	AT port stability / Sierra SIM
EURY-2809 / EURY-2823	With Sierra SIM, GSM attach takes longer than other carrier SIMs (around ~2-3 mins)	With Sierra SIM, GSM Attach/Re-attach would take around ~2-3 mins. It has now been reduced to ~1 min typically.	Sierra SIM
EURY-2852	2G Attach after SIM bootstrap	In rare occasions, the module would not attach after successful activation of the Sierra SIM on 2G. This has been fixed.	Sierra SIM
EURY-2913	+KSIMSEL command does not work without SIM when module is configured with SIERRA carrier	With +KCARRIERCFG=15 and no SIM present, AT+KSIMSEL would fail. This has been fixed.	Sierra carrier
EURY-2304	FOTA fails if power to secure module is interrupted during download	On modules with secure boot enabled, power disruption during ongoing FOTA would lead to FOTA failure and module booting into BOOTROM mode requiring a hard reset or power cycle to recover. This has been fixed for modules SKU'ed with 4.4 release. Modules already shipped with older firmware and secure boot enabled will continue to exhibit this problem as it is not correctable with an upgrade.	FOTA
EURY-2669 / EURY-2916	FOTA fails in poor coverage	If coverage is lost for more than 60 sec during a FOTA download, the FOTA operation will fail. Previously, this would mean that it must then restart the download from the beginning. It will now restart from the point coverage was lost. It is still necessary to reconnect to AirVantage after coverage is restored to resume the download	FOTA
EURY-2410	In weak signal, module reset after AT+WDSR=3	In rare cases, if coverage was lost after downloading a FOTA package, the module would crash with "Data bus error". This has been fixed.	FOTA
EURY-2652 / EURY-2917	UART1 temporarily reverts to default 115200 speed after differential firmware upgrade from 3.x to 4.x firmware	If the UART1 baud rate is not configured to 115200, the first differential upgrade (FOTA or AT+WDSD) will cause UART1 to revert to 115200 temporarily. This will result in any URCs soon after boot (e.g. +WDSI:16) being received at the wrong baud rate making them unintelligible. The previously configured baud rate is now set at the start of the boot sequence.	FOTA / UART1

ID	Title	Description	Impacted Domain
EURY-3089	On HL7800-M, module name extension "-M" is sometimes lost after FOTA upgrade / downgrade between v1.7.15.9 / v1.7.15.10 and v3.7.2.3	In some cases upgrading a HL7800-M from 1.7.x to 3.x would result in reverting the model name to HL7800. This occurs in all cases when downgrading from a unit SKU'ed with 3.x to 1.7.15.9. The upgrade issue has been fixed. There is no resolution for the downgrade issue. This downgrade should not be performed.	FOTA
EURY-1331	AT+WDSD taking long time to upgrade firmware	A 1.5 MB delta update would take ~11 min to load and install due to buffering in the flash file system. This has been reduced by ~half.	Local firmware update
EURY-2329 / EURY-2465	Delta upgrade with incorrect package bricks secure boot modules	On secure boot modules, if an attempt was made to perform a local delta upgrade (AT+WDSD) with an incompatible image (e.g. HL7800-M on HL7800 module), the module would get stuck in BOOTROM. This procedure is now rejected at the start.	Local firmware update
EURY-1581	Cold boot time > 7 sec	The original PTS timing for CTS asserted on cold boot was 7 sec. This was observed to be exceeded at times so the PTS was extended to 10 sec worst case. The biggest contributor to this time was a 5 sec fixed boot delay. After further investigation, it was found that just reducing that would reliably keep the boot time under 7 sec without impacting tools relying on the boot delay. The new default boot delay is 1 sec for UART and 3 sec for USB.	Boot time
Tools			
EURY-2765	SFT fails to download files on secure module over USB interface	On modules with secure boot enabled, SFT would fail to download firmware over the USB interface. This is now fixed.	SFT
EURY-2876 / EURY-2887	Support SFT with shorter boot delay	With the reduction in boot delay (EURY-1581), a change in SFT was required to handle this for firmware upgrade over CLI and USB.	SFT
EURY-2707	Unable to start SFT download over USB using Kermit option "-k"	Kermit support was not functional for firmware upgrade over USB. It is fixed.	SFT

12.2. HL78XX.4.3.9.0 Release Description

12.2.1. Release Identification

Table 14. Package Release Information

	Services (ATI, AT%VER)
FW Identification	HL7800.4.3.9.0 HL7800-M.4.3.9.0 HL7802.4.3.9.0
Components	Chipset baseline: RK0201021477 Legato RTOS: 18.09.3.ALT1250.rc3 2019/11/29 14:54:47 atSwi: 25.00 UBOOT: 01.03 Apps: RKAPP_02_01_02_00_69__020c71aff64756af95a5cf48eba6659dcae12247 MAC (HL7800, HL7800-M): ALT1250_02_01_02_00_68_FW MAC (HL7802): ALT1250_02_01_02_14_71_2G
Date of generation	2020/01/30 17:03:22
IMEI SV	08
TS 25 PLMN List	28 Oct. 2019
Supported HW	HL7800, HL7800-M, HL7802

12.2.2. Software Changes Description

This section describes all corrections or improvements integrated in this release since the previous major release BHL78XX.3.7.2.3.

ID	Title	Description	Impacted Domain
New Features & Improvements			
	Updated Altair Baseline in Firmware releases 4.x	Sierra Firmware 4.x is based on Altair RK2.1.2 release, providing incremental improvements in power consumption. (Sierra Firmware 3.x releases were based on Altair RK2.1.1 release.)	
EURY-1983, EURY-2526, EURY-1283	NB1 support enhancements	NB1 has numerous functional and stability improvements	LTE-NB1
	HL7802 support – adds 2G	Support for HL7802 is added, which includes 2G Radio Access Technology (RAT) support in addition to LTE-M1 and LTE-NB1. AT+KSRAT is used to select the desired RAT. A reboot is required to switch RAT.	RAT Support

ID	Title	Description	Impacted Domain
EURY-152	USB interface support	USB interface is now commercially supported. A new version of SFT (v2.1) is provided for firmware update over USB.	USB
	LGU+ LWM2M	Improvements are available to meet LGU+ requirements for LWM2M	Carrier certification
EURY-2352	Streamline output of ATI3. e.g. ATI3 HL7800.4.3.9.0	ATI3 output is now simplified, because the version number is sufficient to uniquely identify the firmware. Note – The first portion of the version is still specific to the module variant: HL7800, HL7800-M, HL7802 etc.	ATI
Bugs Resolved			
EURY-2147	CFUN=0 is not retained after waking from LITE HIBERNATE mode	If AT+CFUN=0 is used to enter minimum functionality, going into/out of lite hibernate (AT+KSLEEP=x,1) would restore it to +CFUN=1. This was a regression in 3.4.4.3 that has been fixed.	RF
EURY-1893	DNS timers too short for NB1	DNS timeout is increased from 2 sec to 12 sec per DNS (up to 2 total), to better handle the increased latency in marginal M1 coverage and in NB1 in general.	Network
EURY-2230	LGU+ PDP context 2 missing	The second APN is now set properly when the module is configured for LGU+.	Carrier certification
EURY-1349	FTP/PPP low UL/DL speed on Ericsson eNB	Throughput performance is significantly improved when operating on Ericsson network infrastructure.	Carrier certification
EURY-2149, EURY-2417	AT+WDSD Xmodem firmware upgrade intermittently fails (15% fail rate)	AT Command URCs are now suppressed during Xmodem firmware upgrade to ensure successful file transfer.	FW update
EURY-2416 / EURY-2443 / EURY-2454	Extended loss of RF connectivity during data transfer	Occasional/rare data stalls are now avoided by automatically recovering RRC idle/connected state mismatches between the module and network.	RF
EURY-871	SIM detection slow / fail	AT+KSIMDET can now reliably detect SIM insertion or removal in seconds	SIM
EURY-2014	SIM query returns not detected soon after wake from eDRX hibernate	When querying for SIM presence too soon after asserting WAKEUP pin to wake from eDRX hibernate, it was falsely reporting not present, based on SIM activation (but not yet activated) instead of SIM presence.	SIM

ID	Title	Description	Impacted Domain
EURY-2391	GPIO2 voltage spikes exiting eDRX hibernate	Without external pulldown on GPIO2, brief voltage spikes were observed when exiting hibernate mode, potentially causing false indication. A parameter has been added to +KRIC to enable an internal pulldown. E.g. at+kric=128,0,1,2,1 The pulldown remains disabled by default.	IO
EURY-2525	Continuous "+KUDPCFG" may lock up modem	If successive calls are made to AT+KUDPCFG without waiting for OK, the AT interface may lock up. This has been corrected.	Internal IP
EURY-1514	For TCP/UDP, "OK" is not displayed after sending EOF pattern	After +KTCPSND or +KUDPSND data followed by EOF pattern, the AT port did not return to command mode automatically. +++ was also required. This is now corrected.	Internal IP
EURY-2059	HTTPS GET fails with long URL	HTTPS GET was failing if the URL was longer than 65 characters. The limit has been increased to 127 characters.	HTTPS client
Multiple	Internal FTP reliability	Although AT+KFTP internal FTP service was introduced in HL78XX.3.4, there were several reliability issues with it, including data integrity and lockup issues. These have been largely addressed. Remaining issues are described in "Known Issues" section.	FTP client
EURY-1469	NVBU backup fails after multiple executions	After creating an NVBU backup with AT+NVBU=0 approximately 90 times, the backup fails and module is unstable due to a memory leak. This issue is now corrected.	NVBU
EURY-2275	Read backup log response is missing "Backup restore success."	When performing read backup log (AT+NVBU=2,0), the response was missing "**Backup restore success**". This issue is now corrected (the response will appear).	NVBU
EURY-2426	NVBU - empty files are not automatically restored	If calibration or static data files were empty, they were not being restored. This has been corrected.	NVBU
EURY-2449 / EURY-2587	Assert on SMS activity	An intermittent MAC assert was observed in some cases when receiving SMS or reading SMS from storage. This has been corrected.	SMS
EURY-1833	Verizon mobility issues	Improved reliability of MT SMS during mobility scenarios.	SMS

ID	Title	Description	Impacted Domain
EURY-2238	GPS Timestamp is mismatched between module and AirVantage server	After doing a retrieve data job with Object 6: Location on AirVantage server, resource Timestamp value is mismatched between AirVantage server and module.	AirVantage

12.3. BHL78XX3.7.2.3

12.3.1. Release Identification

Table 15.   **Package Release Information**

	Services (ATI, AT%VER)
FW Identification	BHL78XX.3.7.2.3-RK0201011185
HL7800 Identification (SierraSigned)	ati HL7800 OK ati3 BHL7800.3.7.2.3.20191030 OK ati9 HL7800.3.7.2 BHL78xx.3.7.2.3.RK_02_01_01_11_85.20191030 2019/10/30 00:57:12 IMEI-SV: 3594160900008907 Legato RTOS: 18.09.2.ALT1250.rc22 2019/07/29 13:51:59 atSwi: 22.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_11_77__2e6d86c7c5a36543444aef3b128582b44fe6b0f2 MAC: ALT1250_02_01_01_00_73_FW PHY: 12.50.217886 PMP: 218317 SBUB: 1 SBFW: 1 RPuK: 53F7A48A FPuK: 139A8E70 RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_11_85 Apps: RKAPP_02_01_01_11_77__2e6d86c7c5a36543444aef3b128582b44fe6b0f2 Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_218317

	Services (ATI, AT%VER)
	MAC Package Version: ALT1250_02_01_01_00_73_FW MAC Build Time: Oct_18_2019_22_06_26 PHY Revision: 12.50.217886 PHY Build Time: Oct_03_2019_14_41_57 PHY Build Info: releas_0 PMP Revision: 218317 PMP Version: 73_FW PMP build time: Oct_18_2019_22_06_26 DSP Revision: 51142 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Oct 30 2019 00:56:06 OK
HL7800-M Identification (SierraSigned	ati HL7800 OK ati3 BHL7800-M.3.7.2.3.20191030 OK ati9 HL7800-M.3.7.2 BHL78xx.3.7.2.3.RK_02_01_01_11_85.20191030 2019/10/30 00:57:12 IMEI-SV: 3594160900008907 Legato RTOS: 18.09.2.ALT1250.rc22 2019/07/29 13:51:59 atSwi: 22.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_11_77__2e6d86c7c5a36543444aef3b128582b44fe6b0f2 MAC: ALT1250_02_01_01_00_73_FW PHY: 12.50.217886 PMP: 218317 SBUB: 1 SBFW: 1 RPuK: 53F7A48A FPuK: 139A8E70 RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_11_85 Apps: RKAPP_02_01_01_11_77__2e6d86c7c5a36543444aef3b128582b44fe6b0f2 Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_218317 MAC Package Version: ALT1250_02_01_01_00_73_FW MAC Build Time: Oct_18_2019_22_06_26 PHY Revision: 12.50.217886 PHY Build Time: Oct_03_2019_14_41_57 PHY Build Info: releas_0

	Services (ATI, AT%VER)
	PMP Revision: 218317 PMP Version: 73_FW PMP build time: Oct_18_2019_22_06_26 DSP Revision: 51142 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Oct 30 2019 00:56:06 OK
Date of generation	2019/10/30 00:57:12
Binary Size HL7800-M/HL7800	4546560 AppFW_flash.bin 1040　sysHeader_backup.bin.alt1250 3492　sysHeader.bin.alt1250 700　sysHeader_modem.bin.alt1250 520076　u-boot.bin 3716408 ue_lte.fw 4096　partmap.bin 2750792 ue_lte.fw2(HL7800 package) 16384　ue_lte.fw2(HL7800-M package)
MD5	7b981c2ebaed8f6ee3a82747267b95b5810cf668 *AppFW_flash.bin c000c51052dc7cfc1896113b1f0e1cde8658c8b2 *sysHeader_backup.bin.alt1250 (HL7800) fc5a5fda787147c86929f87e2a13d2b71eb30694 *sysHeader_backup.bin.alt1250 (HL7800-M) d88e7677fe18d1ad70080a8ed19dec1621ce9eb7 *sysHeader.bin.alt1250 (HL7800) 47e61bf73a663056562bfe043427aad1b72ee01b *sysHeader.bin.alt1250 (HL7800-M) 983a6e51e36d14d700766daf4a6e2e854ae4a3a0 *sysHeader_modem.bin.alt1250 (HL7800) ec6cb7090c79856a236382b777893553dbba6b3b*sysHeader_modem.bin.alt1250 (HL7800-M) df6b5a3fc72a17f61d97643aa947c6d68a94387d *u-boot.bin 73711ef6d69b291f142a6316661c529a02d919e7 *ue_lte.fw 2768717479133d333d2be2283c451fc513319220 *partmap.bin (HL7800) 51c9f56f1bc5fa9cdc71998be56001662439f9e2 *partmap.bin (HL7800-M) a3df2d8d6a6741796247a2bbc6f33c642663b214 ue_lte.fw2 (HL7800) 547372f1044a3442aa52fcd2b3546540aba59344 ue_lte.fw2 (HL7800-M)
IMEI SV	07
TS 25 PLMN List	**24 June 2019**

12.3.2. Software Changes Description

12.3.2.1. Validated Corrections/Improvements

ID	Issue Resolved
EURY-2325	With one of the fixes under BHL78XX.3.7, KMON=1 behavior was corrected to ensure module resets after unexpected crash. This leads to problem for units with KMON=1 and upgraded to BHL78XX.3.7. Problem has been solved by changing Firmware default value to KMON=2 and not persisting KMON=1 after cold boot.
EURY-2016	Setting Band Configuration with KBNDCFG after cold boot returns error
EURY-1927	TAU is not attempted after TAU reject with EMM-Cause #15 ((No suitable cells in tracking area) is received
EURY-1896	In some rare cases of attach/detach, UE fails to perform Attach to the network
EURY-1895	During bootup when DNS resolution takes long time, AT commands become slow in their response time
EURY-1726	PPP connection fails with error 628 on windows with 921600 baudrate
EURY-1660	AT+KCELL doesn't return Intra Frequency neighbor cell information
EURY-1556	Cannot activate PDP context 2 and module responds command too long (> 60s)
EURY-2241, EURY-2204	Some cases where AT+KCARRIERCFG change followed by RESET leads to NV Back up recovery fail and unit becomes unresponsive
EURY-2173	Initial boot baud rate is not persisted over FOTA or Local upgrade
EURY-2134	File corruption leads to module failing to connect or being unresponsive
EURY-2004	In some cases KSLEEP delay timer doesn't keep module awake for configured time
EURY-2089	Closing CMUX while PPP is active leads to CMUX not working properly in the next run
EURY-2088	Memory leak during closing CMUX leads to module sending out garbage characters in response to AT commands
EURY-2087	APNs have been reset to default even with KCARRIERCFG=1
EURY-2024	Module freeze after loop testing with eDRX hibernate and IP-PUSH due to race condition
EURY-1687	Long run eDRX test with IP-Push sometimes leads to crash resulting in module unresponsive
EURY-1250	PPP fails during LCP negotiation due to hard coded baud rate used
EURY-1994	UE ignores EF_FPLMN list after network detach
EURY-1989	DUT didn't reattach correctly after unexpected network loss or uncatched economic optimization
EURY-1902	No attach request after eco-opti following network detach
EURY-2129	Location Status Normal -> No Service after eco-opti REFRESH response

ID	Issue Resolved
EURY-2105	Module is unable to perform NV backup due to NV partition not having enough free space
EURY-2030	FOTA job sometimes failed when power off/on module during package download
EURY-1982	FOTA job failed after network was lost and recovered subsequently
EURY-1770	AT port not responsive after a few minutes idle with UART0 set to LOG
EURY-1623	FOTA Download from Motive Server Fails to Update FW
EURY-1521	The module configured in NB1 auto reboots after Lite Hibernate or Hibernate is configured
EURY-1170	In NB1 mode without eDRX and PSM, with DH2 sleep mode modules wakes up every 6secs
EURY-159	Temperature Warning feature allowing application to react before auto-switch off
EURY-1764	Race condition may override hibernate state set by +KSLEEP
EURY-1626	AT+KCELL=0 returns CME Error 60 when network is EPS_ONLY attach.
EURY-1455	Internal IP stack data integrity issue (Escape sequence (+++) parsing of serial data fails in some cases)
EURY-1932	Incoming UDP/TCP data is limited to 512 bytes
EURY-1892	FW download cannot be done with AT+WDSD or FOTA with logs stored in tempfs
EURY-1845	Module cannot hibernate after TAU with RTS de-asserted
EURY-1822	Attach process stopped after receiving TAU reject
EURY-1782	HL7800 need to ensure AT+KHWIOCFG is saved by NV backup
EURY-1778	HL7800 Smartsim Initialization (modem reset)
EURY-1760	KUDPSND data lost @9600 bps when fails to parse +++
EURY-1749	SMS Term Ref vs DUT has 3 failures -1.0 % delta compared with 2 failures on Ref
EURY-1745	When module received IP-PUSH, sometimes UE couldn't send Service request(RACH Fail)
EURY-1731	Connecting over PPP for ~15 seconds will cause AT+WPPP commands to stop responding.
EURY-1648	Can't use USB port because of incorrect serial port mapping
EURY-1564	AT+KTCP and AT+KUDP commands sometimes fail to send data to server when data contains one or more '+' characters
EURY-1560	Internal IP stack UDP data msg is not sent after CONNECT
EURY-1438	Garbled characters output after wakeup from hibernate mode at 9600 baud
EURY-871	AT+KSIMDET takes upto 112sec to detects SIM removal and upto 4mins to detect SIM insertion
EURY-852	KCARRIERCFG, KBNDCFG, WPP credentials are included in NV Backup
EURY-1978	+gnssloc result is 45km away
EURY-1696	Module is frozen after sending some invalid commands.
EURY-1689	Module cannot receive data after sending data to FTP server successfully for the first time.
EURY-1645	UE fails to report an accurate position fix with AT+GNSSLOC

ID	Issue Resolved
EURY-1615	Module output +WDSI: 5(Authentication ended with failure) after +WDSI: 10(Download OK).
EURY-1584	LGU+ LWM2M requirements
EURY-1417	Internal TCP and UDP uplink in NB-IoT mode is causing corrupt and false data
EURY-1122	AT+KFTPSND with large files trigger error and file is displayed in hyperterminal
EURY-939	"+SIM: 1" URC is not returned after reboot module
EURY-864	[AV] Add Synchronize action in application model for AV packages
EURY-1749	Modem crash observed while handling MT-SMS which is fixed with a modem firmware patch

12.4. BHL78XX3.5.0

12.4.1. Release Identification

Table 16. Package Release Information

	Services (ATI, AT%VER)
FW Identification	BHL78XX.3.5.1 (RK0201010060)
Identification	ati HL7800 OK ati3 BHL7800:E0.3.5.1.0.20190719 OK ati9 HL7800:E0.3.5.1 BHL78xx.3.5.1.0.RK_02_01_01_00_60.20190719 2019/07/19 01:22:30 IMEI-SV: 3594160915351706 Legato RTOS: 18.09.2.ALT1250.rc16 2019/06/27 07:55:19 atSwi: 18.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_53__75bc4403e8c402686d52674ceabcdb24b36c4c65 MAC: ALT1250_02_01_01_00_54_FW PHY: 12.50.214034 PMP: 214037 SBUB: 1 SBFW: 1 RPuK: 42BA7F7D FPuK: 4A14BD70 RBUB: 0 RBFW: 0 OK at%ver

	Services (ATI, AT%VER)
	NP Package: RK_02_01_01_00_60 Apps: RKAPP_02_01_01_00_53__75bc4403e8c402686d52674ceabcdb24b36c4c65 Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_214037 MAC Package Version: ALT1250_02_01_01_00_54_FW MAC Build Time: Jun_16_2019_15_26_36 PHY Revision: 12.50.214034 PHY Build Time: Jun_16_2019_15_00_25 PHY Build Info: releas_0 PMP Revision: 214037 PMP Version: 54_FW BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Jun 17 2019 17:56:03 OK
Date of generation	2019/06/14 21:13:13
Binary Size	5402624 AppFW_flash.bin 1040 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 700 sysHeader_modem.bin.alt1250 519932 u-boot.bin 3703092 ue_lte.fw 4096 partmap.bin 2734888 ue_lte.fw2(HL7800 package) 16384 ue_lte.fw2(HL7800-M package)
MD5	12971a5ac479b359612665bf5553d00679e9cef0 AppFW_flash.bin 3ddf3512ac6ce33554b6a0ec3a65785833907187 sysHeader_backup.bin.alt1250 (HL7800-M) 99304e15e717f19b067ba74602640b448b553529 sysHeader.bin.alt1250 (HL7800-M) 809ae301ee95e2fc36aed1edee063a8bd127ffd0 u-boot.bin 45ecfbd0908137ad235cf1b2bd61391a0d8d6500 ue_lte.fw 54fce5fa38a5933f7a2be7d387940dff716ed59b partmap.bin (HL7800-M) 547372f1044a3442aa52fcd2b3546540aba59344 ue_lte.fw2 (HL7800-M)
IMEI SV	05
TS 25 PLMN List	29th April 2019

12.4.2. Software Changes Description

12.4.2.1. Validated Corrections/Improvements

ID	Description
EURY-1699	[VZW][LWM2M][Diagnostics] Notify messages are not reporting periodically
EURY-1693	NV Backup (if it is in automatic mode) is restored at each init after upgrade to FW3.4.5.0 due to ImeiSV change (bsp/prop)
EURY-1675	Verizon cert configuration enhancements in AT+KCARRIERCFG
EURY-1662	If NV data file corrupted, backup is not restored and the module crashes.
EURY-1655	FOTA completion notification fails in some cases

ID	Description
EURY-1646	AT port stops working after downgrade from FW 3.4.5.0.
EURY-1609	[VZW][LWM2M] File version number in LWM2M resource 3/0/3 is missing 4th digit
EURY-1482	HL7800 NV Backup file not automatically generated
EURY-1475	AirVantage (DNS) failure on Vodafone NB1 due to lack of ePCO support in network. To workaround this network issue execute: `at%setacfg=modem_apps.NBIoT.ePCOCap,false` A more formal solution is planned for a future release.
EURY-1470	Module fails to restore NV data by NVBU command
EURY-1466	AT+KHTTPCFG fails in IPv6 mode
EURY-1409	FTP server time out occurred while uploading file to FTP on Ericsson eNB
EURY-1402	HL7800 crash and reboots when trying to open DLCs other than 1 - 4
EURY-1366	GNSS LNA Support added AT+CNSSCONF=1,<0= LNA disable, 1=LNA auto enable>
EURY-1357	Successive TX attempts with AT%TSTRF use maximum output power instead of configured value
EURY-1332	When Power On feature is enabled and power button is in the Off position ,module still boots successfully after hard reset.
EURY-1309	Latitude , Longitude and Altitude are mismatched between module and AIRVANTAGE server
EURY-1261	Periodic resets seen in NB1 light hibernate
EURY-1208	+KTCP_DATA displays the incorrect send data value compare to the configured <send_size>
EURY-1199	The result of AT+CESQ may not change on NB1
EURY-1114	Module crashed when connecting to AIRVANTAGE server by AT+WDSS=1,1 in stress test
EURY-998	+KUDP_DATA is not displayed when send and receive UDP data many times.
EURY-882	Test of "Mobile terminated message Class 0 and 2" Failed
EURY-646	Update CLAC with new AT commands
EURY-1716	Exclude TS25 files from NVBackup as they might be changed in the field
EURY-1601	Module auto attach after +CGATT=0

12.5. BHL78XX3.4.5.x

12.5.1. Release Identification

Table 17. **Package Release Information**

	Services (ATI, AT%VER)
FW Identification	BHL78XX.3.4.5.1-RK0201010057
Identification	ati HL7800-M OK ati3 BHL7800-M.3.4.5.1.20190617 OK ati9 HL7800-M.3.4.5 BHL78xx.3.4.5.1.RK_02_01_01_00_57.20190617 2019/06/17 17:57:04 IMEI-SV: 3594160915360706 Legato RTOS: 18.09.2.ALT1250.rc15 2019/06/07 12:03:18 atSwi: 17.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_50__9b22bd4a0ca5cb1abde3f3dc385fd2c17807c84e MAC: ALT1250_02_01_01_00_51_FW PHY: 12.50.212808 PMP: 213109 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_00_57 Apps: RKAPP_02_01_01_00_50__9b22bd4a0ca5cb1abde3f3dc385fd2c17807c84e Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_213109 MAC Package Version: ALT1250_02_01_01_00_51_FW MAC Build Time: Jun_02_2019_20_40_49 PHY Revision: 12.50.212808 PHY Build Time: May_28_2019_11_32_43 PHY Build Info: releas_0 PMP Revision: 213109 PMP Version: 51_FW PMP build time: Jun_02_2019_20_40_49 DSP Revision: 51142 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Jun 17 2019 17:56:03 OK
Date of generation	2019/06/17 17:57:04

	Services (ATI, AT%VER)
Binary Size	5349376 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 700 sysHeader_modem.bin.alt1250 519932 u-boot.bin 3702316 ue_lte.fw 4096 partmap.bin 16384 ue_lte.fw2(HL7800-M package)
MD5	12971a5ac479b359612665bf5553d00679e9cef0 AppFW_flash.bin 3ddf3512ac6ce33554b6a0ec3a65785833907187 sysHeader_backup.bin.alt1250 (HL7800-M) 99304e15e717f19b067ba74602640b448b553529 sysHeader.bin.alt1250 (HL7800-M) 809ae301ee95e2fc36aed1edee063a8bd127ffd0 u-boot.bin 45ecfbd0908137ad235cf1b2bd61391a0d8d6500 ue_lte.fw 54fce5fa38a5933f7a2be7d387940dff716ed59b partmap.bin (HL7800-M) 547372f1044a3442aa52fcd2b3546540aba59344 ue_lte.fw2 (HL7800-M)
IMEI SV	05
TS 25 PLMN List	29th April 2019

12.5.2. Software Changes Description

12.5.2.1. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
EURY-449	Fixed issue which prevent AT+COPS=2 from detaching from the network
EURY-812	Add support for two simultaneous HTTP sessions
EURY-858	Fixed GPIO6 LPM behavior
EURY-874	CRLF is now sent after username, password. This allows connection to Microsoft FTP servers.
EURY-896	Improved detection of multi-IMSI SIMs
EURY-907	AT+KCELL will now show timing advanced parameter of serving cell
EURY-924	Module can now receive SMS after wake up from Hibernate mode with SM preferred message storage
EURY-949	Fixed issue where AT+COPS=? sometimes return a blank list
EURY-950	Fixed issue which prevented UE from initiating a network search after receiving "service not allowed" network detach response
EURY-962	Fixed issue where Location Status – Normal Service envelope was not sent to USIM after network attach
EURY-1078	Fixed rare issue where device fails to get a GNSS position fix under stress test conditions
EURY-1098	Add support for up to 6 simultaneous FTP sessions

ID	Description
EURY-1112	"NO CARRIER" is now returned when reading an unavailable file from FTP server
EURY-1117	If requested via +KSSLCRYPTO, TLS 1.2 is used instead of TLS 1.0
EURY-1118	Duplicate KFTP_ERROR URC no longer returned when sending +KFTPLS to get file size of a non-existing file
EURY-1132	PDP connection is now closed automatically after all FTP sessions are closed
EURY-1133	If 2 FTP sessions are active, +KFTPRCV no longer receives duplicate data in received file
EURY-1141	Improved NV Backup functionality
EURY-1186	Band, operator selection, baud rate, echo mode, PDP context, sleep mode, PSM, eDRX configurations are now persistent across FOTA
EURY-1210	Fixed occasional issue where +KTCP_SRVREQ URC missing some characters after the module resumes from sleep
EURY-1212	Fixed issue where +KTCP_DATA is displays incorrect received data value compare to configured TCP IPv6 <send_size> value
EURY-1240	AT port no longer freeze when module attempts to send UDP data with character "-" at the end
EURY-1248	Fixed rare issue where module was unable to attach after recovered from out of service
EURY-1253	Fixed rare issue where FOTA from 1.x to 3.x FW reported error even when it succeeded
EURY-1265	+KUDP commands no longer receive UDP data from AirVantage during FOTA
EURY-1287	+KSRAT is now persistent after upgrade from 1.7 FW
EURY-1328	"KTCP_NOTIF: 1,0" is now displayed after entering flight mode
EURY-1378	Enable pin for external DCDC
EURY-1385	Improved +KTCP_NOTIF behavior
EURY-1398	Closing TCP socket using +KTCPSTART no longer freezes module
EURY-1425	Improved embedded SIM detection using +KSIMSEL
EURY-1443	Fixed rare issue which prevented module from entering hibernate mode after FOTA
EURY-1444	Improved FOTA resume functionality
EURY-1445	Fixed rare issue where AirVantage server did not receive FOTA completion notification
EURY-1448	Loosened +AVDATASEND float and integer restrictions
EURY-1451	Improved eDRX stability under stress conditions
EURY-1471	Improved power consumption during LPM
EURY-1487	Fixed issue where the module fails to attach after an extended loss of coverage

ID	Description
EURY-1510	Fixed issue where module remains out of service when switching from invalid to valid CAT-M1 eNB
EURY-1518	AT+COPS=? no longer causes endless reboots when in NBIOT mode
EURY-1546	Fixed crash when changing NB1 band
EURY-1559	Fixed an issue causing the GPIO2 RI pulse to last longer than the configured duration
EURY-960	R2C: SIM is not read consistently

12.6. BHL78XX.3.4.1.0

12.6.1. Release Identification

Table 18. **Package Release Information**

	Services (ATI, AT%VER)
FW Identification	BHL78XX.3.4.1.0-RK0201010046
Identification	ati HL7800 OK ati3 BHL7800.3.4.1.0.20190425 OK ati9 HL7800.3.4.1 BHL78xx.3.4.1.0.RK_02_01_01_00_46.20190425 2019/04/25 16:01:01 IMEI-SV: 3546160900092205 Legato RTOS: 18.09.2.ALT1250.rc8 2019/04/25 07:32:10 atSwi: 14.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_42__4c94d7fcd51692e5e4264345040d4092d8fcc024 MAC: ALT1250_02_01_01_00_42_FW PHY: 12.50.210494 PMP: 210539 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_00_46 Apps: RKAPP_02_01_01_00_42__4c94d7fcd51692e5e4264345040d4092d8fc

	Services (ATI, AT%VER)
	c024 Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_210539 MAC Package Version: ALT1250_02_01_01_00_42_FW MAC Build Time: Apr_17_2019_12_26_21 PHY Revision: 12.50.210494 PHY Build Time: Apr_16_2019_14_37_27 PHY Build Info: releas_0 PMP Revision: 210539 PMP Version: 42_FW PMP build time: Apr_17_2019_12_26_21 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Apr 25 2019 15:59:47 OK
Date of generation	2019/04/12 16:06:49
Binary Size	5226496 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519848 u-boot.bin 3769672 ue_lte.fw 4096 partmap.bin 2728724 ue_lte.fw2
MD5	d944db2f7f3c6b263cb387b1354f5639be51dbf8 AppFW_flash.bin 4bc8a110cfc39469a4fc05ece45b48c3382e46d4 sysHeader_backup.bin.alt1250 c7a95d1005dc80344f8b007791bd596c84fff2a8 sysHeader.bin.alt1250 a7213b890a65d7f89215d0dbc88d27d5848dd4d0 u-boot.bin fc975da586f86143ac0364d1d1a0ea0d2b5533f1 ue_lte.fw 7615da15f55f81205ea35b8b705f9b4ed556704f partmap.bin 463a7db878e1071d01a10d2c4db4463ee14dec90 ue_lte.fw2
IMEI SV	05
TS 25 PLMN List	1st April 2019

12.6.2. Software Changes Description

12.6.2.1. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
EURY-1322	Device connects to AIRVANTAGE server TWICE at the same times after setting polling mode timer.
EURY-1291	[LGU+][4.2] Cell search does not work according network searching cycle specified by LG U+ when moving from no service area to service area.
EURY-1290	[AIRVANTAGE] module doesn't reconnect to server after +WDSI:16
EURY-1289	[LGU+][4.1] cell search does not work according to network searching cycle specified by LG U+ in no service area

ID	Description
EURY-1266	MCU cannot receive AT command from module
EURY-1257	HL7800 crash seen during PPP call
EURY-1254	APN re-write by module itself
EURY-1229	[NS][EDRX] CST is not LOW again after module is woken up by SMS
EURY-1225	[NS][CEMODE] AT port is frozen after setting AT+CEMODE=3
EURY-1223	[CMUX] HL7800 PPP Failed FW 2.5.6.1
EURY-1180	[GPRS][+CGTFT] Missing 1 space in response when sending command AT+CGTFT?
EURY-1152	[VZW][AIRVANTAGE][FOTA] Couldn't upgrade FW from N-1 to N by FOTA
EURY-1070	[GPRS][CGDCONT] +CGDCONT configuration isn't persistent after reboot
EURY-1045	[GPRS][CGDCONT][KTCPSND][KUDPSND] Module doesn't send data while there is an data call establish.
EURY-1044	[GPRS][CGDCONT][AIRVANTAGE][WDSS] Can not start TCP/UDP connection with PDP context 1 if PDP 2 is configured for AIRVANTAGE connection
EURY-1038	[PROTOCOM][KTCPCNX] Response time for AT+KTCPCNX is too long when starting TCP Connection with invalid IP address or invalid port
EURY-691	[MECS][KCELL] Module returns +CME ERROR: 60 when sending command AT+KCELL=0
EURY-687	[LegatoRTOS] Firmware information is not displayed rightly
EURY-668	[AIRVANTAGE][FOTA] After network lost during FOTA session, module can't re-connect and continue FOTA upgrade, +WDSI: 11,2 is received.
EURY-623	FROMDIZZY1 - CLONE - [IPV6][KCNXUP][REG] Module can't bring up GPRS session with IPV4V6.
EURY-621	FROMDIZZY1 - CLONE - [ATandD]DCD is not active when module in data mode (KTCPSND/KUDPSND)
EURY-616	[KSLEEP][CPSMS] Modem does not go back to HIBERNATE mode when waking up in the middle of a PSM cycle
EURY-615	[WDSD] +WDSI 3 does not appear after AT+WDSD local download and therefore patch can't be installed
EURY-607	FROMDIZZ1_CLONE- [AIRVANTAGE][KDDI][FOTA] Sometimes double +WDSI: 4 returned when connecting to server to trigger FOTA job
EURY-606	[KSLEEP] Modem state is not retained after waking up from LITE HIBERNATE mode
EURY-593	[PROTOCOL][TLS1.2][KTCPCNX] Module crashes when bring up TCP connection as secure client.
EURY-580	[WDSD] +WDSI 3 does not appear after AT+WDSD local download and therefore patch can't be installed
EURY-565	[SMS][CMGW][CMGS] Missing \r\n when entering the multiple line message

ID	Description
EURY-563	[SMS][CPMS] Module returns +CMS ERROR: 321 when selecting storage for <mem2>,<mem3>
EURY-550	[GPRS][CGEREP][CGEV] The URC +CGEV is not displayed when GPRS event happens.
EURY-545	[MECS][+CCHO] Wrong response when sending AT+CCHO command.
EURY-539	[NS][+COPS] Wrong responses when testing AT+COPS=? command
EURY-537	[TEST][WMRXPOWER] Module restart during testing WMRXPOWER
EURY-536	[SMS][CMGS] wrong responses for AT+CMGS=?
EURY-535	[VER25TER][3plus] After executing "+++" to switch from Data Mode to Command Mode, double "OK" is returned in the response.
EURY-533	[GEN][ATZ] Wrong response and delay in response when testing ATZ command.
EURY-525	[GPRS][CGCONTRDP] CGCONTRDP returns wrong response when network is detached
EURY-519	[V25TER][AT&D] Can't switch to command mode after DTR drops from active to inactive with AT&D1 command
EURY-518	[AIRVANTAGE][FOTA] Can not trigger "upgrade job" on AIRVANTAGE server from module with KDDI network
EURY-516	[MECS][+CMEE] Command AT+CMEE=2 should not be supported and should not be in list of supported values (AT+CMEE=?)
EURY-515	[GPRS][+CGEREP] CGEREP value is not saved after at+cfun=1,1
EURY-512	[PROTOCOM][KCNXDOWN] Can not bring down GPRS connection after TCP connection had been disconnected
EURY-511	[WMRXPOWER] ERROR returns for AT+WMRXPOWER=<ENABLE> and wrong response for read command
EURY-510	[V25TER][AT&D] Can't switch to command mode after DTR drops from active to inactive with AT&D2 command
EURY-507	[PROTOCOL][KTCPCNX] After start 6 TCP sessions, 7th sessions still connected.
EURY-506	[GEN][CMGS] "+CMTI" URC appears before "+CMGS" URC after sending successfully SMS
EURY-504	[GPRS][KCNXDOWN] Wrong KCNX_IND when bringing PDP connection down with AT+KCNXDOWN=1,1
EURY-499	[GPRS][+CPLS] Wrong responses when testing +CPLS command
EURY-497	[MECS][KSRAT] Extra /r/n in the response of +KSRAT
EURY-496	[CC][ATH] NO CARRIER is not returned after disconnect the data call by ATH
EURY-495	[NS][CPSMS] The responses of AT+CPSMS have incorrect format and value
EURY-493	[PROTOCOL][+KCNX_IND] The +KCNX_IND: 1,0,0 URC is not displayed when there is TCP connection error

ID	Description
EURY-491	[PROTOCOM][KTCPRCV] KTCPRCV cannot receive data available in buffer
EURY-488	[GPRS][+CGACT] Extra \r\n when sending CGACT command
EURY-486	[PROTOCOL][KUDPCFG][KUDPCLOSE]The 7th,8th,9th session can be started, and AT port is frozen after closing 7th UDP sessions
EURY-483	[HL78 Legato]: Received not enough data when read with command AT+KCERTSTORE?
EURY-481	[PROTOCOM][KURCCFG] URC "+KTCP_NOTIF: 1,4" is not returned after timeout
EURY-480	[VZW][V25TER][+CGCMOD] ERROR code is returned when modifying PDP context by +CGCMOD command
EURY-477	[PROTOCOM][KTCP_DATA] "+KTCP_DATA" is not displayed when send and receive TCP data in many times
EURY-473	[PROTOCOL][KTCPCFG]TCP sessions are displayed incorrectly
EURY-472	[SMS][+CMGS] First parameter of +CMT should be string type.
EURY-469	[NS][+COPS] Wrong responses when testing +COPS command
EURY-467	[MECS][KGPIO][KGPIOCFG] KGPIO configuration is not saved after rebooting
EURY-465	[PROTOCOM][KURCCFG] Client module does not send successfully with a lot of bytes to TCP server module

12.7. BHL78XX.2.5.8.0

12.7.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.8.0-RK0201010044
Identification	ati HL7800 OK ati3 BHL7800.2.5.8.0.20190419 OK ati9 HL7800.2.5.8 BHL78xx.2.5.8.0.RK_02_01_01_00_44.20190419 2019/04/19 10:55:57 IMEI-SV: 3546160900011404 Legato RTOS: 18.09.2.ALT1250.rc6 2019/04/15 07:49:52 atSwi: 13.01 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_40__91d60b93360df8db6aea51c4b159a1e87833e1c6 MAC: ALT1250_02_01_01_00_41_FW

	Services (ATI, AT%VER)
	PHY: 12.50.210190 PMP: 210290 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_00_44 Apps: RKAPP_02_01_01_00_40__91d60b93360df8db6aea51c4b159a1e87833e1c6 Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_210290 MAC Package Version: ALT1250_02_01_01_00_41_FW MAC Build Time: Apr_11_2019_18_34_08 PHY Revision: 12.50.210190 PHY Build Time: Apr_11_2019_13_14_06 PHY Build Info: releas_0 PMP Revision: 210290 PMP Version: 41_FW PMP build time: Apr_11_2019_18_34_08 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Apr 19 2019 10:54:53 OK
Date of generation	2019/04/19 10:54:53
Binary Size	5185536 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519704 u-boot.bin 3769060 ue_lte.fw 4096 partmap.bin 2726872 ue_lte.fw2
MD5	ba78abeebbd939efd1968f2efd1becb6 AppFW_flash.bin ca55792af5c8d67af5c29a9fd3a4c58d sysHeader_backup.bin.alt1250 83bbd1ad029a2333830d151e75ca3b50 sysHeader.bin.alt1250 e54b966a41179ed3fb2cfc05d8c33adf u-boot.bin 8ca8765d3fa0e21d19e1cdda400916cb ue_lte.fw 4da8569f5f7f8dbaa990956542f759b7 partmap.bin 9d1298c9c007da286f8e014a47105ee4 ue_lte.fw2
IMEI SV	04
TS 25 PLMN List	1st April 2019

1ustomer Release Note

12.7.2. Software Changes Description

12.7.2.1. New Features/Enhancements

Feature/ID	Description

12.7.2.2. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
DIZZY1-1094	[NVBU] Module fails to automatically restore NV data after file corrupted. Then module is crashed.
DIZZY1-1192	+CGDCONT setting revert to default after Upgrade
DIZZY1-1201	[NVBU] URC NVBU_IND does not have a valid <backup date> and <backup firmware version> when module automatically generates NV backup files after boot
DIZZY1-1244	[CMUX][ATD] Module crashes in long run test for ping with PPP on Linux DLC
DIZZY1-390	[GPRS][+CGTFT] Missing 1 space in response when sending command AT+CGTFT?
DIZZY1-1078	[MECS][KSLEEP][CEDRXS] The module does not go to sleep, hibernate mode again after receiving many packets of data
DIZZY1-1241	Module cannot go back into hibernate mode after UDP IP-PUSH
DIZZY1-1258	[AIRVANTAGE]Module is frozen when make a connection to AIRVANTAGE server with "Heartbeat=ON" and "Status report = ON"
DIZZY1-1304	[AT&T] LWM2M client is not configured with the correct production servers addresses

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12.7.2.3. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below: AT+KGPIOCFG=8,0,2 (Set GPIO8 output high) OK AT+KGPIO=8,1 OK	IO Configuration
[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below: AT+KGPIOCFG=6,0,2 (Set GPIO6 output high) OK AT+KGPIO=6,1 OK	IO Configuration
NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
EURY-1288	[CMUX][PROTOCOL] URC is received on all opened DLC when AT command is executed in a DLC

ID	Description
EURY-1261	[NBIOT] Periodic resets seen in LHT
EURY-1259	[CMUX] HL7800 module crashing after some time during ping test on AT&T
EURY-1256	High current consumption
EURY-1228	[MECS][CPSMS][EDRX] VGPIO is LOW when module enters LITE HIBERNATE
EURY-1113	[PROTOCOM][KIPOPT] "+KTCP_NOTIF: 1,4" is NOT returned after closing TCP server port
DIZZY1-1282	[GPRS][CGACT]After 30 times active PDP context by command AT+CGACT=1,<cid>, module return ERROR instead of OK
DIZZY1-1276	[GPRS][CGDCONT] +CGDCONT configuration isn't persistent after reboot
DIZZY1-1275	[KCELLMEAS] RSRP of KCELLMEAS is not correct for band 2
DIZZY1-1257	[PROTOCOL][KCNXUP] Can not bring connection up without activated PDP
DIZZY1-1255	[GPRS][CGDCONT][AIRVANTAGE][WDSS] Can not start TCP/UDP connection with PDP context 1 if PDP 2 is configured for AIRVANTAGE connection
DIZZY1-1250	[GPRS][THROUGHPUT][NB1]After dialing-up, some packets lost when pinging
DIZZY1-1248	[MECS][CPSMS] Have no response after device enters PSM in stress test
DIZZY1-1240	[SMS][CMGD] "OK" is returned too slowly when deleting all messages in full storage.
DIZZY1-1202	[PROTOCOM][KUDP_DATA] "+KUDP_DATA" is not displayed when send and receive UDP data in many times.
DIZZY1-1157	[TELSTRA] IPv6 DNS issue
DIZZY1-1096	[CPSMS][KSLEEP] Module can not receive SMS after wake up from Hibernate mode with SM preferred message storage
DIZZY1-1092	[NVBU] Module fails to restore NV data by NVBU command
DIZZY1-1091	[NVBU] Sometime module cannot generate backup by NVBU command
DIZZY1-1051	[NS][+COPS] Wrong responses for +COPS write command.
DIZZY1-1021	[AIRVANTAGE][WDSS][NB1] Couldn't start AIRVANTAGE connection with Deutsche Telekom operator.
DIZZY1-1019	[GPRS][THROUGHPUT][NB1]Network delay is too long with Deutsche Telekom operator.
DIZZY1-895	[NS][CEDRXRDP] Wrong response when testing command +CEDRXRDP
DIZZY1-494	[MECS][KCELL] Module returns +CME ERROR: 60 when sending command AT+KCELL=0

12.8. BHL78XX.2.5.7.0

12.8.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.7.0-RK0201010041
Identification	ati HL7800 OK ati3 BHL7800.2.5.7.0.20190415 OK ati9 HL7800.2.5.7 BHL78xx.2.5.7.0.RK_02_01_01_00_41.20190415 2019/04/15 16:45:50 IMEI-SV: 3546160900092204 Legato RTOS: 18.09.2.ALT1250.rc5 2019/04/04 14:02:47 atSwi: 13.01 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_37__76cc94b4672ac9bde0f08de3724a5c20b28bc2ba MAC: ALT1250_02_01_01_00_38_LO PHY: 12.50.209178 PMP: 210432 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_00_41 Apps: RKAPP_02_01_01_00_37__76cc94b4672ac9bde0f08de3724a5c20b28bc2ba Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_210432 MAC Package Version: ALT1250_02_01_01_00_38_LO MAC Build Time: Apr_15_2019_13_19_38 PHY Revision: 12.50.209178 PHY Build Time: Mar_28_2019_10_52_30 PHY Build Info: releas_0 PMP Revision: 210432 PMP Version: 38_LO PMP build time: Apr_15_2019_13_19_38 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Apr 15 2019 16:44:56

	Services (ATI, AT%VER)
	OK
Date of generation	2019/04/15 16:45:50
Binary Size	5173248 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519704 u-boot.bin 3765228 ue_lte.fw 4096 partmap.bin 2726852 ue_lte.fw2
MD5	90efaa3bfd17d9d5edd79189a03dc9b230ae3cde AppFW_flash.bin 16a5125a846fb6fa98b063422f55161eca896654 sysHeader_backup.bin.alt1250 f8c5789a7df6167a783047a77680085e0016eeb0 sysHeader.bin.alt1250 06c6a2c84977acb00ae781432b6060d18f35a05e u-boot.bin f2297bd4a90e4757df30266f0578c661ab401221 ue_lte.fw 1c58b2248708edf47eb2269eabe7ec3d9414d186 partmap.bin 68bfd2ac656085760748fdfb84e9833d4a62b115 ue_lte.fw2
IMEI SV	04
TS 25 PLMN List	18th February 2019

12.8.2. Software Changes Description

12.8.2.1. New Features/Enhancements

Feature/ID	Description

12.8.2.2. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
DIZZY1-1094	[NVBU] Module fails to automatically restore NV data after file corrupted. Then module is crashed.
DIZZY1-1046	Exception observed during PSM/Hibernate tests
DIZZY1-1110	[NVBU] Module fails to generate NV backup automatically when NV backup is corrupted
DIZZY1-1123	[AIRVANTAGE][WDSS] URC +WDSI: 8 is not displayed when session is terminated by AT+WDSS=1,0 and module has a reset with AT&T
DIZZY1-507	[MECS][CEDRXS] AT+CEDRXS=? returns the wrong supported range when module is configured in NB1
DIZZY1-1008	[AVMS][FOTA] Module reconnect to DM server before Starting Firmware update when upgrade FW from N-1 to N
DIZZY1-1040	[] Device cannot attach to the network

ID	Description
DIZZY1-1319	[CEDRXS] eDRX does not work when register to Orange F network

12.8.2.3.   Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality

[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=8,0,2 (Set GPIO8 output high)`
	`OK`
	`AT+KGPIO=8,1`
	`OK`
		IO Configuration

[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=6,0,2 (Set GPIO6 output high)`
	`OK`
	`AT+KGPIO=6,1`
	
	`OK`
		IO Configuration

NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
DIZZY1-1096	Module cannot receive SMS after waking up from Hibernate mode with SM preferred message storage
DIZZY1-1053	Cannot initiate dial-up using DLCs port on Linux OS
DIZZY1-1051	Wrong responses when testing +COPS command, and <mode> is persistent after set CFUN with config AT+COPS=1,2,"00101".
DIZZY1-1024	Periodic resets seen in LHT
DIZZY1-1021	Can't use AVMS feature with Deutsche Telekom network
DIZZY1-1019	Bad network throughput, delay time is too long for TCP/UDP/AVMS connection which might cause network time-out issue.
DIZZY1-895	Wrong response when testing command +CEDRXRDP
DIZZY1-494	+KCELL=0 AT command gives CMEE ERROR: 60
DIZZY1-208	Unexpected URCs are produced over each AT channel
DIZZY1-1157	[Telstra] IPv6 DNS issue
DIZZY1-1138	VGPIO is LOW when module enters LITE HIBERNATE
DIZZY1-1031	eDRX/Hibernate High current consumption
DIZZY1-987	NV Backup issues raised by dev team
DIZZY1-1216	[EDRX/KSLEEP] AT commands do not answer after +CFUN=1,1 if traces AT_SWITCHES/AT_CLIENT are deactivated
DIZZY1-1202	[KUDP_DATA] "+KUDP_DATA" is not displayed when send and receive UDP data in many times.
DIZZY1-1197	[KIPOPT] "+KTCP_NOTIF: 1,4" is NOT returned after closing TCP server port
DIZZY1-1192	+CGDCONT setting revert to default after Upgrade
DIZZY1-1186	eDRX current consumption with network
DIZZY1-1147	[CMUX] HL7800 module crashing after some time during ping test on AT&T
DIZZY1-1092	[NVBU] Module fails to restore NV data by NVBU command
DIZZY1-1091	[NVBU] Sometime module cannot generate backup by NVBU command
DIZZY1-1282	[GPRS][CGACT]After 30 times active PDP context by command AT+CGACT=1,<cid>, module return ERROR instead of OK
DIZZY1-1276	[GPRS][CGDCONT] +CGDCONT configuration isn't persistent after reboot
DIZZY1-1275	[KCELLMEAS] RSRP of KCELLMEAS is not correct for band 2
DIZZY1-1258	[AVMS] Module is frozen when make a connection to AVMS server with "Heartbeat=ON" and "Status report = ON"
DIZZY1-1257	[KCNXUP] Cannot bring connection up without activated PDP

ID	Description
DIZZY1-1255	[GPRS][CGDCONT][AVMS][WDSS] Cannot start TCP/UDP connection with PDP context 1 if PDP 2 is configured for AVMS connection
DIZZY1-1254	NB1 Idle Sleep modes Crash CMW500
DIZZY1-1250	[GPRS][THROUGHPUT][NB1] After dialing-up, some packets lost when pinging
DIZZY1-1249	[KTCPCNX] Response time for AT+KTCPCNX is too long when starting TCP Connection with invalid IP address or invalid port
DIZZY1-1248	[CPSMS] Have no response after device enters PSM in stress test
DIZZY1-1241	Device cannot go back into hibernate mode after UDP IP-PUSH
DIZZY1-1240	[SMS][CMGD] "OK" is returned too slowly when deleting all messages in full storage.
DIZZY1-1210	[CMUX] HL7800 Crash when start PPP
DIZZY1-1207	HL7800 crash seen during PPP call
DIZZY1-1201	[NVBU] URC NVBU_IND does not have a valid <backup date> and <backup firmware version> when module automatically generates NV backup files after boot

12.9. BHL78XX.2.5.6.1

12.9.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.6.1-RK0201010041
Identification	ati HL7800 OK ati3 BHL7800.2.5.6.1.20190412 OK ati9 HL7800.2.5.6 BHL78xx.2.5.6.1.RK_02_01_01_00_41.20190412 2019/04/12 16:08:23 IMEI-SV: 3546160900092204 Legato RTOS: 18.09.2.ALT1250.rc5 2019/04/04 14:02:47 atSwi: 13.01 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_37__76cc94b4672ac9bde0f08de3724a5c20b28b c2ba MAC: ALT1250_02_01_01_00_38_FW PHY: 12.50.209178 PMP: 209236 SBUB: 0

	Services (ATI, AT%VER)
	SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_00_41 Apps: RKAPP_02_01_01_00_37__76cc94b4672ac9bde0f08de3724a5c20b28bc2ba Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_209236 MAC Package Version: ALT1250_02_01_01_00_38_FW MAC Build Time: Mar_28_2019_15_28_56 PHY Revision: 12.50.209178 PHY Build Time: Mar_28_2019_10_52_30 PHY Build Info: releas_0 PMP Revision: 209236 PMP Version: 38_FW PMP build time: Mar_28_2019_15_28_56 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Apr 12 2019 16:06:49 OK
Date of generation	2019/04/12 16:06:49
Binary Size	5505024 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519688 u-boot.bin 3765052 ue_lte.fw 4096 partmap.bin 2726852 ue_lte.fw2
MD5	6d3028552e6ad8540e80df71bae7c7c47c2d5fef AppFW_flash.bin 50e791fe8add94599b736086aef3802e3f245f1a sysHeader_backup.bin.alt1250 518403ebd6cbde809a2684a1b3d77e63795905e9 sysHeader.bin.alt1250 65dad9458387fc7480087bbc7397e29b793ad5bf u-boot.bin eb1d92d3d4d2200a07d43194684ed5942381f5cf ue_lte.fw 496b2e0d82cc83f010e42d2201829f45cf1a0ce9 partmap.bin 68bfd2ac656085760748fdfb84e9833d4a62b115 ue_lte.fw2
IMEI SV	04
TS 25 PLMN List	18th February 2019

12.9.2. **Software Changes Description**

12.9.2.1. **New Features/Enhancements**

Feature/ID	Description

12.9.2.2. **Validated Corrections/Improvements**

This section presents all corrections or improvements integrated in this release.

ID	Description
DIZZY1-1094	[NVBU] Module fails to automatically restore NV data after file corrupted. Then module is crashed.
DIZZY1-1191	MCU cannot receive AT command from module
DIZZY1-1216	[eDRX/PSM] AT commands do not answer after +CFUN=1,1 if traces AT_SWITCHES/AT_CLIENT is deactivated
DIZZY1-792	Device is not able to enter in hibernate when in PSM mode in NBIOT or M1
DIZZY1-1110	[NVBU] Module fails to generate NV backup automatically when NV backup is corrupted
DIZZY1-1186	eDRX current consumption with network
DIZZY1-1207	Device crash during PPP call
DIZZY1-1210	[CMUX] Device crash when start PPP Session
DIZZY1-1244	[CMUX][ATD] Module crashes in long run test for ping with PPP on Linux DLC
DIZZY1-233	[ATH] NO CARRIER is not returned after disconnecting the data call by ATH
DIZZY1-574	[EDRX][CPSMS] CTS is not HIGH immediately after module is woken up by SMS
DIZZY1-1027	[KCELLMEAS] Extra \r\n when testing +KCELLMEAS command
DIZZY1-1053	[NB1][Linux][CMUX][DIAL] Module resets when using DLC1 to initiate dial-up connection on Linux OS
DIZZY1-1141	[KTCPCLOSE] +KCNX_IND: 1,5,30 is displayed after closing TCP session
DIZZY1-1201	[NVBU] URC NVBU_IND does not have a valid <backup date> and <backup firmware version> when module automatically generates NV backup files after boot
DIZZY1-1202	[KUDP_DATA] "+KUDP_DATA" is not displayed when send and receive UDP data in many times.

12.9.2.3. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality

[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=8,0,2 (Set GPIO8 output high)`
	`OK`
	`AT+KGPIO=8,1`
	`OK`
		IO Configuration

[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=6,0,2 (Set GPIO6 output high)`
	`OK`
	`AT+KGPIO=6,1`
	
	`OK`
		IO Configuration

NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
DIZZY1-1096	Module cannot receive SMS after waking up from Hibernate mode with SM preferred message storage

ID	Description
DIZZY1-1051	Wrong responses when testing +COPS command, and <mode> is persistent after set CFUN with config AT+COPS=1,2,"00101".
DIZZY1-1024	Periodic resets seen in LHT
DIZZY1-1021	Can't use AVMS feature with Deutsche Telekom network
DIZZY1-1019	Bad network throughput, delay time is too long for TCP/UDP/AVMS connection which might cause network time-out issue.
DIZZY1-895	Wrong response when testing command +CEDRXRDP
DIZZY1-494	+KCELL=0 AT command gives CMEE ERROR: 60
DIZZY1-208	Unexpected URCs are produced over each AT channel
DIZZY1-1157	[Telstra] IPv6 DNS issue
DIZZY1-1138	VGPIO is LOW when module enters LITE HIBERNATE
DIZZY1-1031	eDRX/Hibernate High current consumption
DIZZY1-987	NV Backup issues raised by dev team
DIZZY1-1197	[KIPOPT] "+KTCP_NOTIF: 1,4" is NOT returned after closing TCP server port
DIZZY1-1192	+CGDCONT setting revert to default after Upgrade
DIZZY1-1147	[CMUX] HL7800 module crashing after some time during ping test on AT&T
DIZZY1-1092	[NVBU] Module fails to restore NV data by NVBU command
DIZZY1-1091	[NVBU] Sometime module cannot generate backup by NVBU command
DIZZY1-1282	[GPRS][CGACT]After 30 times active PDP context by command AT+CGACT=1,<cid>, module return ERROR instead of OK
DIZZY1-1276	[GPRS][CGDCONT] +CGDCONT configuration isn't persistent after reboot
DIZZY1-1275	[KCELLMEAS] RSRP of KCELLMEAS is not correct for band 2
DIZZY1-1258	[AVMS] Module is frozen when make a connection to AVMS server with "Heartbeat=ON" and "Status report = ON"
DIZZY1-1257	[KCNXUP] Cannot bring connection up without activated PDP
DIZZY1-1255	[GPRS][CGDCONT][AVMS][WDSS] Cannot start TCP/UDP connection with PDP context 1 if PDP 2 is configured for AVMS connection
DIZZY1-1254	NB1 Idle Sleep modes Crash CMW500
DIZZY1-1250	[GPRS][THROUGHPUT][NB1] After dialing-up, some packets lost when pinging
DIZZY1-1249	[KTCPCNX] Response time for AT+KTCPCNX is too long when starting TCP Connection with invalid IP address or invalid port
DIZZY1-1248	[CPSMS] Have no response after device enters PSM in stress test
DIZZY1-1241	Device cannot go back into hibernate mode after UDP IP-PUSH

ID	Description
DIZZY1-1240	[SMS][CMGD] "OK" is returned too slowly when deleting all messages in full storage.

12.10. BHL78XX.2.5.6.0

12.10.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.6.0-RK0201010041
Identification	ati HL7800 OK ati3 BHL7800.2.5.6.0.20190401 OK ati9 HL7800.2.5.6 BHL78xx.2.5.6.0.RK_02_01_01_00_41.20190405 2019/04/05 15:48:09 IMEI-SV: 3546160900092204 Legato RTOS: 18.09.2.ALT1250.rc5 2019/04/04 14:02:47 atSwi: 13.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_37__76cc94b4672ac9bde0f08de3724a5c20b28bc2ba MAC: ALT1250_02_01_01_00_38_FW PHY: 12.50.209178 PMP: 209236 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_00_41 Apps: RKAPP_02_01_01_00_37__76cc94b4672ac9bde0f08de3724a5c20b28bc2ba Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_209236 MAC Package Version: ALT1250_02_01_01_00_38_FW MAC Build Time: Mar_28_2019_15_28_56 PHY Revision: 12.50.209178 PHY Build Time: Mar_28_2019_10_52_30 PHY Build Info: releas_0 PMP Revision: 209236 PMP Version: 38_FW PMP build time: Mar_28_2019_15_28_56

	Services (ATI, AT%VER)
	DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Apr 5 2019 15:46:22 OK
Date of generation	2019/04/01 08:46:47
Binary Size	5533696 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519704 u-boot.bin 3765052 ue_lte.fw 4096 partmap.bin 2726852 ue_lte.fw2
MD5	c4ddb920149a8b2bf82b49be3cd0b202f060526b AppFW_flash.bin 16a5125a846fb6fa98b063422f55161eca896654 sysHeader_backup.bin.alt1250 f8c5789a7df6167a783047a77680085e0016eeb0 sysHeader.bin.alt1250 8b50a5f548a75a13e5925a53480cb83f8ed3322c u-boot.bin eb1d92d3d4d2200a07d43194684ed5942381f5cf ue_lte.fw cce2c1e24601f1a8210b441a2847f8f6522ac733 partmap.bin 68bfd2ac656085760748fdfb84e9833d4a62b115 ue_lte.fw2
IMEI SV	04
TS 25 PLMN List	18th February 2019

12.10.2. Software Changes Description

12.10.2.1. New Features/Enhancements

Feature/ID	Description

12.10.2.2. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
DIZZY1-1042	[KHWIOCFG] GPIO6 and GPIO8 are displayed in +KGPIOCFG command when they are reserved for +KHWIOCFG
DIZZY1-1076	Exception observed during SMS loopback test on live ATT and VZW network
DIZZY1-1098	[IPR] Baud rate is changed to default after reboot
DIZZY1-1123	[AVMS][WDSS] URC +WDSI: 8 is not displayed when session is terminated by AT+WDSS=1,0 and module has a reset with AT&T
DIZZY1-1178	[AVMS] DUT returns +WDSI: 11,1 during FOTA upgrade

ID	Description
DIZZY1-286	[MECS][KSRAT] Radio access technology +KSRAT is not persistent after upgrade FW
DIZZY1-324	[SMS][+CMGR] Wrong response when read SMS in PDU mode
DIZZY1-648	[PPP] Cannot re-establish dial-up connection after disconnecting
DIZZY1-798	[PPP] pings stop after some time but PPP connection still up
DIZZY1-899	Device connects to the BS server after waiting the user agreement timer for installing expired (30 minutes)
DIZZY1-1089	GPIO6 does not work as expected during TAU
DIZZY1-1114	[LGU+] After PPP Dial up, AT Command does not work.
DIZZY1-1118	[LGU+] After disconnecting from PPP dial up, unable to connect to PPP dial up
DIZZY1-1122	Double +WDSI: 14 is returned when upgrade FW by FOTA with AT&T
DIZZY1-1130	[PPP] Unable to activate PPP Twice after toggling Wake Up Pin

12.10.2.3. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
Reset	Device is frozen after a reboot (+CFUN=1,1 or Reset button) after a eDRX/PSM.	Low Power Mode
[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below: AT+KGPIOCFG=8,0,2 (Set GPIO8 output high) OK AT+KGPIO=8,1 OK	IO Configuration

Features	Description (What/When)	Impacted Functionality/Sub-Functionality

[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=6,0,2 (Set GPIO6 output high)`
	`OK`
	`AT+KGPIO=6,1`
	
	`OK`
		IO Configuration

NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
DIZZY1-1096	Module cannot receive SMS after waking up from Hibernate mode with SM preferred message storage
DIZZY1-1053	Cannot initiate dial-up using DLCs port on Linux OS
DIZZY1-1051	Wrong responses when testing +COPS command, and <mode> is persistent after set CFUN with config AT+COPS=1,2,"00101".
DIZZY1-1024	Periodic resets seen in LHT
DIZZY1-1021	Can't use AVMS feature with Deutsche Telekom network
DIZZY1-1019	Bad network throughput, delay time is too long for TCP/UDP/AVMS connection which might cause network time-out issue.
DIZZY1-895	Wrong response when testing command +CEDRXRDP
DIZZY1-494	+KCELL=0 AT command gives CMEE ERROR: 60

ID	Description
DIZZY1-208	Unexpected URCs are produced over each AT channel
DIZZY1-1157	[Telstra] IPv6 DNS issue
DIZZY1-1138	VGPIO is LOW when module enters LITE HIBERNATE
DIZZY1-1031	eDRX/Hibernate High current consumption
DIZZY1-987	NV Backup issues raised by dev team
DIZZY1-1216	[EDRX/KSLEEP] AT commands do not answer after +CFUN=1,1 if traces AT_SWITCHES/AT_CLIENT are deactivated
DIZZY1-1202	[KUDP_DATA] "+KUDP_DATA" is not displayed when send and receive UDP data in many times.
DIZZY1-1197	[KIPOPT] "+KTCP_NOTIF: 1,4" is NOT returned after closing TCP server port
DIZZY1-1192	+CGDCONT setting revert to default after Upgrade
DIZZY1-1186	eDRX current consumption with network
DIZZY1-1147	[CMUX] HL7800 module crashing after some time during ping test on AT&T
DIZZY1-1092	[NVBU] Module fails to restore NV data by NVBU command
DIZZY1-1091	[NVBU] Sometime module cannot generate backup by NVBU command
DIZZY1-1282	[GPRS][CGACT]After 30 times active PDP context by command AT+CGACT=1,<cid>, module return ERROR instead of OK
DIZZY1-1276	[GPRS][CGDCONT] +CGDCONT configuration isn't persistent after reboot
DIZZY1-1275	[KCELLMEAS] RSRP of KCELLMEAS is not correct for band 2
DIZZY1-1258	[AVMS] Module is frozen when make a connection to AVMS server with "Heartbeat=ON" and "Status report = ON"
DIZZY1-1257	[KCNXUP] Cannot bring connection up without activated PDP
DIZZY1-1255	[GPRS][CGDCONT][AVMS][WDSS] Cannot start TCP/UDP connection with PDP context 1 if PDP 2 is configured for AVMS connection
DIZZY1-1254	NB1 Idle Sleep modes Crash CMW500
DIZZY1-1250	[GPRS][THROUGHPUT][NB1] After dialing-up, some packets lost when pinging
DIZZY1-1249	[KTCPCNX] Response time for AT+KTCPCNX is too long when starting TCP Connection with invalid IP address or invalid port
DIZZY1-1248	[CPSMS] Have no response after device enters PSM in stress test
DIZZY1-1241	Device cannot go back into hibernate mode after UDP IP-PUSH
DIZZY1-1240	[SMS][CMGD] "OK" is returned too slowly when deleting all messages in full storage.
DIZZY1-1210	[CMUX] HL7800 Crash when start PPP
DIZZY1-1207	HL7800 crash seen during PPP call

ID	Description
DIZZY1-1201	[NVBU] URC NVBU_IND does not have a valid <backup date> and <backup firmware version> when module automatically generates NV backup files after boot

12.11. BHL78XX.2.5.5.0

12.11.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.5.0-RK0201010041
Identification	ati HL7800 OK ati3 BHL7800.2.5.5.0.20190401 OK ati9 HL7800.2.5.5 BHL78xx.2.5.5.0.RK_02_01_01_00_41.20190401 2019/04/01 08:46:47 IMEI-SV: 3546160900092203 Legato RTOS: 18.09.2.ALT1250.rc4 2019/03/28 17:12:38 atSwi: 12.01 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_37__76cc94b4672ac9bde0f08de3724a5c20b28bc2ba MAC: ALT1250_02_01_01_00_38_FW PHY: 12.50.209178 PMP: 209236 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 at%ver NP Package: RK_02_01_01_00_41 Apps: RKAPP_02_01_01_00_37__76cc94b4672ac9bde0f08de3724a5c20b28bc2ba Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_209236 MAC Package Version: ALT1250_02_01_01_00_38_FW MAC Build Time: Mar_28_2019_15_28_56 PHY Revision: 12.50.209178 PHY Build Time: Mar_28_2019_10_52_30 PHY Build Info: releas_0 PMP Revision: 209236 PMP Version: 38_FW

	PMP build time: Mar_28_2019_15_28_56 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Apr 1 2019 08:45:52 OK
Date of generation	2019/04/01 08:46:47
Binary Size	5505024 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519688 u-boot.bin 3765052 ue_lte.fw 4096 partmap.bin 2726852 ue_lte.fw2
MD5	6d3028552e6ad8540e80df71bae7c7c47c2d5fef AppFW_flash.bin 50e791fe8add94599b736086aef3802e3f245f1a sysHeader_backup.bin.alt1250 518403ebd6cbde809a2684a1b3d77e63795905e9 sysHeader.bin.alt1250 65dad9458387fc7480087bbc7397e29b793ad5bf u-boot.bin eb1d92d3d4d2200a07d43194684ed5942381f5cf ue_lte.fw 496b2e0d82cc83f010e42d2201829f45cf1a0ce9 partmap.bin 68bfd2ac656085760748fdfb84e9833d4a62b115 ue_lte.fw2
IMEI SV	03
TS 25 PLMN List	18th February 2019

12.11.2. Software Changes Description

12.11.2.1. New Features/Enhancements

Feature/ID	Description

12.11.2.2. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release

DIZZY1-931	[GPIO2] Randomly pull High
DIZZY1-892	[AVMS][NB1] Module takes a long time to response during FOTA testing
DIZZY1-326	[GPRS][CGEREP][CGEV] The URC +CGEV is not displayed when GPRS event happens.
DIZZY1-1160	[CEDRXS] CEDRXP have wrong format parameters

12.11.2.3. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below: AT+KGPIOCFG=8,0,2 (Set GPIO8 output high) OK AT+KGPIO=8,1 OK	IO Configuration
[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below: AT+KGPIOCFG=6,0,2 (Set GPIO6 output high) OK AT+KGPIO=6,1 OK	IO Configuration
NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
DIZZY1-1130	Unable to perform PPP Twice

ID	Description
DIZZY1-1123	Wrong URC +WDSI when executing AT+WDSS=1,0 and module has a reset
DIZZY1-1110	NV backup is not generated automatically after it is corrupted
DIZZY1-1096	Module cannot receive SMS after waking up from Hibernate mode with SM preferred message storage
DIZZY1-1089	GPIO6 does not work as expected during TAU
DIZZY1-1053	Cannot initiate dial-up using DLCs port on Linux OS
DIZZY1-1051	Wrong responses when testing +COPS command, and <mode> is persistent after set CFUN with config AT+COPS=1,2,"00101".
DIZZY1-1024	Periodic resets seen in LHT
DIZZY1-1021	Can't use AVMS feature with Deutsche Telekom network
DIZZY1-1019	Bad network throughput, delay time is too long for TCP/UDP/AVMS connection which might cause network time-out issue.
DIZZY1-895	Wrong response when testing command +CEDRXRDP
DIZZY1-798	PPP pings stop after some time but PPP connection still up
DIZZY1-792	Not able to enter in hibernate when in PSM mode in NBIOT
DIZZY1-782	In some conditions of timers: T3412 and T3324 in PSM, the device don't go back to hibernate. Impacting current consumption
DIZZY1-494	+KCELL=0 AT command gives CMEE ERROR: 60
DIZZY1-324	When using AT+CMGR for SMS response longer than 127 characters, the response is truncated.
DIZZY1-286	[KSRAT] Radio access technology +KSRAT is not persistent after upgrade FW
DIZZY1-208	Unexpected URCs are produced over each AT channel
DIZZY1-199	[CMUX] Wrong response when send SABM to set up connection to DLC1, DLC2, DLC3, DLC4
DIZZY1-1157	[Telstra] IPv6 DNS issue
DIZZY1-1138	VGPIO is LOW when module enters LITE HIBERNATE
DIZZY1-1031	eDRX/Hibernate High current consumption
DIZZY1-987	NV Backup issues raised by dev team
DIZZY1-899	[Telstra][FOTA] Module connects to the BS server after waiting the user agreement timer for installing expired (30 minutes)
DIZZY1-648	Cannot re-establish dial-up connection after disconnecting
DIZZY1-543	[KCNXUP] Cannot bring connection up without activated PDP
DIZZY1-1216	[EDRX/KSLEEP] AT commands do not answer after +CFUN=1,1 if traces AT_SWITCHES/AT_CLIENT are deactivated

ID	Description
DIZZY1-1202	[PROTOCOM][KUDP_DATA] "+KUDP_DATA" is not displayed when send and receive UDP data in many times.
DIZZY1-1197	[PROTOCOM][KIPOPT] "+KTCP_NOTIF: 1,4" is NOT returned after closing TCP server port
DIZZY1-1192	+CGDCONT setting revert to default after Upgrade
DIZZY1-1191	MCU cannot receive AT command from module
DIZZY1-1187	[PSM] After the module enters sleep mode, URC response miss some characters when module is woken by TCP or UDP data
DIZZY1-1186	eDRX current consumption with network
DIZZY1-1162	Power consumption too high above the target in LTE-M PSM after 1h in hibernate mode
DIZZY1-1147	[CMUX] HL7800 module crashing after some time during ping test on AT&T
DIZZY1-1094	[NVBU] Module fails to automatically restore NV data after file corrupted. Then module is crashed.
DIZZY1-1092	[NVBU] Module fails to restore NV data by NVBU command
DIZZY1-1091	[NVBU] Sometime module cannot generate backup by NVBU command
DIZZY1-1042	[KHWIOCFG] GPIO6 and GPIO8 are displayed in +KGPIOCFG command when they are reserved for +KHWIOCFG

12.12. BHL78XX.2.5.4.0

12.12.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.4.0-RK0201010040
Identification	ati HL7800 OK ati3 BHL7800.2.5.4.0.20190329 OK ati9 HL7800.2.5.4 BHL78xx.2.5.4.0.RK_02_01_01_00_40.20190329 2019/03/29 13:17:40 IMEI-SV: 3546160900092203 Legato RTOS: 18.09.2.ALT1250.rc4 2019/03/28 17:12:38 atSwi: 12.01 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_36__91fd885226284f8043fc35d1ab88457df59bdafd

	MAC: ALT1250_02_01_01_00_37_FW PHY: 12.50.208836 PMP: 208843 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 at%ver NP Package: RK_02_01_01_00_40 Apps: RKAPP_02_01_01_00_36__91fd885226284f8043fc35d1ab88457df59bdafd Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_208843 MAC Package Version: ALT1250_02_01_01_00_37_FW MAC Build Time: Mar_24_2019_17_43_38 PHY Revision: 12.50.208836 PHY Build Time: Mar_24_2019_16_43_43 PHY Build Info: releas_0 PMP Revision: 208843 PMP Version: 37_FW PMP build time: Mar_24_2019_17_43_38 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Mar 29 2019 13:16:47 OK
Date of generation	2019/03/29 13:17:40
Binary Size	5500928 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519688 u-boot.bin 3763324 ue_lte.fw 4096 partmap.bin 2726040 ue_lte.fw2
MD5	da1bdf67f52827695236111592459a85929f9128 AppFW_flash.bin 50e791fe8add94599b736086aef3802e3f245f1a sysHeader_backup.bin.alt1250 518403ebd6cbde809a2684a1b3d77e63795905e9 sysHeader.bin.alt1250 d7b978688c12ba462f69bb717696fe41f4a56f64 u-boot.bin 399f48e61067e4a22b258dd16855053e961dbfd4 ue_lte.fw 728597f976a6ed5b74297febe2ce7e92393d0fd5 partmap.bin 4a48dbb274084f2b769a832fd8883d76dbf55133 ue_lte.fw2
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12.12.2. Software Changes Description

12.12.2.1.   New Features/Enhancements

Feature/ID	Description

12.12.2.2.   Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release

ID	Description
DIZZY1-316	[CMUX][PROTOCOL] Many same URCs are received on a DLC
DIZZY1-924	Module auto attach to LTE after executing +CGATT=0 detach command
DIZZY1-1029	[TCP Testing] Module cannot go back into hibernate mode
DIZZY1-1111	+KCELLMEAS=0 causes firmware crash and reboot
DIZZY1-1128	[PSM] Module cannot go to Lite Hibernate after T3324
DIZZY1-1131	[KSLEEP] The module does not enter Sleep Mode/Lite Hibernate again after awakened
DIZZY1-1132	[EDRX] Module cannot enter Lite hibernate mode again after receiving data or SMS
DIZZY1-668	[PSM] Module cannot go to LITE HIBERNATE mode with SIM PIN code activated when configured in HIBERNATE mode
DIZZY1-714	Network registration is not stable on live network.
DIZZY1-738	[SMS][CMGW] AT ports is frozen after save messages PDU mode to memory
DIZZY1-917	[COPS] Module can't register to network automatically with AT+COPS=0 command with NB1
DIZZY1-1035	+KCNX_IND:1,0,0 is not output after AT+CFUN=4
DIZZY1-1039	Device is crashed during CFUN, COPS stress test
DIZZY1-1136	Device enters continuous reset cycle with Exception observed when module was sitting idle for a long time
DIZZY1-1146	Exception observed during PSM/hibernate testing. Module consumes ~145mA.

12.12.2.3. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality

[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=8,0,2 (Set GPIO8 output high)`
	`OK`
	`AT+KGPIO=8,1`
	`OK`
		IO Configuration

[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=6,0,2 (Set GPIO6 output high)`
	`OK`
	`AT+KGPIO=6,1`
	
	`OK`
		IO Configuration

NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
DIZZY1-1130	Unable to perform PPP Twice

ID	Description
DIZZY1-1123	Wrong URC +WDSI when executing AT+WDSS=1,0 and module has a reset
DIZZY1-1110	NV backup is not generated automatically after it is corrupted
DIZZY1-1096	Module cannot receive SMS after waking up from Hibernate mode with SM preferred message storage
DIZZY1-1089	GPIO6 does not work as expected during TAU
DIZZY1-1053	Cannot initiate dial-up using DLCs port on Linux OS
DIZZY1-1051	Wrong responses when testing +COPS command, and <mode> is persistent after set CFUN with config AT+COPS=1,2,"00101".
DIZZY1-1024	Periodic resets seen in LHT
DIZZY1-1021	Can't use AVMS feature with Deutsche Telekom network
DIZZY1-1019	Bad network throughput, delay time is too long for TCP/UDP/AVMS connection which might cause network time-out issue.
DIZZY1-895	Wrong response when testing command +CEDRXRDP
DIZZY1-798	PPP pings stop after some time but PPP connection still up
DIZZY1-792	Not able to enter in hibernate when in PSM mode in NBIOT
DIZZY1-782	In some conditions of timers: T3412 and T3324 in PSM, the device don't go back to hibernate. Impacting current consumption
DIZZY1-494	+KCELL=0 AT command gives CMEE ERROR: 60
DIZZY1-324	When using AT+CMGR for SMS response longer than 127 characters, the response is truncated.
DIZZY1-286	[KSRAT] Radio access technology +KSRAT is not persistent after upgrade FW
DIZZY1-208	Unexpected URCs are produced over each AT channel
DIZZY1-199	[CMUX] Wrong response when send SABM to set up connection to DLC1, DLC2, DLC3, DLC4
DIZZY1-1157	[Telstra] IPv6 DNS issue
DIZZY1-1138	VGPIO is LOW when module enters LITE HIBERNATE
DIZZY1-1031	eDRX/Hibernate High current consumption
DIZZY1-987	NV Backup issues raised by dev team
DIZZY1-899	[Telstra][FOTA] Module connects to the BS server after waiting the user agreement timer for installing expired (30 minutes)
DIZZY1-648	Cannot re-establish dial-up connection after disconnecting
DIZZY1-543	[KCNXUP] Cannot bring connection up without activated PDP
DIZZY1-1216	[EDRX/KSLEEP] AT commands do not answer after +CFUN=1,1 if traces AT_SWITCHES/AT_CLIENT are deactivated

ID	Description
DIZZY1-1202	[PROTOCOM][KUDP_DATA] "+KUDP_DATA" is not displayed when send and receive UDP data in many times.
DIZZY1-1197	[PROTOCOM][KIPOPT] "+KTCP_NOTIF: 1,4" is NOT returned after closing TCP server port
DIZZY1-1192	+CGDCONT setting revert to default after Upgrade
DIZZY1-1191	MCU cannot receive AT command from module
DIZZY1-1187	[PSM] After the module enters sleep mode, URC response miss some characters when module is woken by TCP or UDP data
DIZZY1-1186	eDRX current consumption with network
DIZZY1-1162	Power consumption too high above the target in LTE-M PSM after 1h in hibernate mode
DIZZY1-1147	[CMUX] HL7800 module crashing after some time during ping test on AT&T
DIZZY1-1094	[NVBU] Module fails to automatically restore NV data after file corrupted. Then module is crashed.
DIZZY1-1092	[NVBU] Module fails to restore NV data by NVBU command
DIZZY1-1091	[NVBU] Sometime module cannot generate backup by NVBU command
DIZZY1-1042	[KHWIOCFG] GPIO6 and GPIO8 are displayed in +KGPIOCFG command when they are reserved for +KHWIOCFG

12.13. BHL78XX.2.5.3.0

12.13.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.3.0-RK0201010036
Identification	ati HL7800 OK ati3 BHL7800.2.5.3.0.20190322 OK ati9 HL7800.2.5.3 BHL78xx.2.5.3.0.RK_02_01_01_00_36.20190322 2019/03/22 17:30:30 IMEI-SV: 3546160900011403 Legato RTOS: 18.09.2.ALT1250.rc3 2019/03/20 11:02:55 atSwi: 12.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_34__c7a89c4ac148f9f2fe8d9135381b98ebd05e137c MAC: ALT1250_02_01_01_00_34_FW

	PHY: 12.50.207152 PMP: 207588 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0 OK at%ver NP Package: RK_02_01_01_00_36 Apps: RKAPP_02_01_01_00_34__c7a89c4ac148f9f2fe8d9135381b98ebd05e137c Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_207588 MAC Package Version: ALT1250_02_01_01_00_34_FW MAC Build Time: Mar_14_2019_17_14_36 PHY Revision: 12.50.207152 PHY Build Time: Mar_05_2019_16_53_40 PHY Build Info: releas_0 PMP Revision: 207588 PMP Version: 34_FW PMP build time: Mar_14_2019_17_14_36 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Mar 22 2019 17:29:26
Date of generation	2019/03/22 17:29:26
Binary Size	5505024 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519036 u-boot.bin 3762032 ue_lte.fw 4096 partmap.bin 2721420 ue_lte.fw2
MD5	3b1c6629086e5153167f05c7eb1f7ff8 AppFW_flash.bin 957d6d2c7574f41be80dd3a67eb37822 sysHeader_backup.bin.alt1250 7f9fb4353a94c547b5568a3823e8f023 sysHeader.bin.alt1250 6bc5d5c3ddebd1c32acaaabd28b54f98 u-boot.bin f953a78742ec265e875dc21f51070a15 ue_lte.fw c007f8b490fc5cc69c54bb8c6356e931 partmap.bin b3687744ced72449c941261095981105 ue_lte.fw2
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12.13.2. **Software Changes Description**

12.13.2.1.   **New Features/Enhancements**

Feature/ID	Description

12.13.2.2. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release

ID	Description
DIZZY1-1032	MTU for IPv4 is not compliant with LGU+ requirements
DIZZY1-988	UDP data can only be received up to 1500 bytes
DIZZY1-207	Device not receive "+KTCP_NOTIF: 1,4" URC after re-transmission timeout during "AT+KTCPSND" command execution
DIZZY1-264	Can't switch to command mode after DTR drops from active to inactive with AT&D2 command
DIZZY1-486	Set AT&D1, DTR toggle OFF/ON can't make +KUDPSND exit data mode.
DIZZY1-695	Module is crashed when activating the 3rd PDP context if existing 2 activated PDP contexts
DIZZY1-755	If user wait few minutes before accepting the install, he will receive +WDSI: 5 notification, then the install will start correctly, so there is no effect to the FOTA.
DIZZY1-774	Module freeze in data mode due to data never read by +KTCPRCV; There is congestion on socket and data flow control is activated on serial link. Consequently, EOF pattern can't be detected.
DIZZY1-862	+WDSI: 7 is returned after download is successful +WDSI: 10
DIZZY1-948	FOTA upgrade job is failed when network is lost immediately after the download start (+WDSI: 18)
DIZZY1-1000	[AT&T] Module is crashed when trying to remove credential then connect to BS and DM server.
DIZZY1-1012	[VZW] After FOTA update Module is crashed after registering to network successfully
DIZZY1-1106	[RRC] +KALTCFG AT Command persistency

12.13.2.3. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below: AT+KGPIOCFG=8,0,2 (Set GPIO8 output high) OK AT+KGPIO=8,1 OK	IO Configuration
[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below: AT+KGPIOCFG=6,0,2 (Set GPIO6 output high) OK AT+KGPIO=6,1 OK	IO Configuration
NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
DIZZY1-1132	After receiving data or SMS, module fails to enter Lite hibernate again.
DIZZY1-1131	The module does not enter Sleep mode again

ID	Description
DIZZY1-1130	Unable to perform PPP Twice
DIZZY1-1128	DUT cannot enter Lite hibernate mode after T3324
DIZZY1-1123	Wrong URC +WDSI when executing AT+WDSS=1,0 and module has a reset
DIZZY1-1122	Wrong URC +WDSI when installing FW with FOTA
DIZZY1-1111	Will not run into out of heap situations
DIZZY1-1110	NV backup is not generated automatically after it is corrupted
DIZZY1-1098	Baud rate is changed to default after reset
DIZZY1-1096	Module cannot receive SMS after waking up from Hibernate mode with SM preferred message storage
DIZZY1-1089	GPIO6 does not work as expected during TAU
DIZZY1-1085	Country Band scanning may be applied instead of full scan, meaning that some enabled bands may not be scanned if they do not belong to the bands associated with the current country the device is located in.
DIZZY1-1083	HL7800-NB1 Receive data incomplete when setup with TCP socket
DIZZY1-1053	Cannot initiate dial-up using DLCs port on Linux OS
DIZZY1-1051	Wrong responses when testing +COPS command, and <mode> is persistent after set CFUN with config AT+COPS=1,2,"00101".
DIZZY1-1044	When Power On feature is enable and SW203 on SLIM DEVKIT is set to off, module still boots successfully after hard reset.
DIZZY1-1039	Module is crashed during CFUN, COPS stress test
DIZZY1-1035	MDC disconnection event is not sent on radio switch off
DIZZY1-1024	Periodic resets seen in LHT
DIZZY1-1021	Can't use AVMS feature with Deutsche Telekom network
DIZZY1-1019	Bad network throughput, delay time is too long for TCP/UDP/AVMS connection which might cause network time-out issue.
DIZZY1-1018	Bad connection performance with dial-up on Cat-NB1
DIZZY1-1007	UDP session after waking up from PSM-Hibernate state - Live VzW
DIZZY1-997	[NB1] One reboot seen after download from PP2 customized firmware
DIZZY1-982	Cannot start TCP/UDP connection with PDP context 1 if PDP 2 is configured for AVMS connection
DIZZY1-960	When module reboot, customer PDP context configure isn't persistent, module will change PDP context to default.
DIZZY1-931	[GPIO2] Randomly pull High
DIZZY1-919	Wrong format of <Requested_eDRX_value>, <NV-provided_eDRX_value> and <Paging_time_window> in the response of +CEDRXS write command
DIZZY1-917	Module can't register to network after +COPS=2 then +COPS=0. If reset module, it can register to network.
DIZZY1-905	IPv6 DNS issue
DIZZY1-895	Wrong response when testing command +CEDRXRDP
DIZZY1-892	[NB1] Module takes a long time to response during FOTA testing

ID	Description
DIZZY1-873	Module enters SLEEP mode when sending TCP data by KTCPSTART and Drop DTR with +KSLEEP=0,0
DIZZY1-868	NULL is returned after AT+CFUN=1,1
DIZZY1-857	Sometimes VGPIO blinking and almost Low instead of HIGH when the module in Tptw seconds in Hibernate.
DIZZY1-798	PPP pings stop after some time but PPP connection still up
DIZZY1-792	Not able to enter in hibernate when in PSM mode in NBIOT
DIZZY1-782	In some conditions of timers: T3412 and T3324 in PSM, the device don't go back to hibernate. Impacting current consumption
DIZZY1-759	Module does not display +CEREG URC during sleeping with PSM configuration
DIZZY1-738	AT ports is frozen after save messages PDU mode to memory
DIZZY1-721	Module performs boot continuously after some minutes configuring +KSLEEP=1,0 (or +KSLEEP=0,2) with eDRX (or CPSMS) activated
DIZZY1-714	Network registration is not stable on live network.
DIZZY1-668	Module cannot go to LITE HIBERNATE mode with SIM PIN code activated when configured in HIBERNATE mode
DIZZY1-645	CTS is HIGH most of the time when testing with +KSLEEP = x,2
DIZZY1-544	[NB1] Failed to download FOTA package due to TLS handshake errors - No WDSI: 9
DIZZY1-526	Unable to attach when PAP/CHAP is setup
DIZZY1-521	+KUDP_DATA is not displayed when send and receive UDP data in many times
DIZZY1-494	+KCELL=0 AT command gives CMEE ERROR: 60
DIZZY1-324	When using AT+CMGR for SMS response longer than 127 characters, the response is truncated.
DIZZY1-316	[CMUX] Many same URCs are received on a DLC
DIZZY1-315	[CMUX] Module is stuck after executed +KTCPSTART to send data on DLC
DIZZY1-286	[KSRAT] Radio access technology +KSRAT is not persistent after upgrade FW
DIZZY1-208	Unexpected URCs are produced over each AT channel
DIZZY1-199	[CMUX] Wrong response when send SABM to set up connection to DLC1, DLC2, DLC3, DLC4
DIZZY1-194	AT port is frozen after setting +CEMODE
DIZZY1-1160	+CEDRXP have wrong format parameters
DIZZY1-1157	[Telstra] IPv6 DNS issue
DIZZY1-1138	VGPIO is LOW when module enters LITE HIBERNATE
DIZZY1-1065	Exception observed while initiating PSM with ATT
DIZZY1-1031	eDRX/Hibernate High current consumption
DIZZY1-1030	[KTCPSTART] Send/Receive 10k data incompletely through TCP socket
DIZZY1-1029	[TCP] Module cannot go back into hibernate mode
DIZZY1-987	NV Backup issues raised by dev team
DIZZY1-899	[Telstra][FOTA] Module connects to the BS server after waiting the user agreement timer for installing expired (30 minutes)

ID	Description
DIZZY1-648	Cannot re-establish dial-up connection after disconnecting
DIZZY1-543	[KCNXUP] Cannot bring connection up without activated PDP

12.14. BHL78XX.2.5.2.0

12.14.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.2.0-RK0201010035
Identification	ati HL7800 ati3 BHL7800.2.5.2.0.20190315 at%ver NP Package: RK_02_01_01_00_35 Apps: RKAPP_02_01_01_00_33__4b1c0a31b3072a8b13b39754a90cd2b69397bd17 Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_207419 MAC Package Version: ALT1250_02_01_01_00_33_FW MAC Build Time: Mar_11_2019_18_23_17 PHY Revision: 12.50.207152 PHY Build Time: Mar_05_2019_16_53_40 PHY Build Info: releas_0 PMP Revision: 207419 PMP Version: 33_FW PMP build time: Mar_11_2019_18_23_17 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Mar 15 2019 14:21:47 ati9 HL7800.2.5.2 BHL78xx.2.5.2.0.RK_02_01_01_00_35.20190315 2019/03/15 14:22:49 IMEI-SV: 3546160900092202 Legato RTOS: 18.09.2.ALT1250.rc2 2019/03/11 11:57:49 atSwi: 11.02 UBOOT: 01.03

	Apps: RKAPP_02_01_01_00_33__4b1c0a31b3072a8b13b39754a90cd2b69397bd17 MAC: ALT1250_02_01_01_00_33_FW PHY: 12.50.207152 PMP: 207419 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0
Date of generation	2019/03/15 14:22:49
Binary Size	5488640 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519036 u-boot.bin 3761796 ue_lte.fw 4096 partmap.bin 2719708 ue_lte.fw2
MD5	db32e3a488a61c91229be2b4683034581cce8eb2 AppFW_flash.bin 3197edfcc517c5fdbf7ecdfe067f8552c6c1421d sysHeader_backup.bin.alt1250 9effde86c3f101bfd9c83471b08442f265219999 sysHeader.bin.alt1250 4ba9f799fc634f8011d9d724b0782c77ca56e6b6 u-boot.bin 483a7067bd0cfdc25fa8835481b9e310e42b29fb ue_lte.fw 90b7c4253a5acfb1c17a72ff510dc0083e826575 partmap.bin 3b78cc82147f75dee0da9e91263b2ae67e6d256f ue_lte.fw2
IMEI SV	02
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12.14.2. Software Changes Description

12.14.2.1. New Features/Enhancements

Feature/ID	Description

12.14.2.2. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release

ID	Description
DIZZY1-1030	[KTCPSTART] Send/Receive 10k data incompletely through TCP socket
DIZZY1-1005	TAU failure after eNB FW upgraded
DIZZY1-1004	RACH fail after changing eNB parameter
DIZZY1-989	No support GPIO 3,15 when executing +KGPIO and +KGPIOCFG Command
DIZZY1-972	+WDSG incorrect reporting of +WDSG: 1,2
DIZZY1-959	Wrong response when executing some valid +KNWSCANCFG commands
DIZZY1-923	Can't set operator to China Telecom by +KCARRIERCFG=14
DIZZY1-907	After about >30 times send data to server by +KTCPSND command, module is return +KTCP_NOTIF: 1,8, AT port Frozen
DIZZY1-878	Receive data incomplete when setup with TCP socket
DIZZY1-871	Device is frozen when make a connection to AVMS server with "Status report = ON"
DIZZY1-856	AT Port is frozen after module re-connects to AVMS server automatically when the polling mode timer is expired
DIZZY1-828	Module cannot go back into hibernate mode when TCP session ID is 7
DIZZY1-739	Module does not wake up by data reception after entering sleep mode
DIZZY1-725	High current consumption at high temperature(4mA)
DIZZY1-715	[MECS][KSLEEP] Module does not response when testing with KSLEEP = 1,x
DIZZY1-697	CTS blinks all the time, spaces and some strange character are added to terminal when module is in sleep mode
DIZZY1-685	+WDSI: 10 is returned incorrectly when releasing the connection just after the beginning of download process (after +WDSI: 18 returned)
DIZZY1-623	+CGAUTH support up to 64 characters for user & password
DIZZY1-542	FOTA is Failed (+WDSI: 15) when rebooting module after +WDSI: 18 and +WDSI: 18,100
DIZZY1-471	Module should not send IPCP protocol when "IPv6" is set
DIZZY1-425	[NB1] Device unstable ping during callbox throughput test
DIZZY1-273	Command AT+CMEE=2 should not be supported and should not be in list of supported values (AT+CMEE=?)
DIZZY1-256	After start 6 TCP sessions, 7th sessions still connected
DIZZY1-221	The 7th,8th,9th session can be started and AT port is frozen after closing 7th UDP sessions
DIZZY1-192	First parameter of +CMT should be string type.

12.14.2.3.   Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality

[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=8,0,2 (Set GPIO8 output high)`
	`OK`
	`AT+KGPIO=8,1`
	`OK`
		IO Configuration

[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=6,0,2 (Set GPIO6 output high)`
	`OK`
	`AT+KGPIO=6,1`
	
	`OK`
		IO Configuration

NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
DIZZY1-1132	After receiving data or SMS, module fails to enter Lite hibernate again.
DIZZY1-1131	The module does not enter Sleep mode again

ID	Description
DIZZY1-1130	Unable to perform PPP Twice
DIZZY1-1128	DUT cannot enter Lite hibernate mode after T3324
DIZZY1-1123	Wrong URC +WDSI when executing AT+WDSS=1,0 and module has a reset
DIZZY1-1122	Wrong URC +WDSI when installing FW with FOTA
DIZZY1-1111	Will not run into out of heap situations
DIZZY1-1110	NV backup is not generated automatically after it is corrupted
DIZZY1-1098	Baudrate is changed to default after reset
DIZZY1-1096	Module cannot receive SMS after wake up from Hibernate mode with SM preferred message storage
DIZZY1-1094	NV data is unable to be restored after corruption
DIZZY1-1092	Cannot restore NV data
DIZZY1-1091	Cannot generate NV backup
DIZZY1-1089	GPIO6 does not work as expected during TAU
DIZZY1-1085	Country Band scanning may be applied instead of full scan, meaning that some enabled bands may not be scanned if they do not belong to the bands associated with the current country the device is located in.
DIZZY1-1083	HL7800-NB1 Receive data incomplete when setup with TCP socket
DIZZY1-1053	Cannot initiate dial-up using DLCs port on Linux OS
DIZZY1-1051	Wrong responses when testing +COPS command, and <mode> is persistent after set CFUN with config AT+COPS=1,2,"00101".
DIZZY1-1044	When Power On feature is enable and SW203 on SLIM DEVKIT is set to off, module still boots successfully after hard reset.
DIZZY1-1039	Module is crashed during CFUN, COPS stress test
DIZZY1-1035	MDC disconnection event is not sent on radio switch off
DIZZY1-1024	Periodic resets seen in LHT
DIZZY1-1021	Can't use AVMS feature with Deutsche Telekom network
DIZZY1-1019	Bad network throughput, delay time is too long for TCP/UDP/AVMS connection which might cause network time-out issue.
DIZZY1-1018	Bad connection performance with dial-up on Cat-NB1
DIZZY1-1007	UDP session after waking up from PSM-Hibernate state - Live VzW
DIZZY1-997	[NB1] One reboot seen after download from PP2 customized firmware
DIZZY1-982	Cannot start TCP/UDP connection with PDP context 1 if PDP 2 is configured for AVMS connection
DIZZY1-960	When module reboot, customer PDP context configure isn't persistent, module will change PDP context to default.
DIZZY1-931	[GPIO2] Randomly pull High
DIZZY1-919	Wrong format of <Requested_eDRX_value>, <NV-provided_eDRX_value> and <Paging_time_window> in the response of +CEDRXS write command
DIZZY1-917	Module can't register to network after +COPS=2 then +COPS=0. If reset module, it can register to network.
DIZZY1-905	IPv6 DNS issue

ID	Description
DIZZY1-895	Wrong response when testing command +CEDRXRDP
DIZZY1-892	[NB1] Module takes a long time to response during FOTA testing
DIZZY1-873	Module enters SLEEP mode when sending TCP data by KTCPSTART and Drop DTR with +KSLEEP=0,0
DIZZY1-868	NULL is returned after AT+CFUN=1,1
DIZZY1-857	Sometimes VGPIO blinking and almost Low instead of HIGH when the module in Tptw seconds in Hibernate.
DIZZY1-798	PPP pings stop after some time but PPP connection still up
DIZZY1-792	Not able to enter in hibernate when in PSM mode in NBIOT
DIZZY1-782	In some conditions of timers: T3412 and T3324 in PSM, the device don't go back to hibernate. Impacting current consumption
DIZZY1-759	Module does not display +CEREG URC during sleeping with PSM configuration
DIZZY1-738	AT ports is frozen after save messages PDU mode to memory
DIZZY1-721	Module performs boot continuously after some minutes configuring +KSLEEP=1,0 (or +KSLEEP=0,2) with eDRX (or CPSMS) activated
DIZZY1-714	Network registration is not stable on live network.
DIZZY1-695	Module is crashed when activating the 3rd PDP context if existing 2 activated PDP contexts – Live VzW
DIZZY1-668	Module cannot go to LITE HIBERNATE mode with SIM PIN code activated when configured in HIBERNATE mode
DIZZY1-645	CTS is HIGH most of the time when testing with +KSLEEP = x,2
DIZZY1-544	[NB1] Failed to download FOTA package due to TLS handshake errors - No WDSI: 9
DIZZY1-526	Unable to attach when PAP/CHAP is setup
DIZZY1-521	+KUDP_DATA is not displayed when send and receive UDP data in many times
DIZZY1-494	+KCELL=0 AT command gives CMEE ERROR: 60
DIZZY1-324	When using AT+CMGR for SMS response longer than 127 characters, the response is truncated.
DIZZY1-316	[CMUX] Many same URCs are received on a DLC
DIZZY1-315	[CMUX] Module is stuck after executed +KTCPSTART to send data on DLC
DIZZY1-286	[KSRAT] Radio access technology +KSRAT is not persistent after upgrade FW
DIZZY1-208	Unexpected URCs are produced over each AT channel
DIZZY1-199	[CMUX] Wrong response when send SABM to set up connection to DLC1, DLC2, DLC3, DLC4
DIZZY1-194	AT port is frozen after setting +CEMODE

12.15. AHL78XX.2.5.1.0

12.15.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	BHL78XX.2.5.1.0-RK0201010032
Identification	ati HL7800 ati3 BHL7800.2.5.1.0.20190306 at%ver NP Package: RK_02_01_01_00_32 Apps: RKAPP_02_01_01_00_29__d8af2ccd5d4fd4e37e568216faca9547c88f7cb5 Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_206700 MAC Package Version: ALT1250_02_01_01_00_30_FW MAC Build Time: Feb_25_2019_17_38_35 PHY Revision: 12.50.206678 PHY Build Time: Feb_25_2019_15_53_10 PHY Build Info: releas_0 PMP Revision: 206700 PMP Version: 30_FW PMP build time: Feb_25_2019_17_38_35 DSP Revision: 46229 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Mar 6 2019 14:49:40 ati9 HL7800.2.5.1 BHL78xx.2.5.1.0.RK_02_01_01_00_32.20190306 2019/03/06 14:50:37 IMEI-SV: 3546160900092201 Legato RTOS: 18.09.2.ALT1250.rc1 2019/02/25 13:03:46 atSwi: 11.01 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_29__d8af2ccd5d4fd4e37e568216faca9547c88f7cb5 MAC: ALT1250_02_01_01_00_30_FW PHY: 12.50.206678 PMP: 206700 SBUB: 0 SBFW: 0 RPuK:

	FPuK:
	RBUB: 0
	RBFW: 0
Date of generation	2019/03/06 14:50:37
Binary Size	5410816 AppFW_flash.bin
	420 sysHeader_backup.bin.alt1250
	3492 sysHeader.bin.alt1250
	519132 u-boot.bin
	3760800 ue_lte.fw
	4096 partmap.bin
	2718532 ue_lte.fw2
MD5	d88671608db57752cf9cba493820426955054f9a AppFW_flash.bin
	a73be2581000c700ec44e57816f53f4b719228de
	sysHeader_backup.bin.alt1250
	e174615bf8e40610e46f0a751bdc6fac051b6694 sysHeader.bin.alt1250
	57ae92d80a085e189bcb1f2323f0db8814f2c04e u-boot.bin
	dc8d4fe1c3a809a9ebc9d03f2b05a149851c6ee1 ue_lte.fw
	eaf25b966c37e9acf447bcba3c8b357602716976 partmap.bin
	6d7f0977879bc1311358d9568cfc4a03b63bd567 ue_lte.fw2
IMEI SV	01
TS 25 PLMN List	21st January 2019

12.15.2.   Software Changes Description

12.15.2.1.   New Features/Enhancements

Feature/ID	Description
04.69	FS Corruption (NVBackup)
08.01	Power on sequence compatible HL / CF3
04.115	Enable pin for external DCDC
04.127	Need an AT command to query MCL (+KCELLMEAS)
04.128	New pin output for monitoring HL7800 status

12.15.2.2.   Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release

ID	Description
DIZZY1-897	Failed to enter AT command to the module when it is wake-up by SMS in Hibernate mode with EDRX is activated.
DIZZY1-896	The device only goes to SLEEP mode after restart the device in Hibernate with CPSMS is activated.

ID	Description
DIZZY1-891	Wrong KCNX_IND Notification (connection Status Notification) when bring up TCP connection with invalid APN
DIZZY1-863	Module is crashed after configuring PDP context identifier by WDSS command on VZW network
DIZZY1-853	UART not responsive after entering in hibernate mode in PSM
DIZZY1-673	Upgrade failure between FW1.7.x.x to FW2.4.x.x
DIZZY1-672	AT port not connected blocks CLI port at startup
DIZZY1-628	The device closes the connection to the bootstrap server at the 1st attempts
DIZZY1-619	Module is auto-reset during LITE/HIBERNATE mode in eDRX. Then device is unable to wake up by WAKE UP PIN
DIZZY1-604	NB1 is not available with AHL2.1.0.0 with at least all bands configured. Different behavior for with AHL2.2.0.0 with sporadic resets but not linked to the initial issue
DIZZY1-533	URC +CRTDCP is not sent over UART
DIZZY1-488	After ATO, NO CARRIER is not returned after connection terminated on NB1

12.15.2.3.   Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
[04.115] Enable pin for external DCDC	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below: AT+KGPIOCFG=8,0,2 (Set GPIO8 output high) OK AT+KGPIO=8,1 OK	IO Configuration

Features	Description (What/When)	Impacted Functionality/Sub-Functionality

[04.128] New pin output for monitoring HL7800 status	Before using **+KWIOCFG** to activate this feature, you must send AT Commands below:
	
	`AT+KGPIOCFG=6,0,2 (Set GPIO6 output high)`
	`OK`
	`AT+KGPIO=6,1`
	
	`OK`
		IO Configuration

NVBACKUP Feature	Feature has been delivered but disabled. It must deeply validated/verified by Sierra R&D Team so, don't request a manual backup +NVBU=0[1]	NV Corruption
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence
Factory default setting	Default Cat-M1 RF bands: 2, 3, 4, 8, 12, 13, 18, 20, 26, 28	Cat-M1 Bands

ID	Description
DIZZY1-1046	Exception observed during PSM/Hibernate tests
DIZZY1-1040	Device cannot attach to the network
DIZZY1-1031	High current consumption
DIZZY1-1029	[TCP] Module cannot go back into hibernate mode
DIZZY1-1024	[NBIOT] Periodic resets seen in LHT
DIZZY1-1021	[WDSS][NB1]Couldn't start AVMS connection with Deutsche Telekom operator
DIZZY1-1019	[GPRS][THROUGHPUT][NB1]Network delay is too long with Deutsche Telekom operator.
DIZZY1-1018	[GPRS][THROUGHPUT][NB1]After dialing-up, some packets lost when pinging
DIZZY1-1017	[PROTOCOM][KTCPSND] +KTCP_NOTIF: 1,8 is returned although module have sent fully data to server

ID	Description
DIZZY1-1012	[VZW][AVMS] After FOTA update Module is crashed after registering to network successfully
DIZZY1-1000	[AVMS][AT&T] Module is crashed when trying to remove credential then connect to BS and DM server.
DIZZY1-997	[NB1] One reboot seen after download from PP2 customized firmware (FW1.7.10.0)
DIZZY1-982	[GPRS][CGDCONT][AVMS][WDSS] Can not start TCP/UDP connection with PDP context 1 if PDP 2 is configured for AVMS connection
DIZZY1-960	[GPRS][CGDCONT] +CGDCONT configuration isn't persistent after reboot
DIZZY1-959	[NS][KNWSCANCFG] Wrong response when executing some valid +KNWSCANCFG commands
DIZZY1-936	Device unable to register when AT+KCARRIERCFG=5 (AT&T) is set
DIZZY1-931	[GPIO2] Randomly pull High
DIZZY1-924	Module auto attach to LTE after executing +CGATT=0 detach command
DIZZY1-919	[NS][CEDRXS] CEDRXP have wrong format parameters
DIZZY1-917	[NS][COPS] Module can't register to network automatically with AT+COPS=0 command with NB1
DIZZY1-915	[VZW][AVMS][FOTA] Couldn't upgrade FW from N-1 to N by FOTA
DIZZY1-905	[TELSTRA] IPv6 DNS issue
DIZZY1-895	[NS][CEDRXRDP] Wrong response when testing command +CEDRXRDP
DIZZY1-893	Device unable to boot up
DIZZY1-892	[AVMS][NB1]Module takes a long time to response during FOTA testing
DIZZY1-873	[KSLEEP][KTCPSTART]Module enters SLEEP mode when sending TCP data by KTCPSTART and Drop DTR with +KSLEEP=0,0
DIZZY1-857	[MECS][EDRXS] Sometimes VGPIO blinking and almost Low instead of HIGH when the module in Tptw seconds in Hibernate.
DIZZY1-798	HL7800 PPP pings stop after some time but PPP connection still up
DIZZY1-792	Device not able to enter in hibernate when in PSM mode in NB1
DIZZY1-782	In some conditions of timers: T3412 and T3324 in PSM, the device don't go back to hibernate. Impacting current consumption
DIZZY1-774	Module freeze in data mode due to data never read by +KTCPRCV; There is congestion on socket and data flow control is activated on serial link. Consequently, EOF pattern can't be detected.
DIZZY1-759	[MECS][KSLEEP][CPSMS] Module does not display +CEREG URC during sleeping with PSM configuration
DIZZY1-738	[SMS][CMGW] AT ports is frozen after save messages PDU mode to memory
DIZZY1-721	[KSLEEP][eDRX] Module performs boot continuously after some minutes configuring AT+KSLEEP=1,0 (or AT+KSLEEP=0,2) with eDRX (or CPSMS) activated

ID	Description
DIZZY1-714	[] Network registration is not stable on live network.
DIZZY1-695	[GPRS][VZW] Module is crashed when activating the 3rd PDP context if existing 2 activated PDP contexts
DIZZY1-668	[NS][CPSMS][KSLEEP] Module cannot go to LITE HIBERNATE mode with SIM PIN code activated when configured in HIBERNATE mode
DIZZY1-648	[PPP] Can not re-establish dial-up connection after disconnecting
DIZZY1-544	[NB1] Failed to download FOTA package due to TLS handshake errors (Amarisoft) - No WDSI: 9
DIZZY1-543	[PROTOCOL][KCNXUP]Can not bring connection up without activated PDP
DIZZY1-526	[WPPP] PAP/CHAP authentication issue - Credentials not taken into account in sequence CFUN4/1
DIZZY1-501	[NB1][MECS][EDRXS][CPSMS] VGPIO is always HIGH in Hibernate
DIZZY1-479	Device does not got to SLEEP/HIBERNATE mode if FW_LOG Uart not set to C
DIZZY1-316	[CMUX][PROTOCOL] Many same URCs are received on a DLC
DIZZY1-315	[CMUX][KTCPSTART] Module is stuck after executed KTCPSTART to send data on DLC
DIZZY1-208	[CMUX][PROTOCOL] URC is received on all opened DLC when AT command is executed in a DLC
DIZZY1-194	[CEMODE] AT port is frozen after setting CEMODE

12.16. AHL78XX.2.4.1.0

12.16.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	AHL78XX.2.4.1.0-RK0201010025
Identification	ati HL7800 ati3 AHL7800.2.4.1.0.20190218 at%ver NP Package: RK_02_01_01_00_25 Apps: RKAPP_02_01_01_00_23__065d9ede51792cd5b2b26b61999e9f0c86ee291d Modem Apps: ALT1250_02_01_01_00_20_MA Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_204219

	MAC Package Version: ALT1250_02_01_01_00_24_FW MAC Build Time: Jan_30_2019_12_25_56 PHY Revision: 12.50.204170 PHY Build Time: Jan_29_2019_17_25_21 PHY Build Info: releas_0 PMP Revision: 204219 PMP Version: 24_FW PMP build time: Jan_30_2019_12_25_56 DSP Revision: 44559 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Feb 18 2019 12:40:46 ati9 HL7800.2.4.1 AHL78xx.2.4.1.0.RK_02_01_01_00_25.20190218 2019/02/18 12:42:13 IMEI-SV: 3546160900092201 Legato RTOS: 18.09.1.ALT1250.rc4 2019/02/14 13:12:35 atSwi: 10.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_23__065d9ede51792cd5b2b26b61999e9f0c86ee291d Modem Apps: ALT1250_02_01_01_00_20_MA MAC: ALT1250_02_01_01_00_24_FW PHY: 12.50.204170 PMP: 204219 SBUB: 0 SBFW: 0 RPuK: FPuK: RBUB: 0 RBFW: 0
Date of generation	2019/02/18 12:42:13
Binary Size	4952064 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519328 u-boot.bin 3762952 ue_lte.fw 4096 partmap.bin 2705784 ue_lte.fw2
MD5	70e1813efcc719c44a58277c76494c0c8f1e5480 AppFW_flash.bin 4996b458cfbb05cec9ad7823b315ef015255f16a sysHeader_backup.bin.alt1250 c6952ccf3118c3b0d1afba18ed17bbe0bcdcac63 sysHeader.bin.alt1250 109c115921ae40c6d2590d68a72269eee2d700f8 u-boot.bin 93b27cb8007f9403d4d0d478009bbef6527c7547 ue_lte.fw b13a8faa594e4f348ee8657abb8fcb8529984834 partmap.bin 2a3dafec2d52b9df1305d8b4be36665f05874730 ue_lte.fw2

12.16.2. Software Changes Description

12.16.2.1. New Features/Enhancements

Feature/ID	Description
04.126	Support multiple APN
04.32	XMODEM -WDSD/WDSR

12.16.2.2. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release

ID	Description
DIZZY1-675	[PROTOCOM][KTCPSTART] AT port is frozen after send KTCPSTART with IPV6
DIZZY1-280	[GPRS][+CGPADDR] Wrong responses when testing +CGPADDR command

12.16.2.3. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
Upgrade from FW1.7.x.0 to FW2.4.x.0 crash the device.	The workaround is to upgrade the device from FW1.7.x.0 to FW2.3.1.0 and FW2.3.1.0 to FW2.4.x.0	Upgrade
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence

12.17. AHL78XX.2.4.0.0

12.17.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	AHL78XX.2.4.0.0-RK0201010025
Identification	ati HL7800 ati3 AHL7800.2.4.0.0.20190207 at%ver NP Package: RK_02_01_01_00_25 Apps: RKAPP_02_01_01_00_23__065d9ede51792cd5b2b26b61999e9f0c86ee291d Modem Apps: ALT1250_02_01_01_00_20_MA Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_204219 MAC Package Version: ALT1250_02_01_01_00_24_FW MAC Build Time: Jan_30_2019_12_25_56 PHY Revision: 12.50.204170 PHY Build Time: Jan_29_2019_17_25_21 PHY Build Info: releas_0 PMP Revision: 204219 PMP Version: 24_FW PMP build time: Jan_30_2019_12_25_56 DSP Revision: 44559 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Feb 7 2019 17:00:16 ati9 HL7800.2.4.0 AHL78xx.2.4.0.0.RK_02_01_01_00_25.20190207 2019/02/07 17:01:05 IMEI-SV: 3546160900092201 Legato RTOS: 18.09.0.ALT1250 2019/01/21 11:45:30 (*) atSwi: 09.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_23__065d9ede51792cd5b2b26b61999e9f0c86ee291d Modem Apps: ALT1250_02_01_01_00_20_MA MAC: ALT1250_02_01_01_00_24_FW PHY: 12.50.204170 PMP: 204219

	(*)Please note that it should have been 18.09.1.ALT1250.rc1
Date of generation	2019/02/07 17:01:05
Binary Size	4382720 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 519088 u-boot.bin 3762952 ue_lte.fw 4096 partmap.bin 2705784 ue_lte.fw2
MD5	db73c0ff5746ed415f738e01c5d6672ba9dc0e0d AppFW_flash.bin 2308057a59cfd615e2a1309da09cde41ba0d20b8 sysHeader_backup.bin.alt1250 1e1552a0c3c1837d1332e76037d7d85968d6c02a sysHeader.bin.alt1250 04955a29a70d97df30d913d60c7570d2e88fab4f u-boot.bin 93b27cb8007f9403d4d0d478009bbef6527c7547 ue_lte.fw 838f35c540440a5670ea4c6fe14e069bb87512ab partmap.bin 2a3dafec2d52b9df1305d8b4be36665f05874730 ue_lte.fw2

12.17.2. Software Changes Description

12.17.2.1. New Features/Enhancements

Feature/ID	Description
04.57	Out of coverage behavior (+KNWSCANCFG)

12.17.2.2. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
DIZZY1-731	[PROTOCOM][KTCPSTART] Wrong response after starting TCP connection with AT+KTCPSTART command
DIZZY1-705	Default PSM and eDRX configuration have been modified
DIZZY1-704	[+KCARRIRCFG] The +CME ERROR: 3 is returned with read command +KCARRIERCFG?
DIZZY1-682	[PROTOCOL][KTCPCNX] Wrong response when start TCP connection with invalid port
DIZZY1-679	[PROTOCOL][KTCPCLOSE] AT ports of DUT and AUX are frozen after sending command AT+KTCPCLOSE=1,1 on DUT
DIZZY1-674	[UDP] On Alternate UDP request, channel is opened by FW

ID	Description
DIZZY1-647	[PROTOCOM][KTCPCFG]"KTCP_NOTIF: 1,0" does not displays after entering filght mode
DIZZY1-618	[V25ter][AT&F] Double OK is returned with AT&F command
DIZZY1-571	[PROTOCOL][KTCPSTART] Cannot get IP address when starting a TCP connection +KTCPSTART with PS detached
DIZZY1-310	[WMTXPOWER] ERROR returns for AT+WMTXPOWER=0 and wrong response for read command
DIZZY1-265	[WMRXPOWER] ERROR returns for AT+WMRXPOWER=<ENABLE> and wrong response for read command
DIZZY1-224	[SMS][+CMGS] AT port and CLI port are hung when execute command AT+CMSS=1
DIZZY1-717	[CR]Module cannot read the left data in UDP socket by +KUDPRCV
DIZZY1-694	[PROTOCOL][KCERTSTORE] Extra \r\n in data when read command AT+KCERTSTORE ?
DIZZY1-283	[PROTOCOM][KPATTERN][KUDP_DATA] Wrong +KUDP_DATA returned when sending data with character "-" at the end.
DIZZY1-469	Out of coverage behavior

12.17.2.3. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
WDSD	Local Upgrade by delta package (XMODEM) is not functional	FW Upgrade
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence

12.18. AHL78XX.2.3.1.0

12.18.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	AHL78XX.2.3.1.0-RK0201010018
Identification	ati HL7800 ati3 AHL7800.2.3.1.0.20190128 at%ver NP Package: RK_02_01_01_00_18 Apps: RKAPP_02_01_01_00_17__52a2801313924544b18fb0cd20d894d22b8a3140 Modem Apps: ALT1250_02_01_01_00_17_MA Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_202576 MAC Package Version: ALT1250_02_01_01_00_17_FW MAC Build Time: Jan_08_2019_12_31_59 PHY Revision: 12.50.202571 PHY Build Time: Jan_08_2019_10_31_35 PHY Build Info: releas_0 PMP Revision: 202576 PMP Version: 17_FW PMP build time: Jan_08_2019_12_31_59 DSP Revision: 41935 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Jan 28 2019 15:16:11 ati9 HL7800.2.3.1 AHL78xx.2.3.1.0.RK_02_01_01_00_18.20190128 2019/01/28 15:17:18 IMEI-SV: 3546160900092201 Legato RTOS: 18.09.0.ALT1250 2019/01/21 11:45:30 atSwi: 08.00 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_17__52a2801313924544b18fb0cd20d894d22b8a3140 Modem Apps: ALT1250_02_01_01_00_17_MA MAC: ALT1250_02_01_01_00_17_FW PHY: 12.50.202571 PMP: 202576

Date of generation	2019/01/28 15:17:18
Binary Size	4764528 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 523132 u-boot.bin 3767176 ue_lte.fw 4096 partmap.bin 2692064 ue_lte.fw2
MD5	9cab575892d1e6027b62d5120943100c00478055 AppFW_flash.bin 0b39c63cb59e73f809e098c89367e56bb6fe50ab sysHeader_backup.bin.alt1250 6e085b305459bd80548119fa1bd97c8793c6cf0a sysHeader.bin.alt1250 eb9a8509e832359f9d3f5c43bae98d791ab30257 u-boot.bin f2152f84ebb2a430ec0adc36d816a525140fb074 ue_lte.fw 7d1778035047e9b805405764a4ea1efcd7b1d5fc partmap.bin fa1deb5b0ea86499a9d3955bf15f4b5dadb48f16 ue_lte.fw2

12.18.2. Software Changes Description

12.18.2.1. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
DIZZY1-754	[PROTOCOL][KCNXDOWN] The +KCNX_IND: x,5,30 URC is delayed on AT port after bringing the PDP connection up/down
DIZZY1-744	[FOTA] Freeze after moving module into out-of-service during FOTA
DIZZY1-718	[CFUN] Module is crashed when send command AT+CFUN=4
DIZZY1-713	[Amarisoft network] Module is crashed when send AT Command CFUN=1,1
DIZZY1-709	[PROTOCOM][KTCPCLOSE][KUDPCLOSE]After closing TCP/UDP connection successfully. and then module is crashed when executing the command AT+CFUN=1,1.
DIZZY1-708	[CFUN][TELSTRA] Module is crashed when send command AT+CFUN=1,1
DIZZY1-707	[AT&T] Module is crashed when send command AT+CFUN=1,1
DIZZY1-706	Module is crashed when send AT Command CFUN=1,1
DIZZY1-631	[GPRS][CGATT] AT+CGATT=0 returns wrong response on NB1
DIZZY1-616	[AVMS][FOTA] Module is crashed when de-registering to network (AT+CFUN=0) during download process
DIZZY1-578	[CP] Sending data over CP in CAT-M1 is possible even if CP CIoT Opt. is not enabled

ID	Description
DIZZY1-551	[PROTOCOL][KTCPCNX]Module reboots when starting TCP connection with invalid APN
DIZZY1-549	[PROTOCOL][KCNXUP]Module reboots when bring connection up without activated PDP
DIZZY1-541	[NB1][FOTA] MAC assert after TLS handshake error during FOTA package download
DIZZY1-530	Using KRIC/RI pin for SMS wakeup
DIZZY1-520	[AVMS][FOTA] Module does not establish a new connection to server when rebooting after +WDSI: 10 returned
DIZZY1-505	[PROTOCOL]TCP session is not stable
DIZZY1-485	[CC][ATH] Command ATH cannot disconnect the data call on NB1
DIZZY1-466	[PROTOCOL][KCNXTIMER]URC is returned too slowly when starting TCP connection with invalid APN
DIZZY1-386	[KCELL] Module restart after send command AT+KCELL=0
DIZZY1-336	[NB1] LTE interface lost after PPP dial-up and down
DIZZY1-317	[AVMS][FOTA] After network lost during FOTA session, module can't re-connect and continue FOTA updrage, +WDSI: 11,2 is received.
DIZZY1-308	[CEDRXS] Command AT+CEDRXS? in NB1 is returned different from CAT-M1
DIZZY1-232	[NS][CPSMS] The responses of AT+CPSMS have incorrect format and value
DIZZY1-206	[VZW][V25TER][+CGCMOD] ERROR code is returned when modifying PDP context by +CGCMOD command
DIZZY1-200	[PROTOCOM][KTCP_DATA] "+KTCP_DATA" is not displayed when send and receive TCP data in many times

12.18.2.2. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
WDSD	Local Upgrade by delta package (XMODEM) is not functional	FW Upgrade

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence

12.19. AHL78XX.2.3.0.0

12.19.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	AHL78XX.2.3.0.0-RK0201010018
Identification	ati HL7800 ati3 AHL7800.2.3.0.0.20190121 at%ver NP Package: RK_02_01_01_00_18 Apps: RKAPP_02_01_01_00_17__52a2801313924544b18fb0cd20d894d22b8a3140 Modem Apps: ALT1250_02_01_01_00_17_MA Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_202576 MAC Package Version: ALT1250_02_01_01_00_17_FW MAC Build Time: Jan_08_2019_12_31_59 PHY Revision: 12.50.202571 PHY Build Time: Jan_08_2019_10_31_35 PHY Build Info: releas_0 PMP Revision: 202576 PMP Version: 17_FW PMP build time: Jan_08_2019_12_31_59 DSP Revision: 41935 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Jan 21 2019 16:33:04 ati9 HL7800.2.3.0 AHL78xx.2.3.0.0.RK_02_01_01_00_18.20190121 2019/01/21 16:34:35 IMEI-SV: 3546160900092201

	Legato RTOS: 18.09.0.ALT1250.rc3 2019/01/14 08:58:17 atSwi: 07.14 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_17__52a2801313924544b18fb0cd20d894d22b8a31 40 Modem Apps: ALT1250_02_01_01_00_17_MA MAC: ALT1250_02_01_01_00_17_FW PHY: 12.50.202571 PMP: 202576
Date of generation	2019/01/21 16:34:35
Binary Size	4763648 AppFW_flash.bin 420 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 523132 u-boot.bin 3767176 ue_lte.fw 4096 partmap.bin 2692064 ue_lte.fw2
MD5	721718ccb648844118b0cbd1755fa6df389369a4 AppFW_flash.bin 0b39c63cb59e73f809e098c89367e56bb6fe50ab sysHeader_backup.bin.alt1250 6e085b305459bd80548119fa1bd97c8793c6cf0a sysHeader.bin.alt1250 c8e78106c7ebdffbd175b47748a6f3395dfd17ba u-boot.bin f2152f84ebb2a430ec0adc36d816a525140fb074 ue_lte.fw 6d1fb8ad272bee5046ebdd8f952daaec64dc5044 partmap.bin fa1deb5b0ea86499a9d3955bf15f4b5dadb48f16 ue_lte.fw2

12.19.2. Software Changes Description

12.19.2.1. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
DIZZY1-691	Sending AT Command is split when turn on Echo ATE1
DIZZY1-676	Cannot switch to NB1
DIZZY1-670	Upgrading to 2.2 FW bricks the modem - Use Case 1
DIZZY1-660	[HL78] Double OK on boot
DIZZY1-643	[Crash] Systematic crash at startup when switching to NB1 RAT (MAC exception)
DIZZY1-609	[CFUN] Double OK is returned with AT+CFUN=1,1 command
DIZZY1-608	Responses of some commands are missing \r\n
DIZZY1-604	[KBNDCFG] Module is frozen after configuring all supported bands

ID	Description
DIZZY1-591	[CPSMS] Sometimes CTS is HIGH but module does not response anything after wake up from Hibernate
DIZZY1-589	No more answer to AT commands can occur after +KCARRIERCFG
DIZZY1-583	v25 profile lost on 1st boot after update
DIZZY1-494	[KCELL] Module returns +CME ERROR: 60 when sending command AT+KCELL=0
DIZZY1-478	HL7800 CPOF command Fail in time
DIZZY1-456	[CEDRXS] Displayed configuration is not updated while in CFUN=0
DIZZY1-342	[CEDRXS] Unsolicited +CEDRXP is not displayed on UART even if enabled
DIZZY1-311	[NS][+COPS] Wrong responses when testing AT+COPS=? command
DIZZY1-305	[CTZR]URC +CTZV: <tz> does not return after enable Time Zone Reporting by command AT+CTZR
DIZZY1-229	[PROTOCOL][+KCNX_IND] The +KCNX_IND: 1,0,0 URC is not displayed when there is TCP connection error
DIZZY1-222	[NS][CEREG][Amarisoft] Double +CEREG URCs are returned after registering/de-registering network registration by +COPS, +CFUN, +CGATT
DIZZY1-193	[PROTOCOL][KTCPCFG]TCP sessions are displayed incorrectly
DIZZY1-178	[V25TER][ATE][IFC] Wrong display current configuration of ATE and IFC command after executed concatenated command

12.19.2.2.   Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
WDSD	Local Upgrade by delta package (XMODEM) is not functional	FW Upgrade
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence

12.20. AHL78XX.2.2.0.0

12.20.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	AHL78XX.2.2.0.0-RK0201010009
Identification	ati HL7800 ati3 AHL7800.2.2.0.0.20190107 at%ver NP Package: RK_02_01_01_00_09 Apps: RKAPP_02_01_01_00_10__c042c2340fec785e1549a022ea05147d42b3277f Modem Apps: ALT1250_02_01_01_00_08_MA Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_01_REV_200767 MAC Package Version: ALT1250_02_01_01_00_09_FW MAC Build Time: Dec_10_2018_14_11_23 PHY Revision: 12.50.200754 PHY Build Time: Dec_10_2018_11_47_52 PHY Build Info: releas_0 PMP Revision: 200767 PMP Version: 09_FW PMP build time: Dec_10_2018_14_11_23 DSP Revision: 41092 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Jan 7 2019 15:34:28 ati9 HL7800.2.2.0 AHL78xx.2.2.0.0.RK_02_01_01_00_09.20190107 2019/01/07 15:35:14 IMEI-SV: 0044024600289401 Legato RTOS: 18.04.2.ALT1250.rc20 2018/12/20 16:38:04 atSwi: 07.14 UBOOT: 01.03 Apps: RKAPP_02_01_01_00_10__c042c2340fec785e1549a022ea05147d42b3277f Modem Apps: ALT1250_02_01_01_00_08_MA MAC: ALT1250_02_01_01_00_09_FW PHY: 12.50.200754 PMP: 200767

Date of generation	2019/01/07 15:40
Binary Size	4718592 AppFW_flash.bin 428 sysHeader_backup.bin.alt1250 3492 sysHeader.bin.alt1250 493980 u-boot.bin 3743520 ue_lte.fw 4096 partmap.bin 2664988 ue_lte.fw2
MD5	010a9c4357476f9edda094f0c6ed7237a3ebe23c AppFW_flash.bin 5768948434459c909617b384a99749c032492b61 sysHeader_backup.bin.alt1250 fd254275f934660e2437e11daebda5833e0617c7 sysHeader.bin.alt1250 3cd2332d6abb7e581ac6861e18cd244fd5f6c800 u-boot.bin 302ab964e6d521f6f9676fe72ace33cae6aa7db9 ue_lte.fw 71717a16af7bd59243919028f75e77b0616a1701 partmap.bin b55ecee813522e5466cee1aaa44a885d68ceb6d0 ue_lte.fw2

12.20.2. Software Changes Description

12.20.2.1. Validated Corrections/Improvements

This section presents all corrections or improvements integrated in this release.

ID	Description
ALT1250-2513	[SMS][+CMGR] Redundant \r\n when read SMS with index 1 is empty
ALT1250-2486	CHAP authentication issue
ALT1250-2416	Merge issue for RK_02_00_01_15
ALT1250-2048	PSM Timers management issue at limits

12.20.2.2. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
NB1/KSRAT	NB1 Switch is only available on PV2 HW releases	NB1
DEBUG	Modem Logs not available	DEBUG Logs/Traces
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
WDSD	Local Upgrade by delta package (XMODEM) is not functional	FW Upgrade
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence

12.21. AHL78XX.1.8.0.0

12.21.1. Release Identification

	Services (ATI, AT%VER)
FW Identification	AHL78XX.1.8.0.0-RK0201000047
Identification	ati HL7800 ati3 AHL7800.1.8.0.0.20181109 at%ver NP Package: RK_02_01_00_00_47 Apps: RKAPP_02_01_00_00_43__a065e9d3571d9cd78b999ddfb767f2d78e2dcc18 Modem Apps: ALT1250_02_01_00_00_21_MA Using APP processor - no SB or 3B versions MAC Revision: REL_1250_02_01_00_REV_197651 MAC Package Version: ALT1250_02_01_00_00_50_FW MAC Build Time: Oct_18_2018_16_42_04 PHY Revision: 12.50.197647 PHY Build Time: Oct_18_2018_15_49_42 PHY Build Info: releas_0 PMP Revision: 197651 PMP Version: 50_FW PMP build time: Oct_18_2018_16_42_04 DSP Revision: 32302 BB Product: 1250 BB HW Revision: 20 RFIC_6200 Revision: 00 NP Build Time: Nov 9 2018 09:38:04 ati9 HL7800.1.8.0 AHL78xx.1.8.0.0.RK_02_01_00_00_47.20181109

	2018/11/09 09:39:03 IMEI-SV: 3546160901199701 Legato RTOS: 18.04.2.ALT1250.rc15 2018/10/25 10:35:05 atSwi: 07.10 UBOOT: 01.03 Apps: RKAPP_02_01_00_00_43__a065e9d3571d9cd78b999ddfb767f2d78e2dcc18 Modem Apps: ALT1250_02_01_00_00_21_MA MAC: ALT1250_02_01_00_00_50_FW PHY: 12.50.197647 PMP: 197651
Date of generation	2018/11/09 09:40
Binary Size	3973120 AppFW_flash.bin 4096　partmap.bin 3492　sysHeader_backup.bin.alt1250 3492　sysHeader.bin.alt1250 487064　u-boot.bin 3730012 ue_lte.fw 2901688 ue_lte.fw2
MD5	53ad3fa3c4887731e8a945c7ab24290d30a67116　AppFW_flash.bin b1b142b99d04e94f68fd05c4d74edeedbd8e8f94 sysHeader_backup.bin.alt1250 f4195d10921f6822b1e83c750a2a6cd2f9ec5b2e　sysHeader.bin.alt1250 0f4511345ebd7ebd0886c4815ca0e973b0252a95　u-boot.bin eaa55895c33a7b1f54d49ed8abd15249a9795aa1　ue_lte.fw 92f64e813491fdd90893ffc6242ad8c822e9e847　partmap.bin dc39eba144ad268e22e52666e8a989bbe7ff0040　ue_lte.fw2

12.21.2. Software Changes Description

12.21.2.1. Restrictions and Additional Information

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
RF TX/RX	Commands WMTXPOWER/WMRXPOWER are not supported on NB1	RX/TX Power (NB1)
WDSD	Local Upgrade by delta package (XMODEM) is not functional	FW Upgrade
+CPOF AT Command	Unable to use wakeup pin	Power Management

Features	Description (What/When)	Impacted Functionality/Sub-Functionality
PWR_ON_N	Power-on feature is disabled, HL7800 is starting as soon as VBAT is applied.	Module start sequence