Release Note

Topic	**u-connectXpress software v4.0.0 for NINA-W13**
	UBX- 21010530 C1-Public
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Contents

1 Software

1.1 General Information

1.1.1 Scope

This release note describes the u-connectXpress software v4.0.0 for NINA-W13. It describes changes in the software since version 3.0.0.

1.1.2 Related documentation

[1] AT Command manual, UBX-14044127
[2] NINA-W13 Product summary, UBX-16029109
[3] NINA-W13 Data sheet, UBX-17006694
[4] u-connectXpress software User guide, UBX-16012261
[5] Declaration of Conformity, UBX-18007182

1.1.3 Released software image

The files in the NINA-W13 software image are summarized in the table below.

File	Description
NINA-W13-SW-4.0.0-003.bin	Software binary
NINA-W13-CF-1.0.json	Manifest that defines the memory addresses for the binary
NINA-W13-SI-4.0.0-003.txt	u-connectXpress software signature

1.1.4 Hardware and software compatibility

The table below describes the NINA-W13 module variants and which u-connectXpress software versions they each support.

Order code	Pre-flashed software	Supported software versions
NINA-W131-00B	1.0.1	1.0.1, 2.0.0, 2.1.0, 3.0.0, 4.0.0
NINA-W131-01B	2.0.0	1.0.1, 2.0.0, 2.1.0, 3.0.0, 4.0.0
NINA-W131-02B	3.0.0	3.0.0, 4.0.0
NINA-W131-03B	4.0.0	3.0.0, 4.0.0
NINA-W132-00B	1.0.1	1.0.1, 2.0.0, 2.1.0, 3.0.0, 4.0.0
NINA-W132-01B	2.0.0	1.0.1, 2.0.0, 2.1.0, 3.0.0, 4.0.0
NINA-W132-02B	3.0.0	3.0.0, 4.0.0
NINA-W132-03B	4.0.0	3.0.0, 4.0.0

1.2 Released software tools

s-center version 5.3.0 has been released and is published on u-blox.com.

2 Features and improvements

2.1 WPA3 authentication

Support for authentication and encryption with WPA3 method has been added.

2.2 Data in AT mode

Support to send data in AT mode has been included. It is now possible to send and receive data in text, hex, or binary format using `AT+UDATW` and `AT+UDATR` commands.

2.3 Protected Management Frames

Protected Management Frames (PMF), as defined in the IEEE 802.11w specification, provides for the encryption of the network management information sent between the access point and station. This added feature protects the module from spoofing attacks.

2.4 GPIO stream

Control and monitor GPIO pins using the stream command `AT+UDCP`. This feature is not fully tested in all use cases and is provided in experimental form for evaluation only.

2.5 Sleep mode

When configured in sleep mode, NINA-W13 operates with even lower power consumption than that in standby mode and retains memory content. In this mode, the UART is disabled but any connection is kept. This feature was provided in experimental form for evaluation purposes in previous releases, but is now officially released after successful testing.

2.6 ETSI EN 300 328 regulatory compliance

The software includes updates to the radio driver that supports new requirements in the ETSI EN 300 328 v2.2.2 standard. Compliance testing has been successfully completed. The Declaration of Conformity has been subsequently updated [6] to reflect this.

3 Solved issues

Area	Description	Reference
Application	`AT+UDCFG=3,<` DSR activation bit mask. > is not functional. Only bit 1 (active DSR on peer connected) is implemented.	UCS_DEV-1122
Wi-Fi	The third output parameter, RSSI, in +UWAPSTALIST, is not valid. *Solution: Clarification in AT manual, parameter not used [1].*	UCS_DEV-1184
Application	Module could restart the first time PPP is activated or at first connection to a new AP.	UCS_DEV-1214
Wi-Fi	`AT+UWSC=0,6` and `AT+UWSC=0,7` (WEP) returns OK despite not supported.	UCS_DEV-1398
Application	Responses to `AT+UDHTTP` or `AT+UDHTTPE` exceeding 450 characters will only return the first 450 characters in `+UUDHTTP`.	UCS_DEV-1400 UCS_DEV-1403
Application	Network time client cannot be disabled, once enabled.	UCS_DEV-1405
Application	`AT+UDHTTP` crash with www.bbc.co.uk.	UCS_DEV-1522
Application	Pin 27 not possible to use as GPIO.	UCS_DEV-1587
Application	`AT+UDHTTPE` URL max length is 31.	UCS_DEV-1619
Application	Restarts due to Ethernet driver out of heap memory.	UCS_DEV-1629
Application	`AT+UDCP`: Max size of <domain> limited to 64 characters. *Solution: Increased to 128 characters.*	UCS_DEV-1684
Application	Unable to resume UDP communication with UDP listener after `AT+UDCPC`.	UCS_DEV-1738

4 Known limitations

Area	Description	Reference
Application	UART baud rate higher than 115200 is not supported when Automatic Frequency Adaption is enabled. Workaround: Use 115200 or disable Automatic Frequency Adaption	UCS_DEV-196
Wi-Fi	When AP is configured with OPEN security, de-authentication of stations based on whitelist/blacklist asserts the module. Workaround: Use WPA security.	UCS_DEV-669
Wi-Fi	Configuring as Wi-Fi Access Point with PPP causes the module to reset if Access Point is activated while in PPP mode. Workaround: Configure AP before going into PPP mode.	UCS_DEV-687
Application	After upgrading to this version of u-connectXpress, downgrading to a version older than 2.1.0 may cause the module to assert immediately after startup.	UCS_DEV-908

Area	Description	Reference
	Workaround: Execute the following procedure 1. Enter bootloader mode. See data sheet chapter 2.5.2 System control IO signals for instructions. *Note that access to pin 7 (SWITCH_1) and pin 18 (SWITCH_2) is required.* 2. While in bootloader mode, send the following sequence on UART to the module: `e 0x001E0000 0x0001FFFF` 3. Reset module.	
Application	Ethernet Address Conflict Detection (`+UNACDT`) is not functional.	UCS_DEV-967
Application	The netup event (`+UUNU`) for any link layer network interfaces like Wi-Fi station(0), Ethernet(10), Bridge(13) will be emitted only if there is a valid IP address associated with the corresponding netif. The default IP address associated with any interface in case of static IPv4 mode is 0.0.0.0. This is the reason the netup event is not emitted when there is an interface activate command for bridge, Ethernet.	UCS_DEV-1096
Application	EAP-TLS certificates larger than 1024 bits may cause module to restart.	UCS_DEV-1109
Wi-Fi	The L-STF preamble in the PPDU field is approximately 2.4 us too long.	UCS_DEV-1180
Application	HTTP client limitations: `+UUDHTTP`: May return status code -1 in some cases. `+UUDHTTP`: Behavior is undefined if server does not provide Content-Length `AT+UDHTTP`/`AT+UDHTTPE`: Does not follow redirects. `AT+UDHTTPE`: Max length of content is 2000 bytes.	UCS_DEV-1403
Application	Broadcast UDP messages are not forwarded to other interfaces as expected, in case DHCP server is enabled on the bridge.	UCS_DEV-1404
Wi-Fi	Watchdog settings +UDWS not working for param 3 (Wi-Fi Station disconnect reset) and should not be used.	UCS_DEV-1598
Application	HTTP client limited to printable UTF-8 characters; binary data not supported.	UCS_DEV-1620
Application	Server certificate validation not working with IBM IoT Cloud.	UCS_DEV-1736
Application	`AT+UDLP` also lists not connected peers when default remote peer is configured. Workaround: Use Connect peer command, `AT+UDCP`, to establish connections.	UCS_DEV-1759
Application	`AT+USTOP` for sleep mode with disallowed pins 11 and 15 responds "valid".	UCS_DEV-1868