



Sierra Wireless HL7810, HL7812, and HL7845

Customer Release Notes for Firmware 5.x



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Contact Information

Sales information and technical support, including warranty and returns	Web: sierrawireless.com/company/contact-us/ Global toll-free number: 1-877-687-7795 6:00 am to 5:00 pm PST
Corporate and product information	Web: sierrawireless.com

Revision History

Revision number	Release date	Changes
1.0	October 2022	Creation for HL78XX.5.4.10.0
2.0	January 2023	Added FW 5.4.12.1 release

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>> 1: Introduction

1.1 Document Scope

This document describes HL7810, HL7812, and HL7845 firmware release changes and known issues in external customer releases.

1.2 Document Audience

These release notes may be distributed to all direct and indirect customers.

>> 2: Compatibility

2.1 Software Compatibility

S/W Tools Name	Version
ImageBurnTool	V 1.0.0.0

>> 3: 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 (for Delta only).

Detailed procedures are described in reference HL781x - FW Update Methods Application Note. Some limitations may apply.

>> 4: HL78XX.5.4.x Release Description

4.1 HL78XX.5.4.12.1 Release Description

4.1.1 Release Identification

Table 4-1: Package Release Information

	Services (ATl9)
Firmware Identification	HL7810.5.4.12.1 HL7812.5.4.12.1 HL7845.5.4.12.1
Components	Chipset baseline: RK0302000024271001 Legato RTOS: 22.10.0.FreeRTOS.w43 atSwi: 22.10.0.FreeRTOS.w43 UBOOT: 01.03 Apps: RKAPP_03_02_00_00_24141_003__8c58020c3faa979ee7380bc905d0267fc2aed66e M1 MAC(HL7810,7845): ALT1250_03_02_00_00_24271_FW M1 MAC(HL7812): ALT1250_03_02_00_00_24271_2G
Date of Generation	2022/11/02
IMEI SV	12
TS 25 PLMN List	7 June 2021
Supported HW	HL7810, HL7812, HL7845

4.1.2 Software Change Description

This section describes all corrections or improvements integrated in 5.4.12.1.

Table 4-2: New Features and Improvements

ID	Title	Description	Impacted Domain
Network			
HYB-330	IPv6 Address	IPv6: add ability to fix the lowest 64 bits of the IPv6 address, please see AT command guide for details of AT+KIPVSIXI.	
HYB-102	RF	Added antenna tuner support on HL7845	
Standards and Carrier Compliance			
HYB-348	Orange Approval - HL7812	Initial approval of HL7812 at Orange	

Table 4-3: Bugs Resolved

ID	Title	Description	Impacted Domain
ALT1250-4721 ALT1250-4726	CMUX URC Behavior	Issues: <ul style="list-style-type: none"> The URC configuration on the MUX channels are applied globally. Change CMUX RTS signal are always in hardware flow control. 	
HYB-261 HYB-127 HYB-603	NVBU / Auto restore	Issues: <ul style="list-style-type: none"> Module does not auto restore when the reboot counters reach its limit Module takes 5 minutes to restore Factory fresh units crash/NV restore when changing KCARRIERCFG 	
HYB-573 ALT1250-4744 ALT1250-4720 ALT1250-4615 ALT1250-4561 ALT1250-4265	Incorrect Ring Indicator behavior	Issues: <ul style="list-style-type: none"> RI Pulse on CGREG and CREG State change CGREG and CREG always share the same status PPP for RI, the duration setting is incorrect PPP for RI, the duration should be configurable PPP for RI, did not handle the send data package Module returns URC +CREG after attaching or detaching from the network although disable network registration is an unsolicited result code +CREG 	

Table 4-3: Bugs Resolved (Continued)

ID	Title	Description	Impacted Domain
ALT1250-4907 ALT1250-4585 ALT1250-4573	TCP / UDP	Issues: <ul style="list-style-type: none"> The module crashes when sending different combinations of dashes, plus and text to UDP server Module can't delete a TCP session when starting TLS over TCP server with server authenticate. Module crashes when starting TLS over TCP server using server authentication. 	
ALT1250-4613 ALT1250-4772	KSRAT	Module is stuck with +KSRAT=2 when using the T-Mobile network.	
HYB-606	PINGCMD	PINGCMD causing a crash when issued from CLI/DEBUG port	
HYB-605	AUX	AUX command always say ERROR instead of OK even though AUX is successfully captured .	
ALT1250-4594 ALT1250-4682	AVMS related	Issues: <ul style="list-style-type: none"> During bootstrap, unsolicited message responded incorrectly, so module could not receive the OTA message [AVMS][WDSS]-Module crashes when send AT+WDSS=1,0 before the URC +WDSI: 23,1 	
Low Power Mode			
ALT1250-4459	[LPM] Module cannot go to hibernation with APN configured	Configure APN for PDP context 1 and reset module. Make sure the module is attached to network, then configure eDRX or PSM. Configure module to go to hibernate mode using command AT+KSLEEP=1.	
ALT1250-4609	[PSM] Module crashes when entering into hibernate mode with embedded SIM after some period T3412	Module crashes when entering to hibernate mode with embedded SIM after some period T3412.	
HYB-578	High current consumption with DRX=320ms	High current consumption in hibernation mode with DRX=320ms	

4.2 HL78XX.5.4.10.0 Release Description

4.2.1 Release Identification

Table 4-4: Package Release Information

	Services (ATI9)
Firmware Identification	HL7810.5.4.10.0 HL7812.5.4.10.0 HL7845.5.4.10.0
Components	Chipset baseline: RK0302000022111001 Legato RTOS: 22.04.0.FreeRTOS.w19 atSwi: 22.04.0.FreeRTOS.w19 UBOOT: 01.03 Apps: RKAPP_03_02_00_00_22061_001__d21d59a7ccfd13226f6533f3bf8647cb216120a8 M1 MAC(HL7810,7845): ALT1250_03_02_00_00_22111_FW M1 MAC(HL7812): ALT1250_03_02_00_00_22111_2G
Date of Generation	2022/05/30
IMEI SV	11
TS 25 PLMN List	7 June 2021
Supported HW	HL7810, HL7812, HL7845

4.2.2 Software Change Description

This section describes all corrections or improvements integrated in 5.4.10.0.

Table 4-5: New Features and Improvements

ID	Title	Description	Impacted Domain
Security			
HYB-374	Enable Secure Boot for HL7810/12/45	Required to enable Secure boot for new products HL7810, HL7812 and HL7845.	
Network			
HYB-379	NIDD	Add support for NIDD (Non-IP Data Delivery)	
Standards and Carrier Compliance			
HYB-244	GCF on HL781x	Initial GCF Approval	
HYB-12	PTCRB on HL781x	Initial PTCRB Approval	

Table 4-6: Bugs Resolved

ID	Title	Description	Impacted Domain
HYB-116	When config KCARRIERCFG=1, PDN configuration is incorrect	When config KCARRIERCFG=1, CID 3 and 4 are missing and could not delete CID 6 and 7 also could not add CID 3 and 4, however we can delete/add for CID 1.	
ALT1250-4559	[HL7812] CMUX HW Flow control not working	The HL7812 does not use HW-Flow control when in Multiplex Mode (GSM0710). The modem does respect the RTS set by the MCU, but it doesn't set its CTS anymore.	
HYB-273	[TCP MO] NO CARRIER during KTCPSND	During TCP MO data session, NO CARRIER is returned after AT+KTCPSND command. However, we do receive a KTCP_ACK indication showing that the data was received. In the FWATE logs, it shows that *more* data was received at the NW that what the UE sent	
HYB-519	Module fails to connect to Bootstrap server with IPV4V6	With a device properly registered to AirVantage, after device boots up, running at+wdss=1,1 will cause the device to fail to connect to Bootstrap server. This failure happens when at+cgdcont uses "IPV4V6" for the second parameter, the failure doesn't happen when using "IP" only.	

Table 4-6: Bugs Resolved (Continued)

ID	Title	Description	Impacted Domain
HYB-528	Module crash when close a CMUX port	<p>This crash was observed on the latest master build.</p> <p>Steps to reproduce the crash:</p> <ol style="list-style-type: none"> 1. Connect HL78 AT UART AT port to Windows 2. Open MuxConfTool on Windows and open 4 CMUX ports from the AT port. 3. Open one of the generated CMUX ports by PuTTY, type some commands such as "ati" make sure it responds. 4. Close PuTTY. <p>After doing step 4, a crash happened and the CLI log showed</p>	
ALT1250-4399	[FTP] Failed to create FTP connection	Failed to create FTP connection.	
Low Power Mode			
HYB-263	[PSM] Module not entering DH0 state	<p>Issues:</p> <ul style="list-style-type: none"> • Module was unable to enter the PSM state during FWATE PSM test cases • Module waking up every ~5sec 	
HYB-262	[FWATE][eDRX] Frequent wake ups during eDRX	<p>Issue:</p> <ul style="list-style-type: none"> • Module is waking up during the eDRX cycle, adding to current consumption 	
ALT1250-3831	[RK3.0] Sleep mode failure with DTR wakeup enabled	<p>DTR wakeup is broken on the RK3.0 branch. With KSLEEP=0,x,x, the module does not enter hibernate mode when all wakeup sources are removed. The CLI and AT ports are inactive after setting DTR off, but the current consumption goes up and never falls to the expected level.</p> <p>The following scope capture shows the increase in current consumption when the DTR wakeup source is removed.</p>	
HYB-464	Optimize KNTPCFG for low power modes	<p>Now that the SNTP service on the HL78 is configurable (HYB-298), we need to make sure that it is optimized (or that we can provide customer guidance) for use in conjunction with low power modes.</p> <p>Having the SNTP service running can add unexpected wakeups and in the worst case prevent entering low power modes.</p>	

Table 4-6: Bugs Resolved (Continued)

ID	Title	Description	Impacted Domain
HYB-458	Device does not perform a graceful detach - issue uncovered by EURY-4378	<p>When the MAC layer disables the SIM due to communication failure during hibernate wakeup, the device is not detaching from the NW.</p> <p>MAC FW sends a %SIMD URC that the connection manager on the MAP should receive and initiate detach from the NW. This is not happening, and it seems the %SIMD URC is never received by the MAP. On a subsequent wakeup, device detects no SIM but finds it is still attached to NW and then modem FW performs a local detach. Later, after device misses TAU it is implicitly detached from the NW.</p> <p>This might due to stateless hibernation and the MAP is either never woken up properly to receive URC, or this URC is sent too early (although we have fixed all other known instances of this problem). If this is true, the odds are very low that this will be fixed at 4.x FW.</p>	
Tools			
ALT1250-4463	[AVMS][FOTA][HL7845] Failed to upgrade FW with the FOTA job on AVMS	<p>The module HL7845 cannot upgrade FW with the FOTA job on AVMS.</p> <p><i>Note: The issue does not happen with HL7810.</i></p>	AVMS
ALT1250-4635	Include AISE version in package version failed in Jenkins job	The FOTA download will fail, and the app firmware information of the module on the AVMS will not be updated successfully after the synchronization procedure is successful.	AVMS
ALT1250-4539	[AVMS][FOTA][HL7845] Failed to upgrade FW with the FOTA job on AVMS	<p>The module HL7845 cannot upgrade FW with the FOTA job on AVMS</p> <p><i>Note: The issue does not happen with HL7810</i></p>	AVMS

Table 4-6: Bugs Resolved (Continued)

ID	Title	Description	Impacted Domain
ALT1250-4090	NVBackup	Issues: <ul style="list-style-type: none"> AT+NVBUI automatic mode: The module takes about 5 minutes to complete, during this time AT and CLI port is frozen (No debug output) The auto backup mode" is not working. 	
HYB-191	[WDSC] User agreement for package download/package install is not persistent after FOTA: HL7802:E0.5.3.4.0 <->HL7802:E0.5.3.4.0.99	User agreement for package download/package install is not persistent after FOTA. <i>Note:</i> <ul style="list-style-type: none"> The issue happens when user updates FW by SFT tool (HL7802:E0.5.3.3.0 -> HL7802.5.3.4.0) SFT from 4.3.6.0 -> 5.3.0.0: issue does not happen SFT from 4.3.6.0 -> 5.3.4.0: issue happens 	AVMS

4.3 Restrictions

This section presents additional information or restrictions that should be considered for 5.4.x.

Feature	Description	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

4.4 Known Issues

The following issues may be observed in the 5.4.12.1 release.

ID	Title	Description	Impacted Domain
HYB-682 HYB-686	GNSS	<ul style="list-style-type: none">GNSS COLD start is not applied when trying to activate it with AT+GNSSSTARTWith Cell_OFF and module configured to output NMEA frames on UART1, modules reset after 6-7 hours	
HYB-659	Power consumption	HL7810 Not able to process AT commands immediately after CTS Assert once after PowerOff followed by PowerOn	
HYB-665 HYB-692	Ring indicator	<ul style="list-style-type: none">RI not triggered when moving from PSM to eDRXUDP URC is coming after delay of 300-400ms after RI interrupt.	
ALT1250-4964	GPIO	[HL78xx][KGPIOCFG]AT+KGPIOCFG missing some pins	
ALT1250-4832	Suspend mode	[MAP] +KMON=1 is not persistent	
ALT1250-4453	HTTP	[HL78xx] [KHTTPHEADER] Module lost "-" in AT+KHTTPHEADER sending	
ALT1250-4963	TCPS related	[HL78xx] [KTCPCFG] [KUDPCFG] Restore session on boot works incorrect	

>> A: Appendix

A.1 Abbreviations and Definitions

Abbreviation/Acronym	Definitions
ATIP	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 Identity Module
SINR	Signal to Interference plus Noise Ratio
UART	Universal Asynchronous Receiver Transmitter
URC	Unsolicited Result Code
USB	Universal Serial Bus

A.2 Related Documentation

Ref. #	Doc. #	Document title
[R-1]	41111821	AirPrime HL78xx AT Commands Interface Guide
[R-2]	41114133	HL781x - Product Technical Specification.pdf
[R-3]	41112256	AirPrime HL78xx Development Kit User Guide
[R-4]	2174229	AirPrime HL7800 Low Power Modes Application Note
[R-5]	2174213	AirPrime HL78xx Customization Guide Application Note
[R-6]	2174259	HL781x - FW Update Methods Application Note