



NVDS Configurator Manual

Version 0.5

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1. Introduction

Quintic NVDS Configurator is a visual Windows tool to ease system configuration for Bluetooth Low Energy application development based on Quintic QN9020 platform.

The tool can make it easier to add, edit and delete the configuration data. Each configuration data consists of two parts. One is its actual value, and the other is its properties which describe and define the data. The users can edit the data value at the main window. At the property window, the users can add a new configuration data or delete an existing one, as well as define or modify its properties. Please note that for system pre-defined configuration data, the users can only edit the data value but have no authority to delete data or modify the data properties. For user-defined data, the users have full authority to edit or delete it, as well as share the data with others. The data value must conform to its properties.

The tool is also used to burn the configuration data to target chip, or dump it from the chip. There are two kinds of interfaces that the user can choose for connecting to the target chip: UART and SPI. Totally the storage size for the configuration data is 4KB on target chip. In fact, the storage location of configuration data is NVDS area in the flash.

2. Main Window

The main window is shown as in Figure 1.

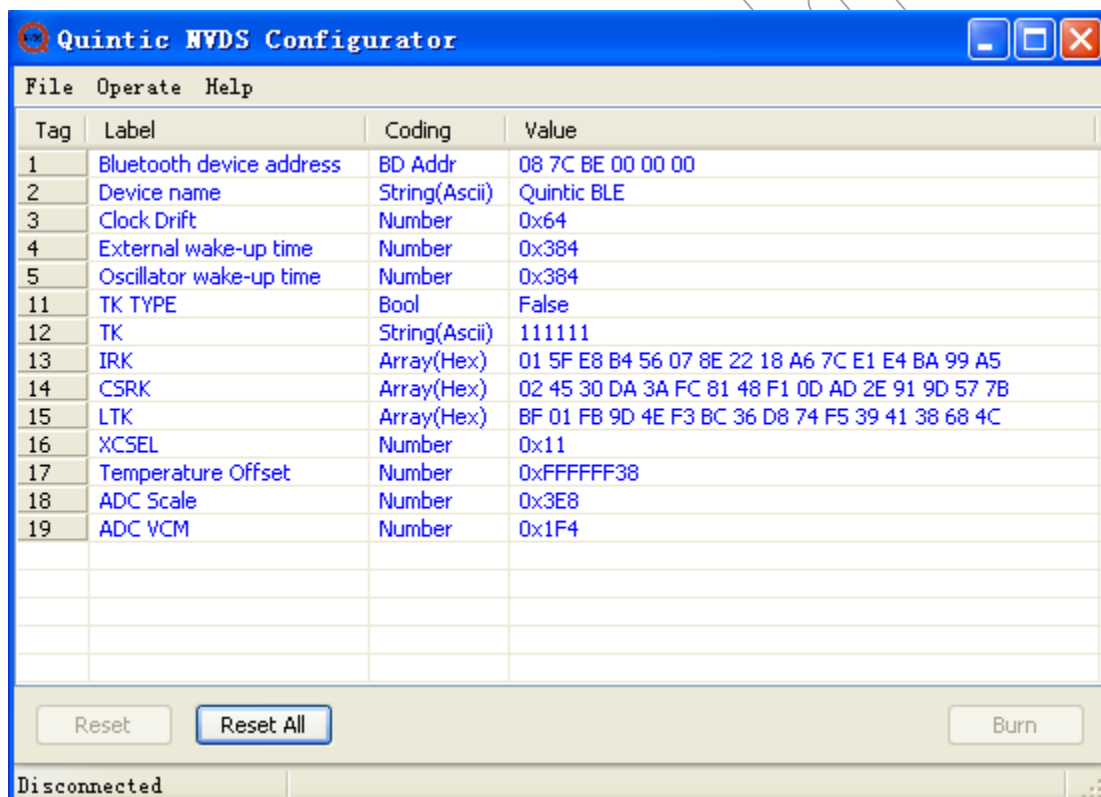


Figure 1 Main Window

The main window consists of four parts: menu bar, data list, shortcut buttons, and status bar.

Menu bar: All functions are listed on it.

Data list: All system-defined (blue font) and user-defined (black font) configuration data are listed in this area. Each column is described as below:

1. **Tag:** The identity number of each data.
2. **Label:** The label of each data, which is a short message to identify the tag.
3. **Coding:** The coding of value, five coding styles are provided to select as below:
 - **BD Addr:** Only used for local Bluetooth device address.
 - **String(Ascii):** Ascii string, and the length is limited. The string must be less than the limited length.
 - **Array(Hex):** Hexadecimal array, and it is MSB. It has length limit as well. The array length must be equal to limited length.
 - **Number:** Decimal or hexadecimal value, and it is little endian. Three types of number can be chose as uint8_t, uint16_t, uint32_t.
 - **Bool:** Only can select True or False.
4. **Value:** The value of configuration data.

Shortcut buttons: Buttons for convenient operation.

Status bar: Two status of data configuration process are provided. One is connected state (left), the other is the operating state (right).

3. Connect to Target

After we start the configurator, the connection window will prompt out as shown in Figure 2. Whenever you click the button “Connect” to make a connection, please press the reset button of the target chip on DK into boot mode. Otherwise the connection will not succeed.

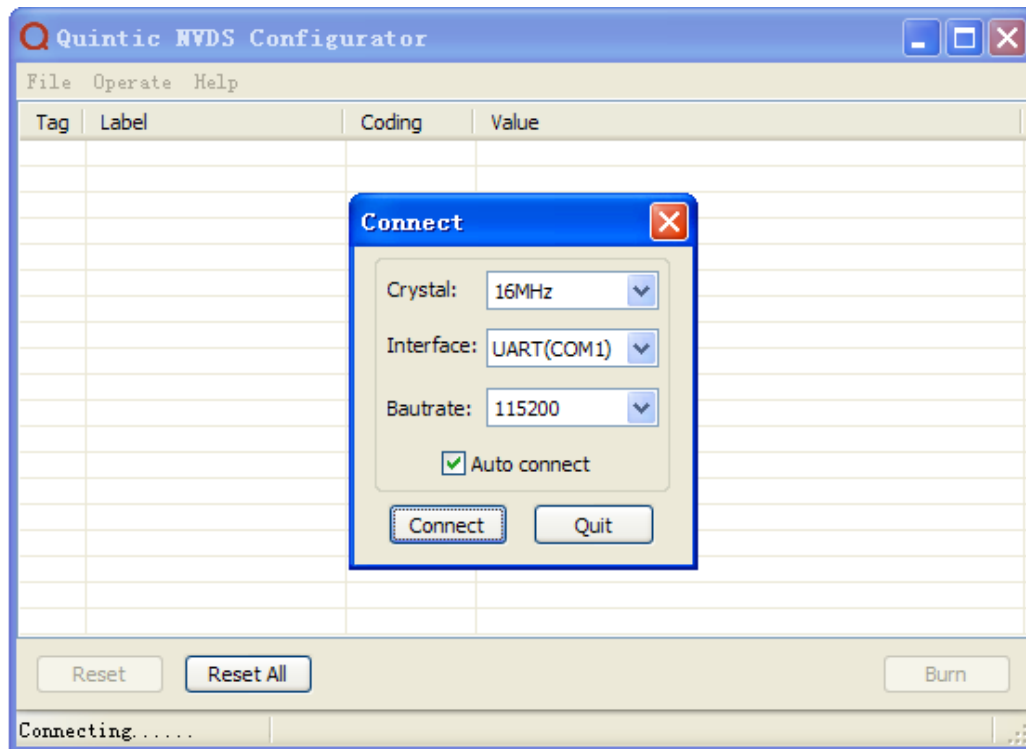


Figure 2 Connection Window

The topmost window is used to connect target chip. There are three parameters to select, which is described as below:

Crystal: The frequency of external crystal.

Interface: The interface of connecting to chip. This application can automatically enumerate the available serial port.

Auto Connect: if you check this, the selected crystal and interface will be re-used to connect the target chip automatically at the next time.

There are two ways to call the connection window:

1. Start the application, the connection window will be call automatically.
2. Click “Operate->Connect to target” on menu bar.

After setting those parameters correctly, click the “Connect” button to connect the target chip. The connection window will be changed to figure 3 which prompts that the software is waiting for the chip to connect. After reset or restart the target chip, the connection will be established. Please make sure that the cable is connected correctly.

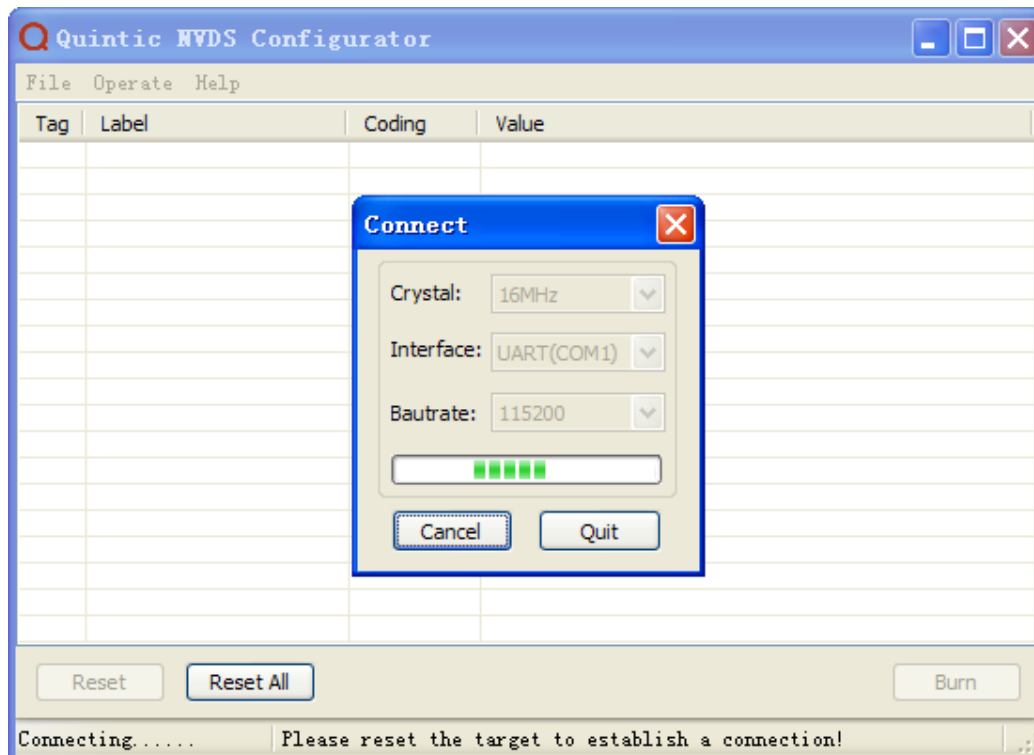


Figure 3 Connecting Process

If the connection is successful, the “Connect” window will be closed. The application will dump the configuration data from target automatically and the main window will prompt out as Figure 1. The data are dumped from the chip and listed in the main window.

4. Configure Data Value

This section introduces how to obtain, edit, burn and save the configuration data, and how to edit its properties as well. In main window, the configuration data value can be configured.

4.1 Obtain

There are two ways to obtain configuration data. One is to dump from target. The other is open a configuration file.

1. **Dump from target:**

After establishing a connection with target successfully, this function is effective. The dump function can dump the configuration data from target chip.

There are two ways to call dump function as below:

- i. After successful connection, application will dump data from target chip automatically.
- ii. Click “Operate->Dump from target” on menu bar.

If dumping is successful, the status bar will be shown as “success”, otherwise shows “error”.

2. **Open from file:**

Click “File->Open...” on menu bar that can obtain configuration data from the file. The extension name of the file is “.nvds”.

4.2 Edit

In main window, double click the value item to edit it. After reset, the value is set to its default state.

There are two methods to reset:

1. Reset tag: reset the data value of selected.
2. Reset all tag: reset all data value.

There are three ways to call reset function:

1. In main window, right click the item, a pop-up menu appears. Click “reset” or “reset all”
2. The shortcut buttons.
3. Click “Operate->Reset tag” or “Operate->Reset all tag” on menu bar.

4.3 Burn

When a connection is established with a target successfully, it is ready to burn the configuration data to the target chip.

There are two ways to call burn function as below:

1. Click the button “Burn” on shortcut buttons.
2. Click “Operate->Burn to target” on menu bar.

If the burning action is successful, the status bar will be showed as “success”, otherwise showed as “error”.

4.4 Save

This feature can back up the configuration data and share it with others. Click “File->Save as...” on menu bar that it saves the current configuration data to the file.

4.5 View Detail Properties

In main window, click the tag item that can evoke the properties window of the current tag which is shown in Figure 4. There are six primary properties.

1. **Description:** The detailed description of current tag.
2. **Coding:** The coding style of current value.
3. **Reset:** The reset value of current tag.
4. **Length:** The byte length of current value. When coding is BD Addr, String(Ascii), or Array(Hex), this is effective.
5. **Type:** The type of current value. Only when the coding is Number or Bool, this is effective.
6. **Range:** The range of current value. Only when the coding is Number or Bool, this is effective.

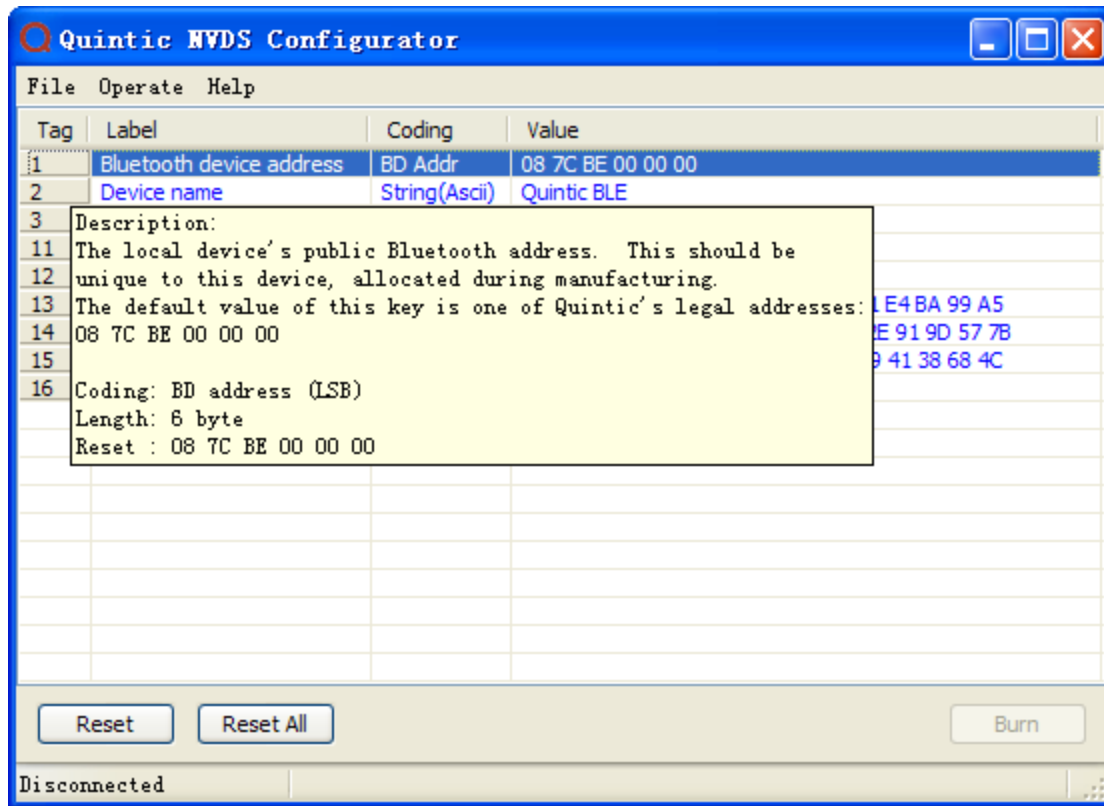


Figure 4 Viewing Properties

5. Configure Data Properties

This section introduces how to obtain, modify, delete, import and export the user-defined configuration data properties. The properties window is shown as in Figure 5.

The range of system-defined data is reserved as tag 1 ~ 99, and the available tag space to user is 100 ~ 254. All of these operations (obtain, modify, delete, import and export) are for user data properties, and the system-defined data properties are protected and read-only.

5.1 Obtain

When the application is installed, the system-defined data properties will be added automatically. The user-defined data and its properties must be added manually. The way of add new user-defined data and properties will be introduced next in **5.2 Edit**.

5.2 Edit

This feature can add a new configuration tag or delete, modify the existing tag in properties shown as in Figure 5. The way of triggering the window is to click “Operate->Edit user properties” on menu bar.

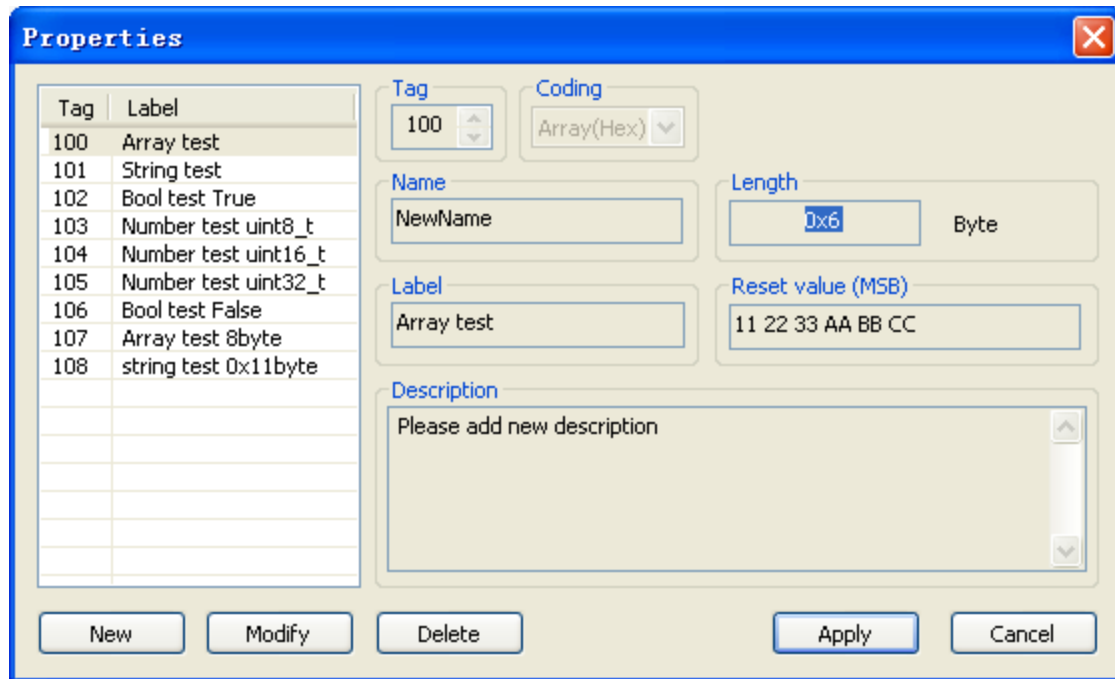


Figure 5 User-defined Properties Window

This window is divided into three parts: the list of existing tag (left), the detail of selected tag (right), the operation buttons (bottom).

The function of operation buttons is as below:

1. **New**
When adding a new tag to the existing tag list, it assigns an appropriate value to the number of tag automatically. After filling in the detail, please click the same button “Confirm” to save the new tag.
2. **Modify**
Modify the selected tag in the list of existing tag. After filling in the detailed attributes, please click the same button “Confirm” to save the modified properties.
The other way of modify properties is double click the tag in the existing data list.
3. **Delete**
Delete the data and properties of the selected tag.
4. **Apply**
Apply and save current changes.
5. **Cancel**
Give up the current changes.

5.3 Import and Export

This feature is helpful when the users want to share the user-defined configuration data with others. The extension name of import and export file is “.xml”.

Please use this feature by clicking “Operate->Import user properties” and “Operate->Export user properties” on menu bar. After importing the file, you can edit it in the window as Figure 5.

Release History

REVISION	CHANGE DESCRIPTION	DATE
0.1	Initial release	2012-12-10
0.2	Update window figures and corresponding descriptions	2012-12-26
0.3	Update figure 2&3, modify connect descriptions	2013-04-12
0.4	Update figure 1,2,3,4, modify some description	2013-05-07
0.5	Update figure 1	2014-01-10

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