

Release Note

Topic	u-connectXpress v5.0.0 for NINA-B1 series UBX-19008637
Author	Len Albertsson
Date	18 March 2019

Copying, reproduction, modification or disclosure to third parties of this document or any part thereof is only permitted with the express written permission of u-blox. The information contained herein is provided "as is" and u-blox assumes no liability for its use. No warranty, either express or implied, is given, including but not limited to the accuracy, correctness, reliability and fitness for a particular purpose of the information. This document may be revised by u-blox at any time. For most recent documents, visit www.u-blox.com.
Copyright© u-blox AG.

Contents

1	General Information	2
1.1	Scope	2
1.2	Supported hardware	2
1.2.1	New ordering codes for the modules flashed with u-connectXpress v5.0.0	2
1.2.2	Ordering codes for the modules upgradeable to u-connectXpress v5.0.0	2
1.3	Released software package	2
1.4	Updated documentation	2
1.5	Released software tools	3
2	New features	4
2.1	LE Secure Connections	4
2.2	Major increase of GATT characteristics/services	4
2.3	Extended Advertisements	4
2.4	Improved customization possibilities for Device Information Service record	4
2.5	Possibility to disable the DC/DC converter	4
3	Notes and limitations	5
3.1	Solved limitations	5
3.2	Known limitations	5

1 General Information

1.1 Scope

This release note describes the u-connectXpress v5.0.0 software for NINA-B1 series modules. The u-connectXpress software was previously known as the u-blox connectivity software (uCS).

1.2 Supported hardware

1.2.1 New ordering codes for the modules flashed with u-connectXpress v5.0.0

Product name	Ordering code	Type number	Software version
NINA-B111	NINA-B111-04B	NINA-B111-04B-00	v5.0.0
NINA-B112	NINA-B112-04B	NINA-B112-04B-00	v5.0.0

1.2.2 Ordering codes for the modules upgradeable to u-connectXpress v5.0.0

Product name	Ordering code	Type number	Software version
NINA-B111	NINA-B111-03B	NINA-B111-03B-00	v4.0.0
NINA-B112	NINA-B112-03B	NINA-B112-03B-00	v4.0.0
NINA-B111	NINA-B111-02B	NINA-B111-02B-00	v3.0.1
NINA-B112	NINA-B112-02B	NINA-B112-02B-00	v3.0.1
NINA-B111	NINA-B111-01B	NINA-B111-01B-00	v2.0.0
NINA-B112	NINA-B112-01B	NINA-B112-01B-00	v2.0.0
NINA-B111	NINA-B111-00B	NINA-B111-00B-00	v1.0.0
NINA-B112	NINA-B112-00B	NINA-B112-00B-00	v1.0.0

It is possible to update all NINA-B1 series modules to u-connectXpress v5.0.0. See the [NINA-B1 System Integration manual](#) for information about the software update procedure.

1.3 Released software package

File	Description
NINA-B1_5.0.0.zip	u-connectXpress v5.0.0 software package

The software package is available for download from www.u-blox.com.

1.4 Updated documentation

Document	Document ID
NINA-B1 Data Sheet	UBX-15019243
NINA-B1 System Integration Manual	UBX-15026175
NINA-B1 Product Summary	UBX-15018552
Using u-connectXpress software User Guide (replaces the NINA-B1 Getting Started, UBX-16009942)	UBX-16024251
u-connect AT Commands Manual (previously named u-blox Short Range Modules AT Commands Manual)	UBX-14044127

The documents are available for download from www.u-blox.com

1.5 Released software tools

The s-center version 4.7.1 or later is recommended for evaluation of u-connectXpress v5.0.0. The s-center application is available for download from www.u-blox.com.

2 New features

u-connectXpress v5.0.0 for NINA-B1 series has all the features of previous software releases (u-blox connectivity software v4.0.0), plus improvements and new features such as the main ones described below. For more information about using these features, see the [Using u-connectXpress software UserGuide](#) and the [u-connect AT commands manual](#).

2.1 LE Secure Connections

NINA-B1 now supports the enhanced security mode “LE Secure Connections” for protection against man-in-the-middle attacks and increased encryption using the FIPS-compliant key generation algorithm called Elliptic Curve Diffie Hellman (ECDH). For further details see the *Using u-connectXpress software UserGuide* and the AT commands AT+UBTPM, AT+UBTST, AT+UBTGCHA and AT+UBTGDES.

2.2 Major increase of GATT characteristics/services

The maximum number of GATT services and characteristics that can be created and stored in NINA-B1 has been increased significantly. The maximum number depends on the configuration of NINA-B1 and can be up to 29 characteristics. For further details, see the *Using u-connectXpress software UserGuide* and the AT command AT+UBTGCHA and the new optional parameter <max_length>.

2.3 Extended Advertisements

Support for extended advertisement messages according to the Bluetooth 5 specification has been implemented. This includes longer broadcast/advertising messages and use of more advertising channels for offloading the three legacy advertisement channels. For further details, see the *Using u-connectXpress software UserGuide* and the AT commands AT+UBTLECFG (parameter 29) and AT+UBTAD.

2.4 Improved customization possibilities for Device Information Service record

The Device Information Service in Bluetooth Low Energy exposes manufacturer and vendor information about a device. The information in the Device Information Service can be read by remote Bluetooth low energy devices, for example manufacturer’s name, model number, firmware revision, and software revision. The complete set of available data fields in the service record can now be fully customized via an AT command. For further details see the updated AT command AT+UBTLEDIS.

2.5 Possibility to disable the DC/DC converter

It is now possible to disable to automatic switching between the DC/DC converter and the LDO, to force the module to always use the LDO. This can for example be useful in areas with extreme magnetic fields. For further details, see the AT command AT+UPWRREG.

3 Notes and limitations

3.1 Solved limitations

Description	Reference
Creating a GATT characteristic (AT+UBTGCHA) with initial value 0F will create a GATT characteristic without initial value.	AE_SHO-334
After entering sleep mode (AT&D3) via a transition of the DTR line it is not possible to exit sleep mode until after 3 seconds.	AE_SHO-338
Changing escape character (ATS2) requires a store and reset when Configuration Over Air (AT+UDSF, allow remote configuration) is enabled.	TE_NB1_FW-28
Boot loader hangs when entering the c command incorrectly without any parameters.	AE_SHO-362
In EDM mode, command response lines may be lost due to the internal event buffer being full, for example when listing all bonded devices using AT+UBTBD the list may be incomplete due to lines being lost.	TE_NINA_NRF_FW-422 UCS_DEV-80
A high load of transmitted data with UART flow control disabled, for example using an SPS connection, may make the module disconnect.	TE_NINA_NRF_FW-702 TE_NINA_NRF_FW-831
The bootloader only works with UART on default baud rate setting 115.2 kbps.	TE_NINA_NRF_FW-737
Bonding (AT+UBTB) is not functional when the device is configured in simultaneous central and peripheral role (AT+UBTLE=3).	TE_NINA_NRF_FW-807
Reading RSSI (AT+UBTRSS) when peer is out of range hangs the module.	TE_NINA_NRF_FW-911
Sending a connection command (AT+UBTACL) in "configuration over air" mode makes the module restart.	TE_NINA_NRF_FW-842

3.2 Known limitations

Description	Reference
The command to read multiple GATT characteristics (AT+UBTGRM) is not functional and returns an error response.	TE_NINA_NRF_FW-254 UCS_DEV-30
The disconnect command (AT+UDCPC=1) is not functional until reception of the confirm event of the connect command. The workaround is to wait for the connection confirmation before sending the disconnect command.	TE_NINA_NRF_FW-284 UCS_DEV-142
When using the external pairing functionality (pairing using SWITCH_0, see AT+UBTSM), the LED flashes orange (GPIO pins for red and green LEDs are active) for 60 seconds even after successful bond.	TE_NINA_NRF_FW-426 UCS_DEV-29
In EDM mode, when a central node connects to a remote peripheral device, the wrong frame size is reported in the EDM Connect Event (0x0011). To get the correct size, use the Resend Connect Events (0x0056) command.	TE_NINA_NRF_FW-531 UCS_DEV-185

Description	Reference
<p>Incoming connection from remote default peer is rejected. The issue is seen in the following setup:</p> <ol style="list-style-type: none"> 1. On device A, set device B as default peer 2. Connect from device B to device A using UDCP or default peer configuration 	TE_NINA_NRF_FW-533
<p>The un-bond command (AT+UBTUB) is not functional until reception of the confirm event of the bonding command. The workaround is to wait for the bonding confirmation before sending the un-bond command.</p>	TE_NINA_NRF_FW-677 UCS_DEV-77
<p>The response to "Maximum allowed output power" (AT+UBTCFG param_tag 4) is the unsigned representation of the configured value.</p>	TE_NINA_NRF_FW-748 UCS_DEV-78
<p>In Simultaneous Peripheral and Central role (AT+UBTLE role 3), the maximum number of simultaneous connections is limited to 7. <i>This limitation cannot be solved, and the documentation has thus been updated to reflect this. This will be removed from the known issues list of future release notes.</i></p>	TE_NB1_FW-170
<p>The command to discover all characteristic descriptors (AT+UBTGDCD) is missing the response event when using 128bit UUIDs.</p>	TE_NINA_NRF_FW-910
<p>When going from Discoverable mode to Not Discoverable (AT+UBTDM), and then back, the Scan Response data is cleared.</p>	UCS_DEV-176
<p>Extended advertisement (AT+UBTAD) should support up to 252 bytes of data but is limited to maximum 232 bytes of data.</p>	UCS_DEV-79
<p>The module resets when extended advertisements are disabled after enabling them (AT+UBTLECFG parameter tag 29).</p>	UCS_DEV-83
<p>The minimum value for the Connect linkloss timeout (AT+UBTLECFG parameter tag 7) is 100 ms, but setting any value <110 makes the module hang on store and restart.</p>	UCS_DEV-174
<p>It is not possible to switch to EDM after establishing a Bluetooth low energy connection. No data can be transferred. The workaround is to first switch to EDM, and then establish the Bluetooth low energy connection.</p>	UCS_DEV-175
<p>Not possible to send notifications longer than 20 bytes when setting MTU size 247 (AT+UBTGSN).</p>	UCS_DEV-227