User Manual of the
Bandwidth Calculator Software
(V1.0)

Thank you for purchasing our product. This manual applies to Bandwidth Calculator software, please read it carefully for the better use of this software. The contents in this manual are subject to change without notice.

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Chapter 1 Introduction

1.1 Overview

The Bandwidth Calculator software can be used to calculate the bandwidth needed when the device is in main stream live view, sub-stream live view or main stream playback, and calculate the recommended encoding parameters when the bandwidth and the other conditions of the device are given.

1.2 System Requirements

Operating System: Microsoft Windows XP / Windows 2003 32-bit, Windows 7 / Windows 2008 32-bit or 64-bit
CPU: Intel Pentium IV 3.0 @ 3.00 GHz or above
RAM: 512M or above
Display: 1024*768 resolution or above

1.3 Conventions

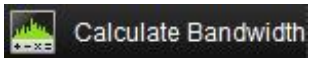
In order to simplify the description, we define the “Bandwidth Calculator software” as “software” in the following chapters.

1.4 Version Information

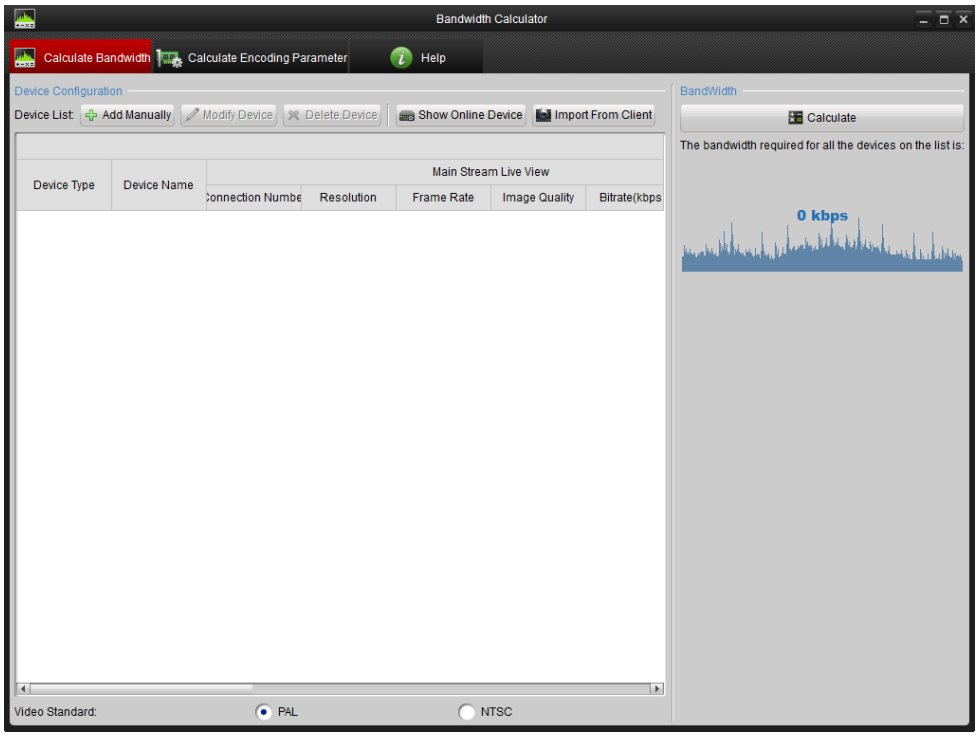
After installing the software successfully, run the software and click 

to view the version information of the software.

Chapter 2 Bandwidth Calculation

Click the 

tab to enter the Calculate Bandwidth interface, shown as follows:



2.1 Adding the Device

Purpose:

Before any operation, you need to add the device to the device list. The software provides three ways for adding the device: adding manually, adding online devices and importing from client.

Before you start:

You can select the video standard as PAL or NTSC at the bottom of the main interface as shown below:

Notes:

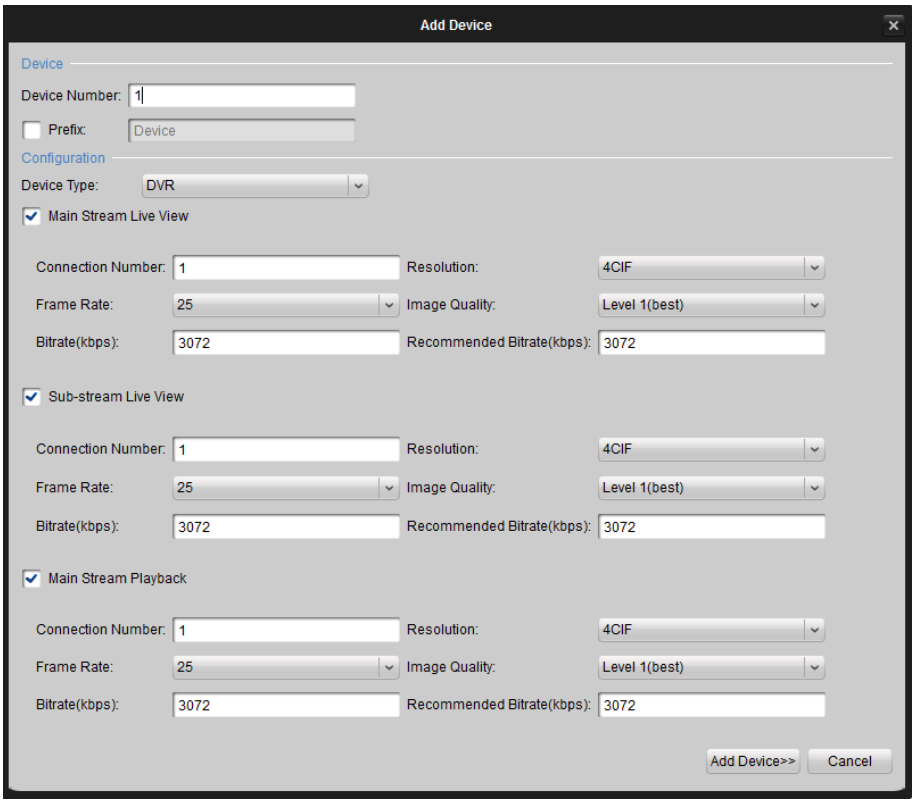
1) The software supports only DVRs and IPCs.
2) Up to 1024 devices can be added to the device list.
3) The client refers to iVMS-4200 client software.

2.1.1 Adding Manually

Perform the following steps to add the device manually.

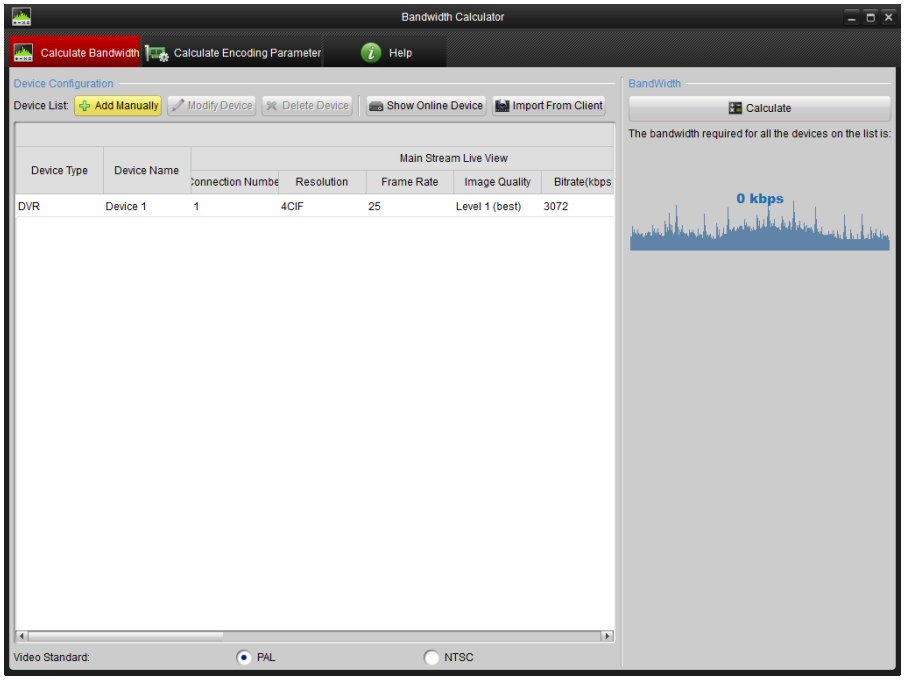
Steps:

1. Click **Add Manually** button, and the Add Device dialog box pops up.



2. Input the device number and you can also set the device prefix as desired by checking the 

checkbox.
3. Configure the device parameters including device type, connection number, resolution, frame rate and so on. For detailed information, please refer to *Section 2.2 Configuring the Device*.
4. Click **Add Device** button to add the device.
5. Click **Cancel** button to exit the dialog box. And the device will be displayed on the device list.

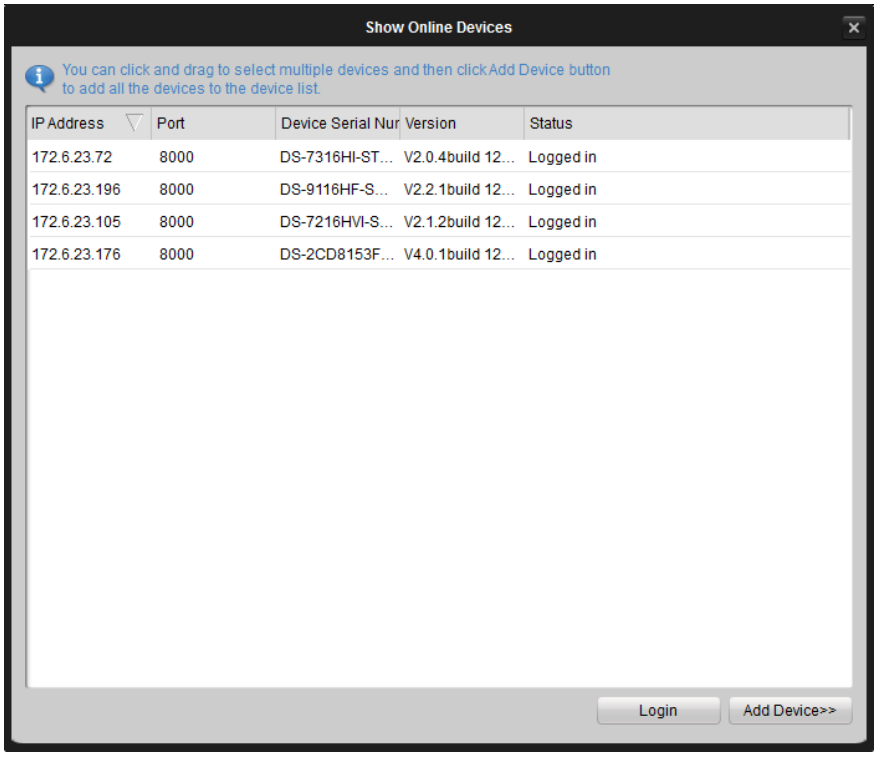


2.1.2 Adding Online Devices

Perform the following steps to add online devices.

Steps:

1. Click **Show Online Device** button and the active online devices within the same subnet with the software will be displayed on the list.

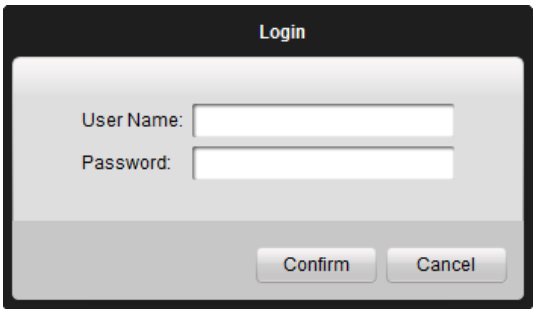


Notes:

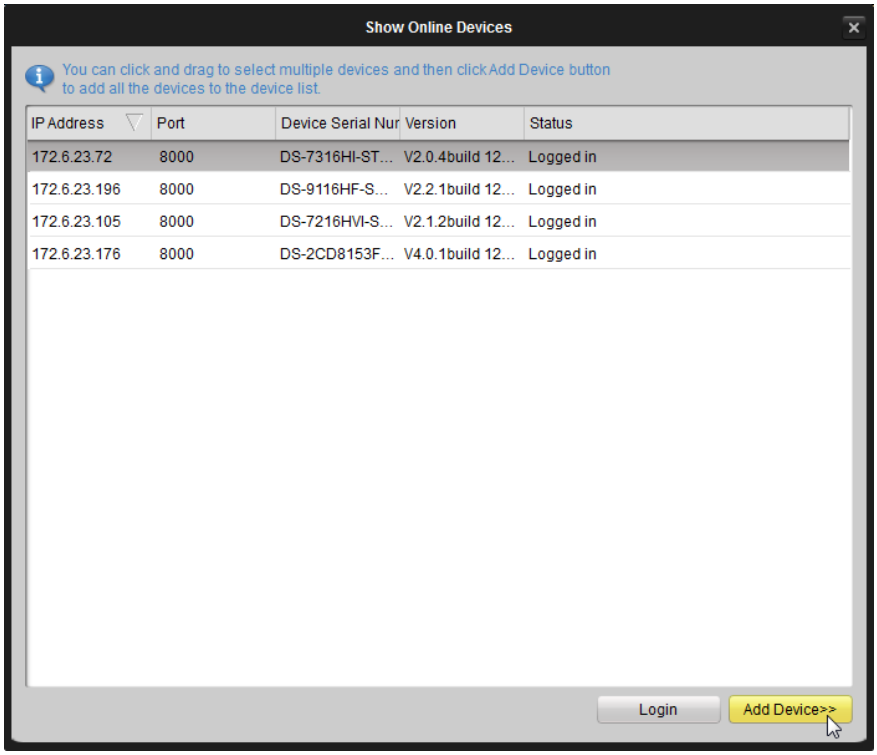
1) The software will log in the online devices automatically by the user name of *admin* and

the password of *12345*.

2) You are also allowed to log in the device manually: Select the device and click **Login** button. And then input the user name and password of the selected device and click **Confirm** button.

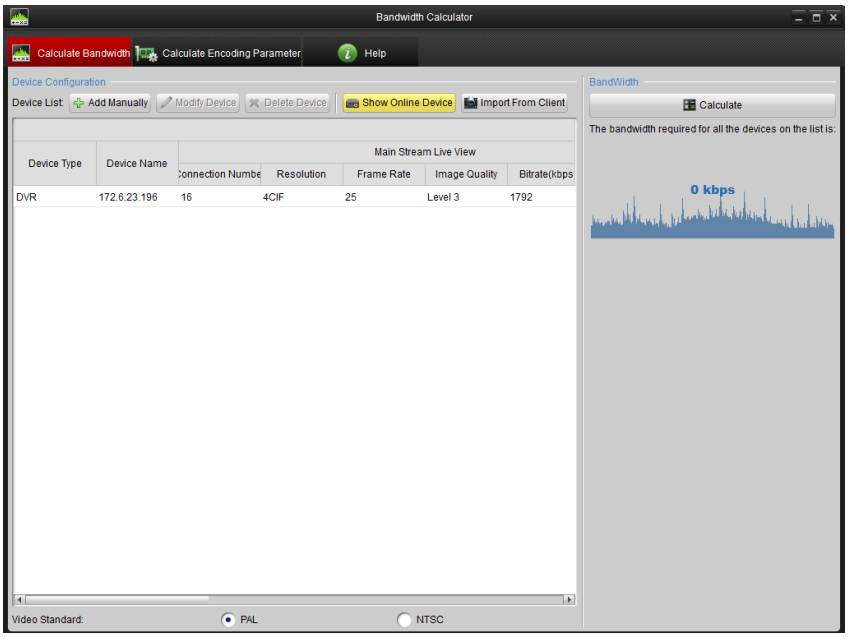


2. Click to select the device on the list and then click **Add Device** button to add the selected device.



Note: You can click and drag to select multiple devices and then click **Add Device** button to add all the selected devices to the device list.

3. Click the icon  to close the Show Online Devices interface. And the device added will be displayed on the device list.



2.1.3 Importing From Client

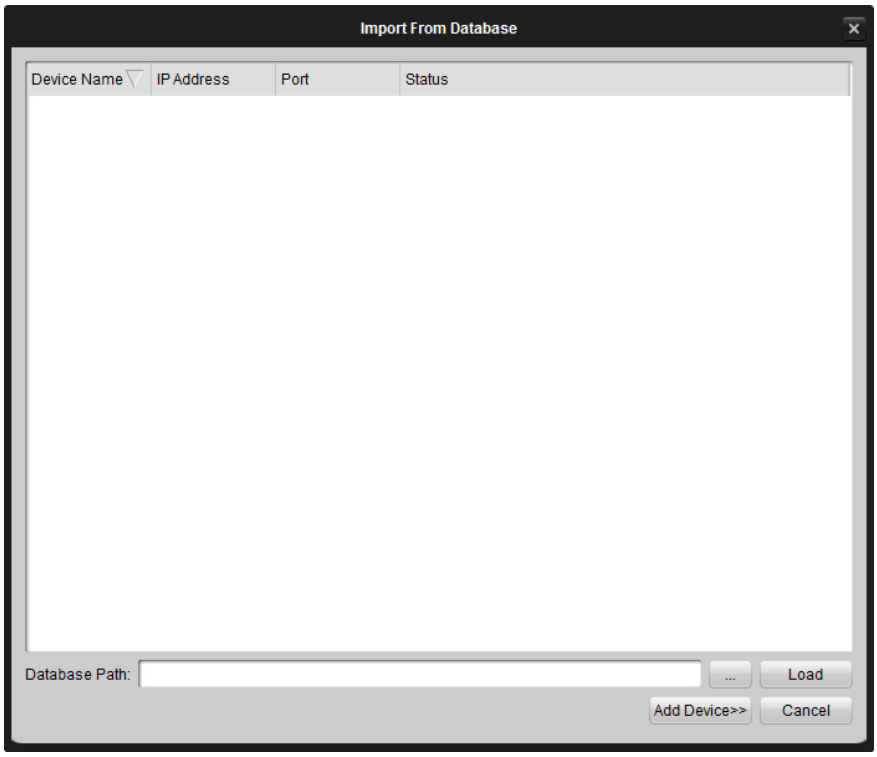
Before you start:

The database file "NetSys.db" needs to be exported from the iVMS-4200 client software. For detailed information, please refer to *iVMS-4200 Client Software User Manual*.

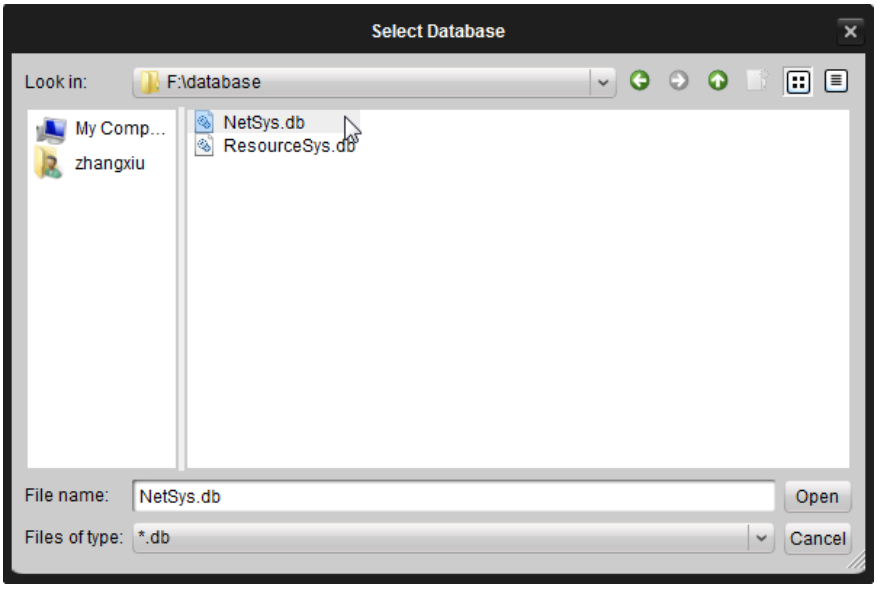
Perform the following steps to import and add the device from the client software.

Steps:

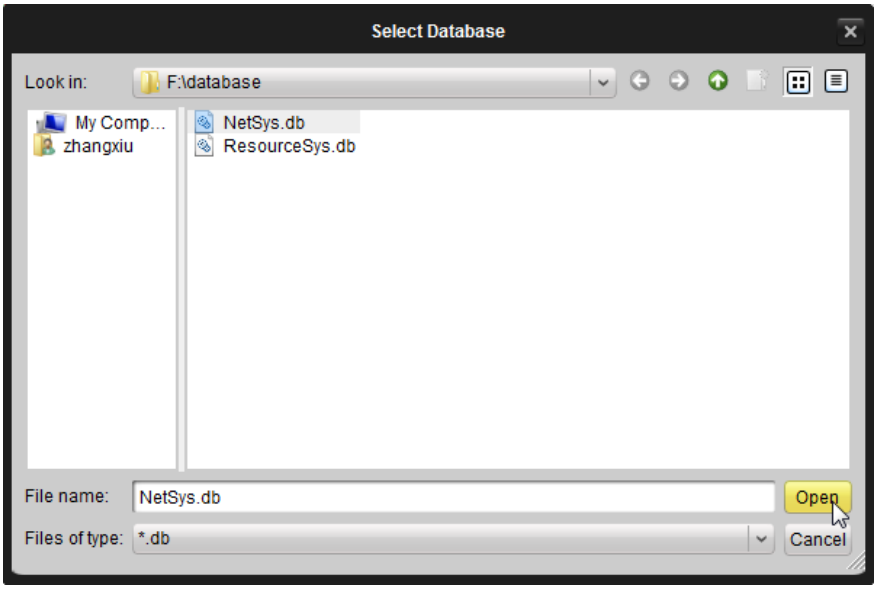
1. Click **Import From Client** button, and the Import From Database interface shows up as follows:



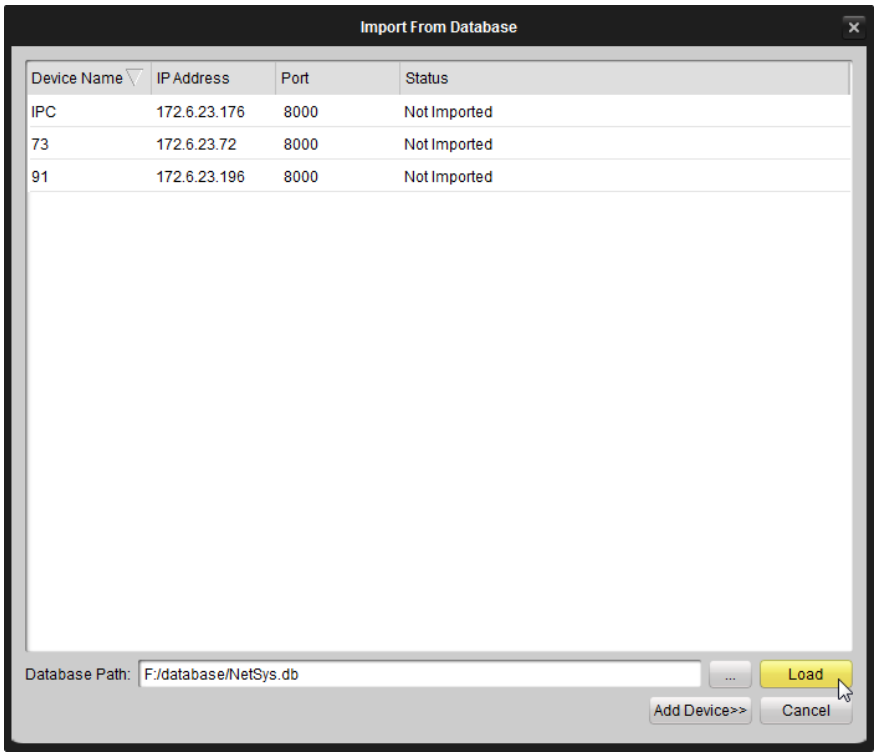
2. Click the icon ... and select the path of the database file “NetSys.db” exported from the client software.



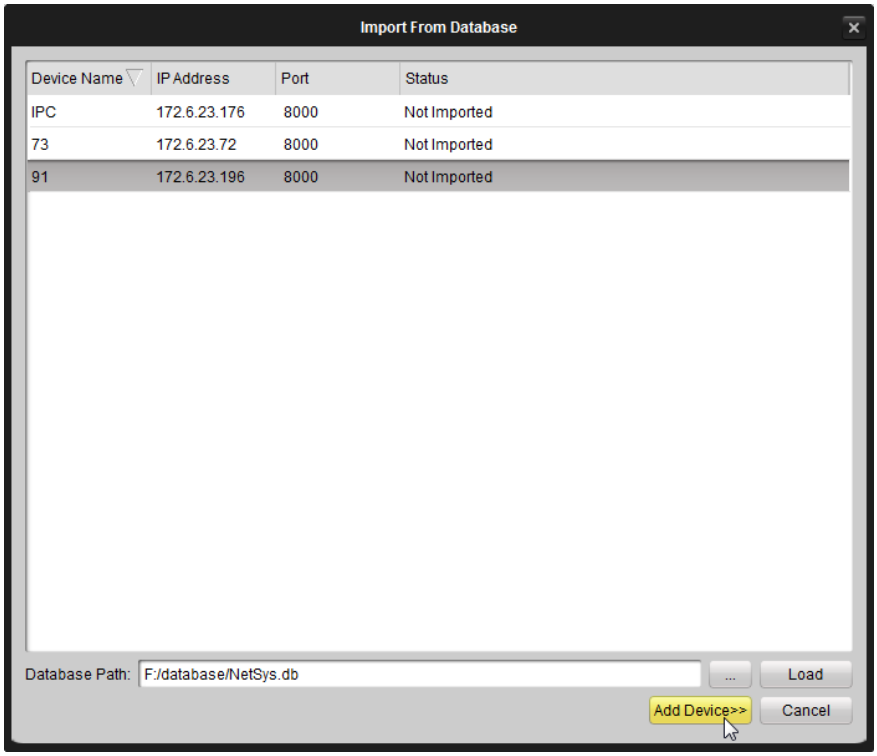
3. Click **Open** button to open the database file and close the Select Database window.



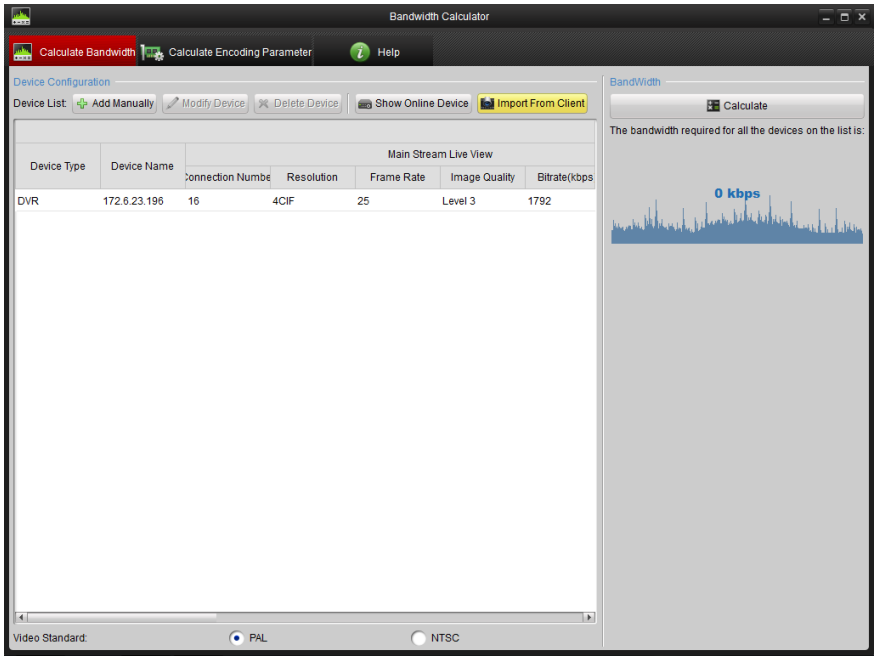
4. Click **Load** button to load the database file and you can check the status of the device on the list.



5. Click to select the device and then click **Add Device** button to add the selected device to the device list.



6. Click **Cancel** button to exit the Import From Database interface and the device is added to the device list shown below:



2.2 Configuring the Device

Purpose:

The software supports configuration of the devices on the device list. You can configure the device type, connection number, resolution, frame rate and so on. The video standard is also selectable.

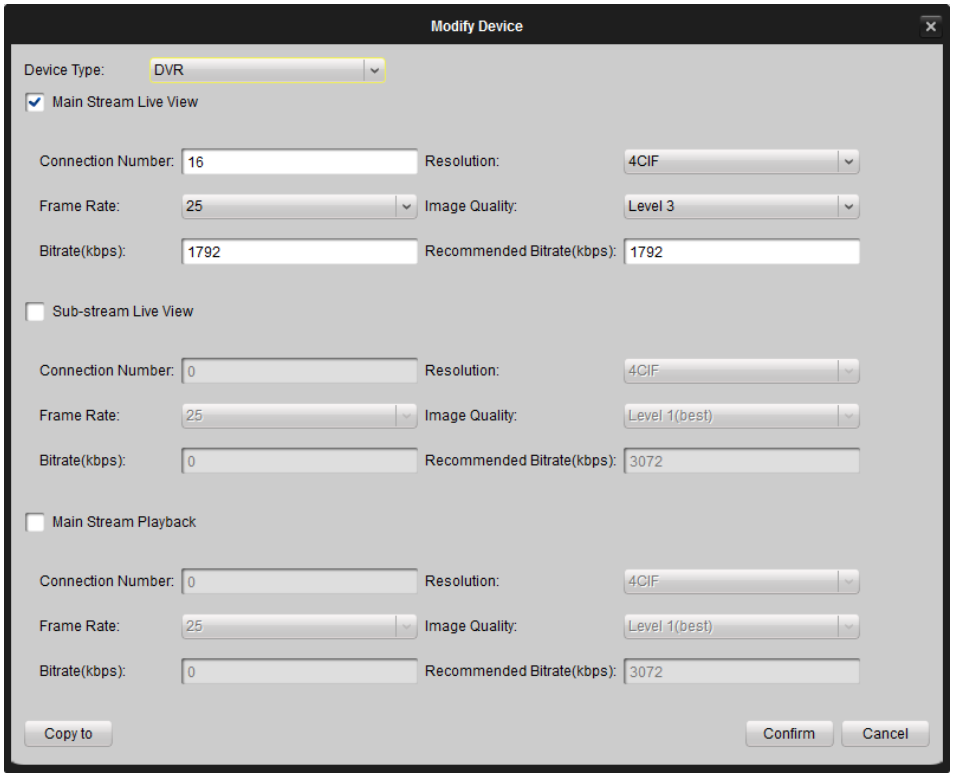
Before you start:

The device needs to be added to the device list for device configuration. You can select the video standard as PAL or NTSC at the bottom of main interface as shown below:

Perform the following steps to configure the device on the device list.

Steps:

1. Select the device on the device list and click **Modify Device** button, or just double-click the device on the list. The Modify Device dialog box pops up shown below:



2. Click the icon  and select the device type in the drop-down list. Only DVR and IPC are selectable.
3. Select the working mode of the device by checking the corresponding checkbox.
   Note: The software provides 3 working modes for the device: main stream live view, sub-stream live view and main stream playback.
4. Configure the parameters in each selected mode. Please refer to the following table for details.
   Description of Device Parameters:

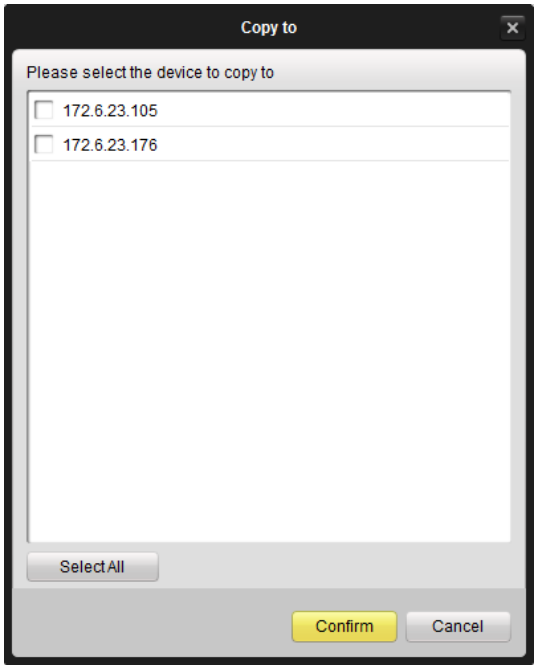
Device Parameter	Description
Connection Number	The connection number refers to the number of streams that the device sends to the client for live view or playback.
Resolution	For DVRs, the resolution can be selected as 4CIF, 2CIF, CIF or QCIF. For IPCs, the resolution can be selected as 2560*1920, QXGA (2048*1536), 1080P and so on.
Frame Rate	The frame rate ranges from 1/16 to 25 in PAL format and from 1/16 to 30 in NTSC format.
Image Quality	6 levels of image quality are provided, including Level 1 (best), Level 2, Level 3, Level 4, Level 5 and Level 6.
Bitrate	The bitrate adopts the recommended bitrate by default. And it also can be customized.
Recommended Bitrate	The software calculates and displays the recommended bitrate automatically after other parameters are set.

Notes:

1) The Image Quality is invalid when the device type is selected as IPC.
2) The Bitrate ranges from 32 to 16384.

5. Click **Confirm** button to save the new configurations and close the dialog box.

You can click **Copy to** button to copy the new configurations to the other devices on the list.



Select the device to copy to by checking the corresponding checkbox and you are also allowed to select all the devices by clicking the **Select All** button.

To delete the device added, select the device on the list and click **Delete Device** button. Then the selected device will be deleted.

2.3 Calculating the Bandwidth

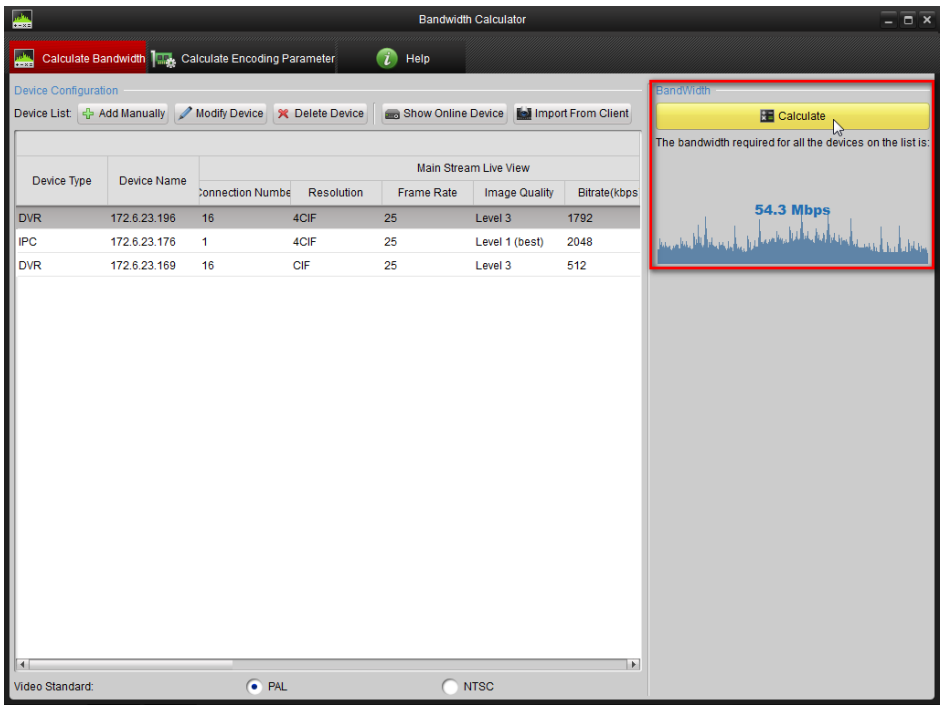
Purpose:

The bandwidth needed for the device can be calculated when the device is in main stream live view, sub-stream live view or main stream playback.

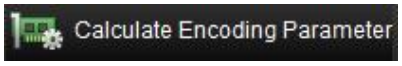
Perform the following steps to calculate the bandwidth.

Steps:

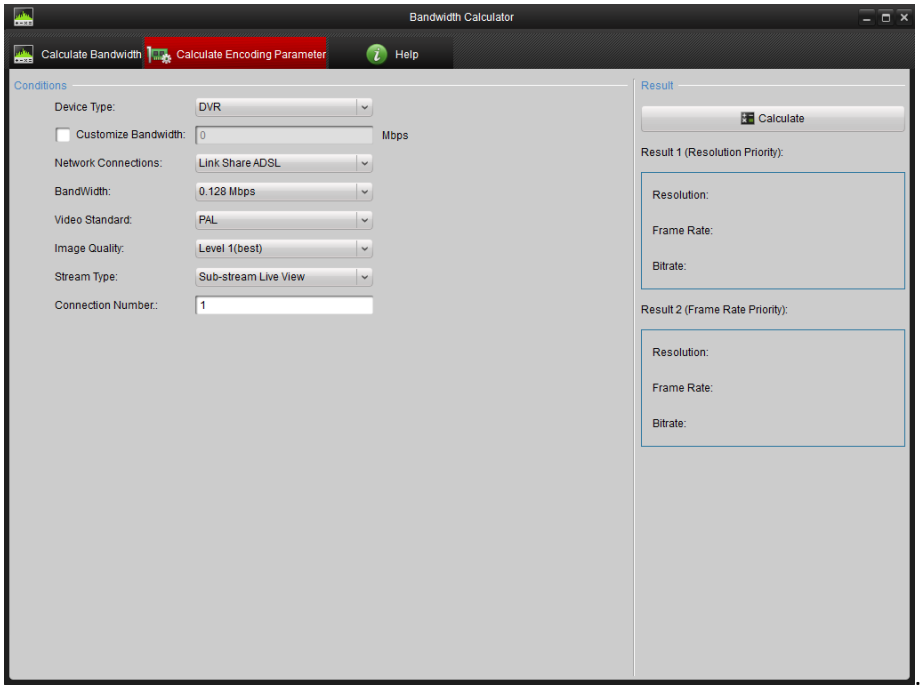
1. Add the device to the device list and configure the corresponding device parameters. For details, please refer to *Section 2.1 Adding the Device* and *Section 2.2 Configuring the Device*.
2. Click **Calculate** button and the bandwidth required for all the devices on the list is displayed shown as follows:



Chapter 3 Encoding Parameters Calculation

Click the 

tab to enter the Calculate Encoding Parameter interface shown as follows:



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3.1 Setting the Conditions

Purpose:

The conditions of the device need to be set for the encoding parameters calculation.

Perform the following steps to set the conditions.

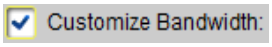
Steps:

1. Click the icon  and select the device type in the drop-down list. Only DVR and IPC are selectable.
2. Configure the parameters of the device condition. Please refer to the following table for details.

   Description of device condition parameters:

Parameter	Description
Network Connections	The software supports 6 types of network connections: Link Share ADSL, Dedicated ADSL, SDSL, Cable Modem, T1 and Ethernet.
Bandwidth	Different ranges are provided for different network connections. The bandwidth can also be customized.
Video Standard	You can select the video standard as PAL or NTSC.
Image Quality	6 levels of image quality are provided, including Level 1 (best), Level 2, Level 3, Level 4, Level 5 and Level 6.
Stream Type	The stream type can be selected as main stream live view or sub-stream live view.
Connection Number	The connection number refers to the number of streams that the device sends to the client for live view or playback.

Notes:

1) To customize the bandwidth, you can check the 

checkbox and then input the bandwidth value in the text field as desired.
2) The Image Quality is invalid when the device type is selected as IPC.

3.2 Calculating the Encoding Parameters

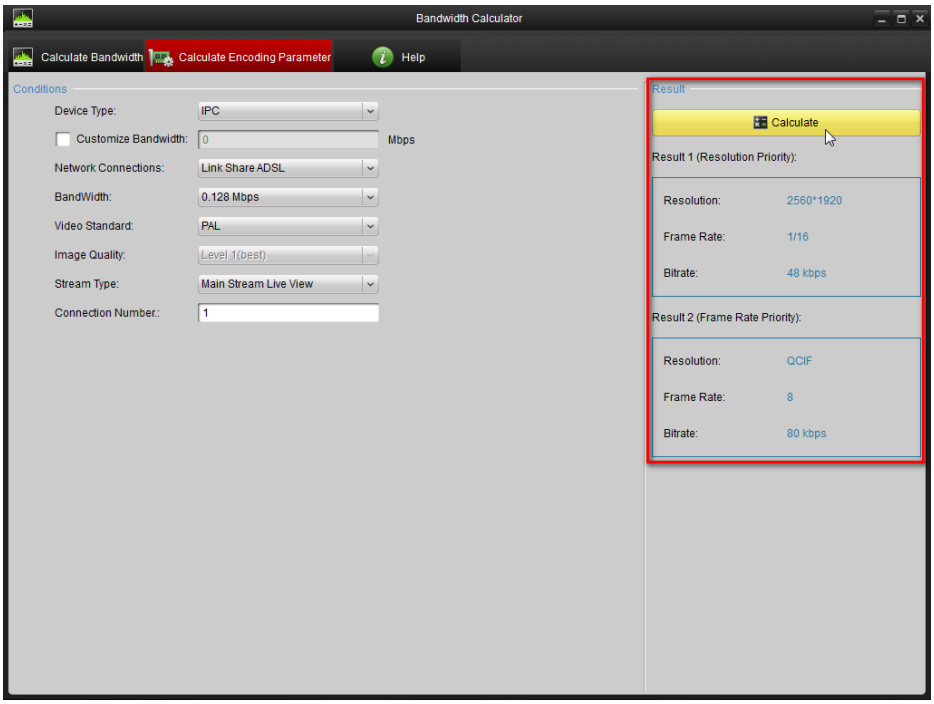
Purpose:

The recommended encoding parameters can be calculated after the device type and the device conditions are set.

Perform the following steps to calculate the encoding parameters.

Steps:

1. Select the device type and set the device conditions. For detailed information, please refer to *Section 3.1 Setting the Conditions*.
2. Click **Calculate** button and the results will be displayed as follows:



Note: Two kinds of results are provided: Result 1 (giving priority to the resolution) and Result 2 (giving priority to the frame rate).