

## Release Notes

<b>Topic:</b>	<b>u-blox connectivity software v4.0.0 for NINA-B1 series</b>
	UBX-17063069
<b>Author:</b>	Len Albertsson
<b>Date:</b>	19-Apr-2018

We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express permission is strictly prohibited.

© 2018, u-blox ag.

<b>1</b>	<b>Features .....</b>	<b>2</b>
1.1	Bluetooth 5 – High speed .....	2
1.2	GPIO pin control .....	2
1.3	Additional conditions to trigger DTR pin on Bluetooth connection (for example to wake up the host) ..	2
1.4	Customized Device Information .....	2
1.5	Increased number of GATT services and characteristics .....	2
1.6	Simplified software updates using XMODEM .....	3
<b>2</b>	<b>Notes and limitations .....</b>	<b>3</b>
2.1	Solved issues .....	3
2.2	Known issues .....	3
<b>3</b>	<b>Released software package and ordering codes .....</b>	<b>4</b>
3.1	Software upgrade instructions .....	4
<b>4</b>	<b>Tools .....</b>	<b>4</b>
4.1	s-center .....	4
<b>5</b>	<b>Related documentation .....</b>	<b>4</b>

# 1 Features

u-blox connectivity software v4.0.0 for NINA-B1 series has all the features of previous software releases, plus improvements and new features such as the main ones described below. For more information about using these features, see the *NINA-B1 Getting Started guide [1]* and the *u-blox Short Range AT commands manual [2]*.

## 1.1 Bluetooth 5 – High speed

*Support for Bluetooth 5, 2 Mbps mode for higher throughput*

In Bluetooth 5, a new physical layer has been introduced for 2 Mbps link speed. This new physical layer doubles the modulation rate as compared to Bluetooth 4.2. This means that the throughput has been increased. In a duplex configuration, the maximum user data throughput has doubled from 400 kbps to 760 kbps, and in a simplex configuration, the throughput has increased to 780 kbps. The higher throughput means that the data is transferred in a shorter time and also that the radio will be active for a shorter time, thus lowering the power consumption. For further details, see the *Getting Started manual* and the AT commands AT+UBTLECFG, param\_tag 27 and 28, and AT+UBTLEPHYR.

## 1.2 GPIO pin control

*Read and write digital GPIO pins via AT commands*

NINA-B1 now provides the ability to configure, write, and read digital GPIO pins using AT command. For instance, it is possible to control an LED or a power management unit. With the Remote Configuration feature, the GPIOs can also be controlled over Bluetooth. For further details, see the *Getting Started manual* and the AT commands AT+UGPIOC, AT+UGPIOR, and AT+UGPIOW.

## 1.3 Additional conditions to trigger DTR pin on Bluetooth connection (for example to wake up the host)

*Reduced system power consumption by waking up the host when a Bluetooth device is connected*

The DTR pin can be configured for triggering when a device is connected with GAP, when a device is connected with SPS, or when a bonded device is connected. For example, this feature can be used to wake up the host system when a Bluetooth device is connected to NINA-B1, to save power consumption when no device is connected. Configuration is done by the AT commands AT&S and AT+UDCFG (param\_tag 3).

## 1.4 Customized Device Information

*Customize the data in the Device Information Service*

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. Information available is the manufacturer's name, model number, firmware revision, and software revision. The information in the service can be customized via AT commands. For further details see the *Getting Started manual* and the AT command AT+UBTLEDIS.

## 1.5 Increased number of GATT services and characteristics

*Create and store more user defined GATT services and characteristics*

The maximum number of GATT services and characteristics that can be created and stored in NINA-B1 has been greatly increased. The maximum number depends on the configuration of NINA-B1. The biggest number can be achieved when the NINA-B1 configuration is Peripheral role (AT+UBTLE), disabled SPS server (AT+UDSC), the smallest MTU size (AT+UBTLECFG), limited number of characteristic properties (AT+UBTGCHA), and 16-bit UUID for Services (AT+UBTGSER), Characteristics (AT+UBTGCHA) and Descriptors (AT+UBTGDES). For further details, see the *Getting Started manual* and the "GATT server" section in the *Short Range AT commands manual*.

## 1.6 Simplified software updates using XMODEM

*Upgrading to future software via a host made easier*

The bootloader takes care of how the software updates in NINA-B1 are done. The v4.0.0 software comes with a new bootloader, which supports a simpler software update protocol using XMODEM instead of the previously used SLIP. This means that it will be easier to implement the protocol in the host to upgrade to future software releases after v4.0.0. For further details about software updates, see the *NINA-B1 System Integration Manual* [3].

## 2 Notes and limitations

### 2.1 Solved issues

Description	Reference
General stability improvements and bug fixes	N/A
The AT command Get RSSI +UBTRSS can only be used to retrieve the RSSI value from a single remote device.	<a href="#">TE_NB1_FW-32</a>
In Extended Data Mode, the BLUE signal pin is not supported.	<a href="#">TE_NB1_FW-63</a>
NFC is enabled when NFC URI tag is written (AT+UNFCURI).	<a href="#">AE_SHO-119</a>
Cannot do factory reset using external input signals if the UART is not opened on the host side.	<a href="#">TE_NB1_FW-87</a>
Name discovery fails (AT+UBTND). Workaround is to use Discovery (AT+UBTD).	<a href="#">TE_NB1_FW-103</a>
In some situations the discovery command (AT+UBTD) may cause the device to restart.	<a href="#">AE_SHO-290</a>
The bond command (AT+UBTB) returns error when optional parameter is not present.	<a href="#">AE_SHO-153</a>
Not possible to set discovery length time (AT+UBTD) less than 1s.	<a href="#">AE_SHO-142</a>
Possible to create a GATT characteristic (AT+UBTGCHA) when the maximum number of characteristics have been reached. Reading the value from this characteristic will return an incorrect value.	<a href="#">AE_SHO-110</a>

### 2.2 Known issues

Description	Reference
Changing escape character (ATS2) requires a store and reset when Configuration Over Air (AT+UDSF, allow remote configuration) is enabled.	<a href="#">TE_NB1_FW-28</a>
In Simultaneous Peripheral and Central role (AT+UBTLE role 3), the maximum number of simultaneous connections is limited to 7.	<a href="#">TE_NB1_FW-170</a>
Creating a GATT characteristic (AT+UBTGCHA) with initial value 0F will create a GATT characteristic without initial value.	<a href="#">AE_SHO-334</a>
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.	<a href="#">AE_SHO-338</a>
The command to read multiple GATT characteristics (AT+UBTGRM) is not functional and returns an error response.	<a href="#">TE_NINA_NRF_FW-254</a>
Boot loader hangs when entering the c command incorrectly without any parameters.	<a href="#">AE_SHO-362</a>

### 3 Released software package and ordering codes

The released software package is NINA-B11X\_4.0.0.zip and is available via [www.u-blox.com](http://www.u-blox.com).

Modules flashed with software v4.0.0 can be ordered via the following ordering codes:

NINA-B1 with antenna pin: NINA-B111-03B

NINA-B1 with internal antenna: NINA-B112-03B

#### 3.1 Software upgrade instructions

See the *NINA-B1 series System Integration Manual* [3] for instructions on how to upgrade your module.



The method for updating the software v4.0.0 is new.

## 4 Tools

### 4.1 s-center

The s-center PC application is an easy-to-use graphical user interface that supports software upgrade and the AT commands to configure and control the module.

For NINA-B1 with u-blox connectivity software v4.0.0, the s-center [5] v4.2.0 or later is recommended.

## 5 Related documentation

- [1] [NINA-B1 Getting Started](#), UBX-16009942
- [2] [u-blox Short Range Modules AT Commands Manual](#), UBX-14044127
- [3] [NINA-B1 System Integration Manual](#), UBX-15026175
- [4] [NINA-B1 Data Sheet](#), UBX-15019243
- [5] [s-center PC application](#)