

# **NPCA120 Nuvoton Bridge Logger User Manual**

**Nuvoton Bridge Logger version: 1.0.0.24**

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## **1 INTRODUCTION**

Nuvoton Bridge Logger is a GUI for monitoring the connection status between NPCA120 and the control board. The operations from DPS GUI will print by commands on the logger window.

## 2 NUVOTON BRIDGE LOGGER

### 2.1 Overview

Nuvoton Bridge Logger can be divided into two page: **Logger** and **System Configuration**.

In the Logger state, user can send the commands and export to a package of commands as a table, function by function. In the System Configuration state, there are some system related settings and audio path setting like audio mixer. User need to set all the configurations before DPS tuning.

Finally, all the data of algorithm and system configuration can be stored into the chip and can dump the existing data from chip as well. This is convenient for the user to save the DPS tuning results and system setting. There is no need to initialize the chip during the power-on stage.

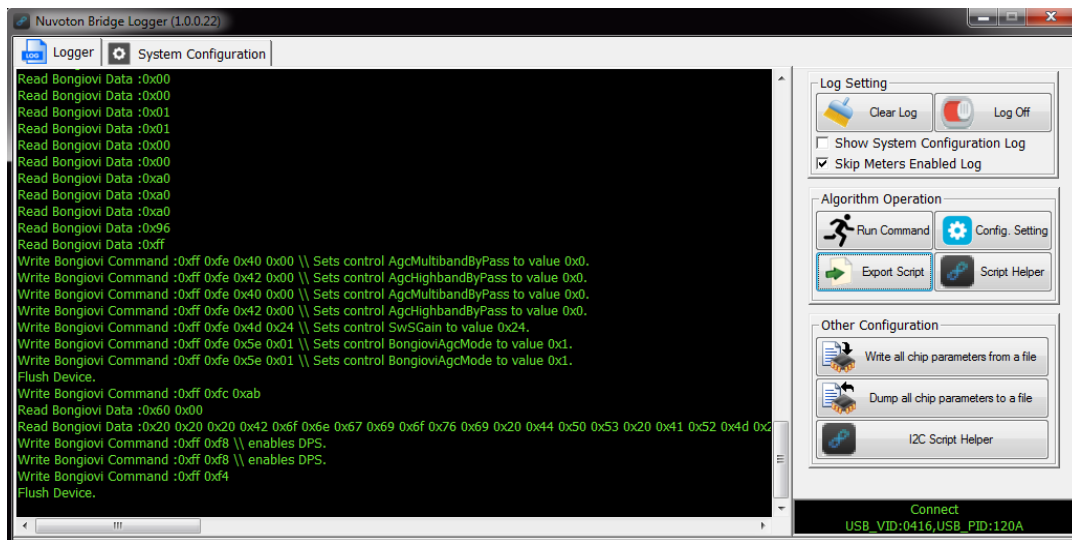


Figure 2.1-1 Nuvoton Bridge Logger main window(Logger page)

## 2.2 Logger functions

### 2.2.1 Log Setting

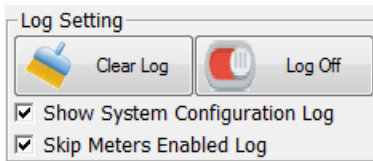


Figure 2.2-1 Log Setting icon

- **Clear Log** – Clear all the commands on the log window.
- **Log Off** – Turn off the function of printing out the commands on the log window.

### 2.2.2 Algorithm Operation

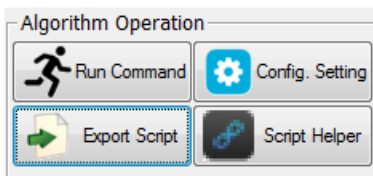


Figure 3.2-2 Algorithm Operation icon

- **Run Command** – Send the commands to chip and receive commands to chip directly.
- **Config. Setting** – Load the preset c file (exported from **Preset Manager** window) and the user can define the order of all of presets. Choose 10 presets out of 20 presets and store into data flash.
- **Export Script** – Export the commands into nbi file from logger window.
- **Script Helper** – Write the Bongiovi DPS commands and package all the commands into a nbi file.

### 2.2.3 Other Configuration

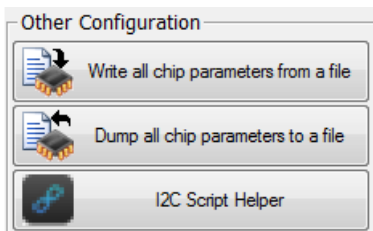


Figure 4.2-3 Other Configuration icon

- **Write all chip parameters from a file** – After the confirming the system configuration(finish Logger setting) and storing checked data to Data Flash(finish DPS setting), all the parameters can be packaged into bin file and then written into chip.
- **Dump all chip parameters to a file** – Dump all the parameter from chip and save as a bin file.
- **I2C Script Helper** – Write the Nuvoton bridge logger commands and package all the commands into a nbc file.

## 2.3 System Configuration

### 2.3.1 System Setting

- **Sample Rate** – 44.1KHz / 48KHz sampling rate selection.
- **I2C** – Slave address selection. User can have four address changes.
- **Input Clock** – Clock selection. Choose the crystal frequency, 12.288MHz or 11.2896MHz based on the mounted crystal of chip.

### 2.3.2 Audio path setting

- **Device type** – Optional USB or I2S device can be set the function of device enable or disable. Word size selection: 16-bit, 24-bit and 32-bit.
- **Input/Output MUX** – USB or I2S device multiplexer.
- **Input/Output Gain** – Gain controller.

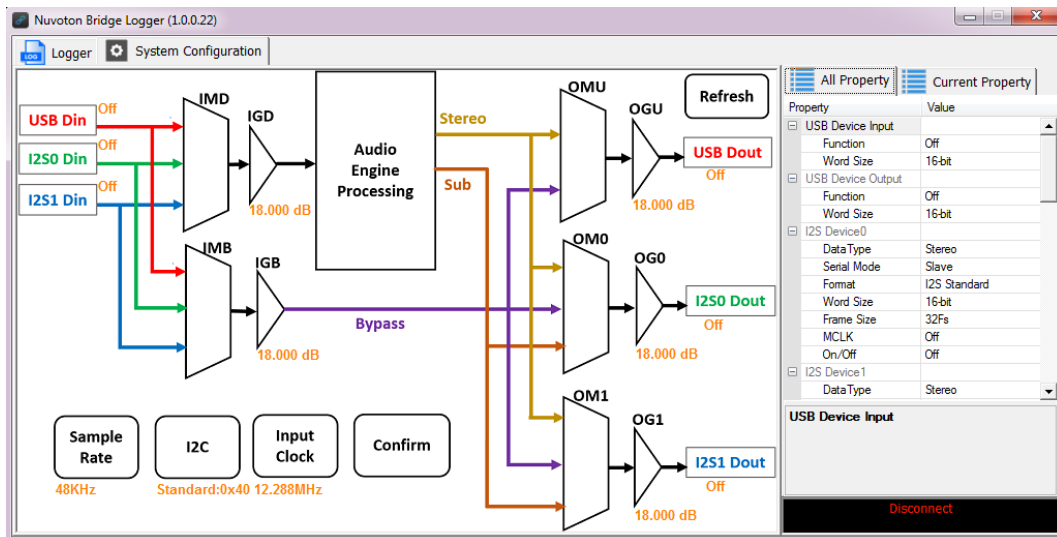


Figure 2.3-1 Nuvoton Bridge Logger main window(System Configuration page)

### Path setting Example

For a example, if the user want to set the audio path like this : Input from USB, processed by Bongiovi DPS(Audio Engine Processing) and output go through I2S0. Below is the specific step for setting the correct audio path :

- Click **USB Din** → move to **Current Property** on the right side → click the **Value** of **Function** → Select “on”.
- Click **IMD** → move to **Current Property** on the right side → click the **Value** of **Input Multiplexer for DSP** → Select “USB”.
- Click **IGD** → move to **Current Property** on the right side → click the **Value** of **Input Gain for DSP Path** → Select “0”.
- Click **OM0** → move to **Current Property** on the right side → click the **Value** of **Output Multiplexer for I2S0** → Select “DPS Stereo”.
- Click **OG0** → move to **Current Property** on the right side → click the **Value** of **Output Gain for DSP I2S0** → Select “0”.
- Click **I2S0 Dout** → move to **Current Property** on the right side → Set all the **Value** of **I2S Device0** one by one according to the applications.

## 2.4 General Setting

While the user want to operate the Nuvoton Bridge Logger GUI for some adjustment. There are some steps that need to be noted. This section will guide the user how to operate those GUI step by step and how to operate it with DPS Profile Creator.

### 2.4.1 Open DPS Logger

Open DPS Profile Creator software → Find **Platform** in upper menu → Select **Nuvoton Bridge** → Select **Open DPS Logger** then click → Nuvoton Bridge Logger window will pop out.

Find **Platform** in upper menu again → Select **Nuvoton Bridge** → Select **DPS Connect** then click → Connection Setting window will pop out then click “**OK**” (default timeout : 500 msec) → Connection info will show up on both of DPS Profile Creator(lower left corner of main window) and Nuvoton Bridge Logger(lower right corner of main window).

### 2.4.2 Confirm System Configuration

At the Bridge Logger window, switch to **System Configuration** page and then check the system setting at the bottom and the audio path setting at the top.

After confirming all the setting is no problem then click “**Confirm**”. The software will reconnect and will show up the connection info again.

In this step, all the setting of System Configuration will be stored in data flash, occupy half of the data flash size.

### 2.4.3 Start audio tuning on DPS and save tuning data

After the above two steps, user can start the audio tuning on DPS Profile Creator. When the tuning is finished or the user wants to save the tuning setting at any time, the user need to operate the **Preset Manager** and the step are shown below.

Find **Platform** in upper menu → Select **Nuvoton Bridge** → Select **Preset Manager** then click → Preset Manager window will pop out.

At the Preset Manager window. Export the tuning results in remote platform area by both of c file and bgs file.

### 2.4.4 Store DPS tuning data to Data Flash

Back to Bridge Logger window, Logger page. There are two ways to store the DPS tuning data to the chip. One is click **Config. Setting** in Algorithm area → **Open** the c file exported in the previous step then setting the config order according to the user. Choose one of the preset as default(means the setting will be adopted while power-on) and then click **Store Checked Config to DataFlash** to update the data flash

In this step, all the data of DPS tuning will be stored in data flash, occupy the other half of the data flash size.

The other one is getting the existing BIN file and then click **Write all chip parameters from a file** in Other Configuration block to update the data flash of the chip. This BIN file already contains System Configuration setting and DPS tuning data.



## 3 REVISION HISTORY

Date	Revision	Description
2019.06.06	0.1	1 <sup>st</sup> version release
2019.06.11	0.2	Modify typo
2019.06.12	0.21	Modify document format
2019.10.02	0.3	Modify document format

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