

DB Tool User Manual

(V1.5)

Revision History

Rev.	Revised Date	Content Revised
1.0	Mar 10, 2008	Draft by ShawnFeng
1.1	Mar 12,2008	Add installation chapter
1.2	Mar 20,2008	Modify installation chapter
1.3	Mar 31,2008	Add SSU2CRD.exe chapter
1.4	Oct 27, 2009	Modify User Manual for DB Tool 1.2.5
1.5	Dec 16, 2009	Add three new functions, 1.Modify SSU information header to disable checking rule, 2.Create a shared bank SSU, 3.Manufacture Auto SSU.

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1. The Function of DB Tool

- 1). Display/Save the STB information when user connects to STB.
- 2). Upload/Download data file from/to STB
- 3). Update the Wallpaper of STB.
- 4). Update the Power on/TV/Radio Logo of STB.
- 5). Update/Edit the Database/Default Database of STB.
- 6). Convert user database to default database or convert default database to user database.

2. Install DB Tool

Before installing DB Tool, we should uninstall previous installation by select from Start Menu->Programs->Ctk DB Tool->Uninstall.

The software which is release to user is a setup package. When running CTK DBTool Setup.exe, the software will be installed on PC automatically.

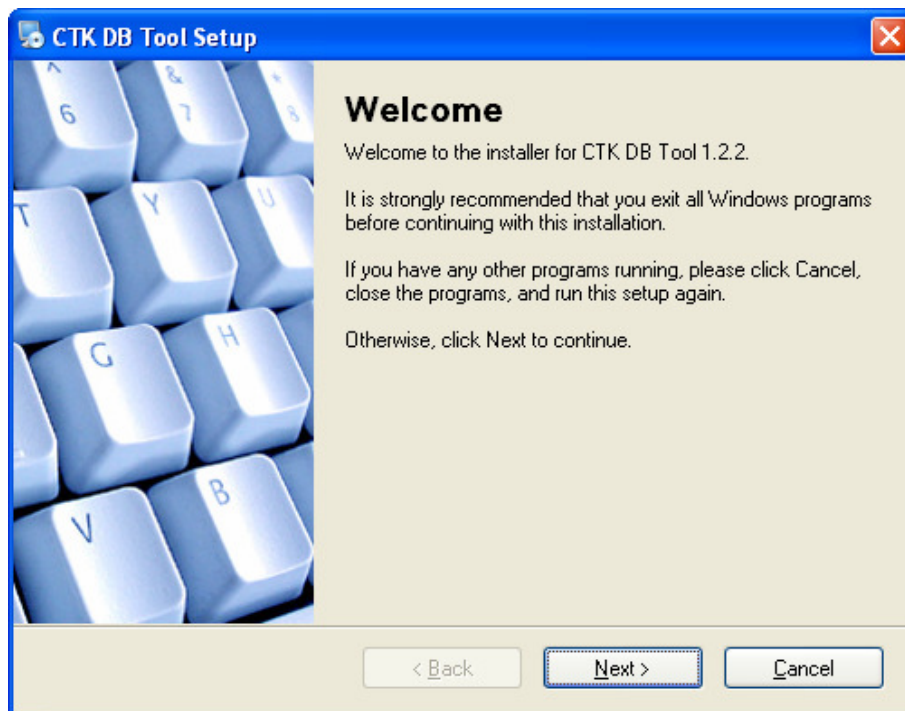


Figure 1. Installation UI

Figure 1 is the windows of CTK DB Tool setup. The whole installation procedure will cost about one minute.

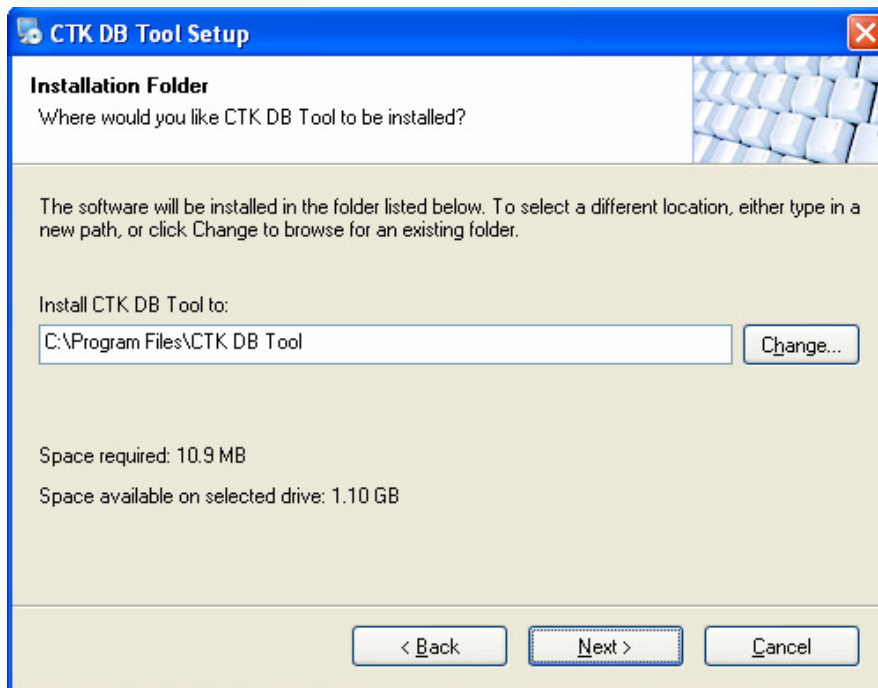


Figure 2. Installation Path

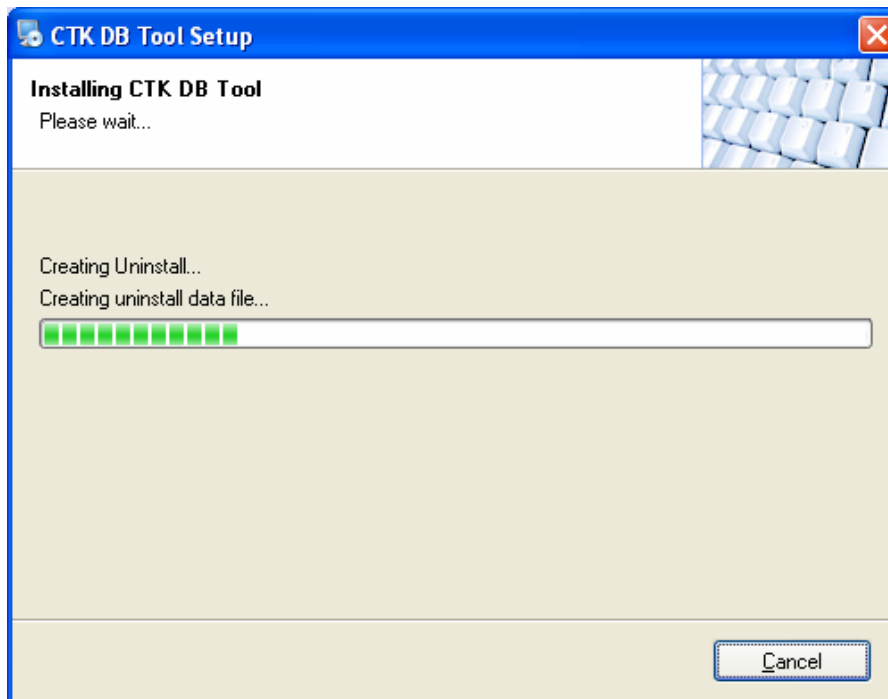


Figure 3. Installation Progress Bar

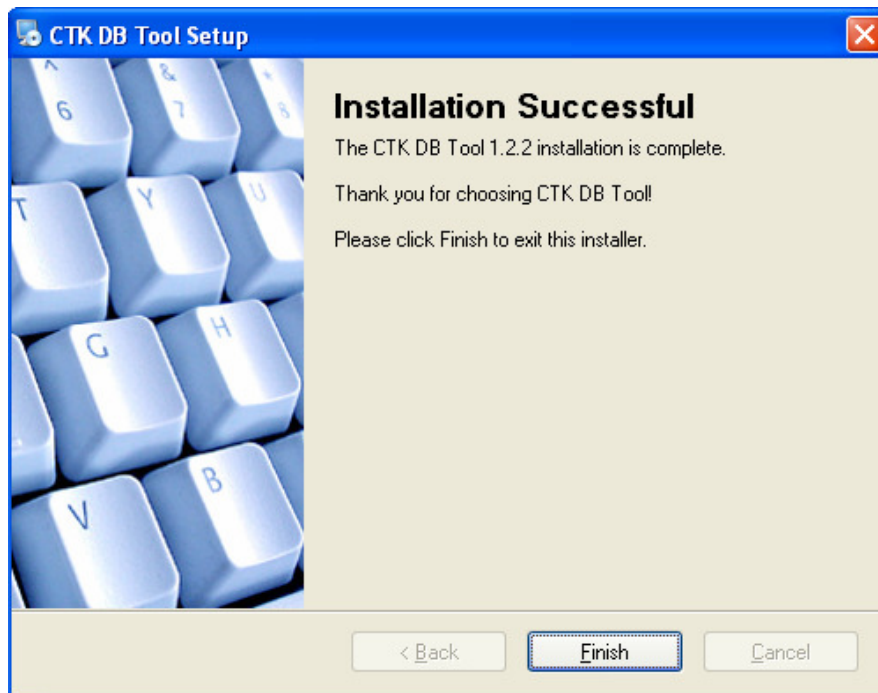


Figure 4. Installation success

3. Open a SSU File

The DB Tool support upload/download 13 types SSU file. But only 5 of 13 can be opened by this tool. They are Wallpaper, Power on Logo, TV Logo, Radio Logo, Default Database and Database files.

When we open a SSU file is not within the five types. DB Tool will show a message box as Figure 5.

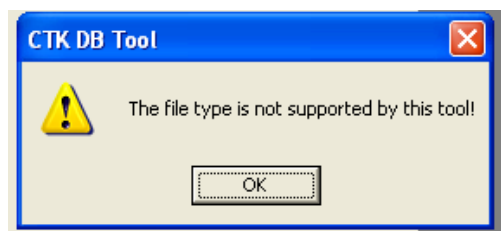


Figure 5. Open SSU fail dialog

That means the file type can not be edited by this tool.

The detail of upload/download file will be introduced at chapter 6.

4. The Outline of DB Tool

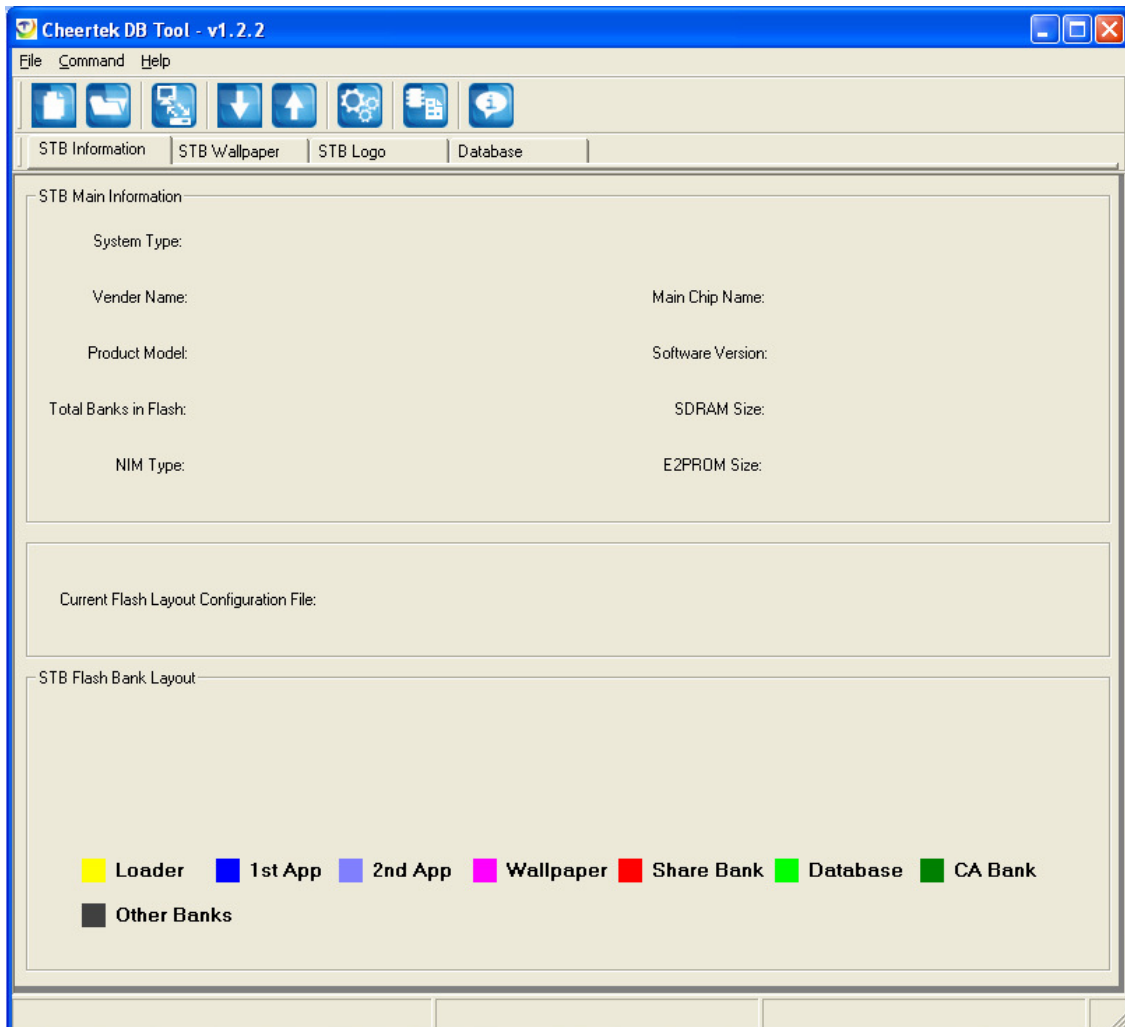


Figure 6. DB Tool main window

Figure 6 is DB Tool's main frame. We can communicate with STB or get data by click toolbar button.

5. Connect/Disconnect to/from STB

When we want to get STB information, we should connect with STB by serial cable first. By click menu item: Command| Connect to STB or Connect button on toolbar, DB Tool will connect to STB after a few seconds.

Just as Figure 7

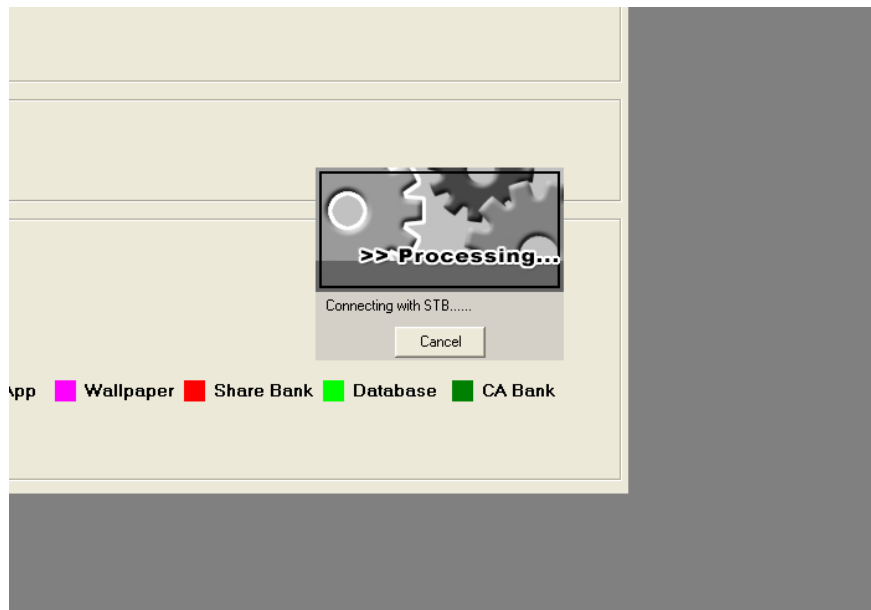


Figure 7. DB tool connect waiting

After connecting with STB, some information will display on STB Information Form. It includes Chip Type, System Type, Software Version, NIM Type, FLASH Size, SDRAM Size, FLASH Layout and so on.

Just as Figure 8

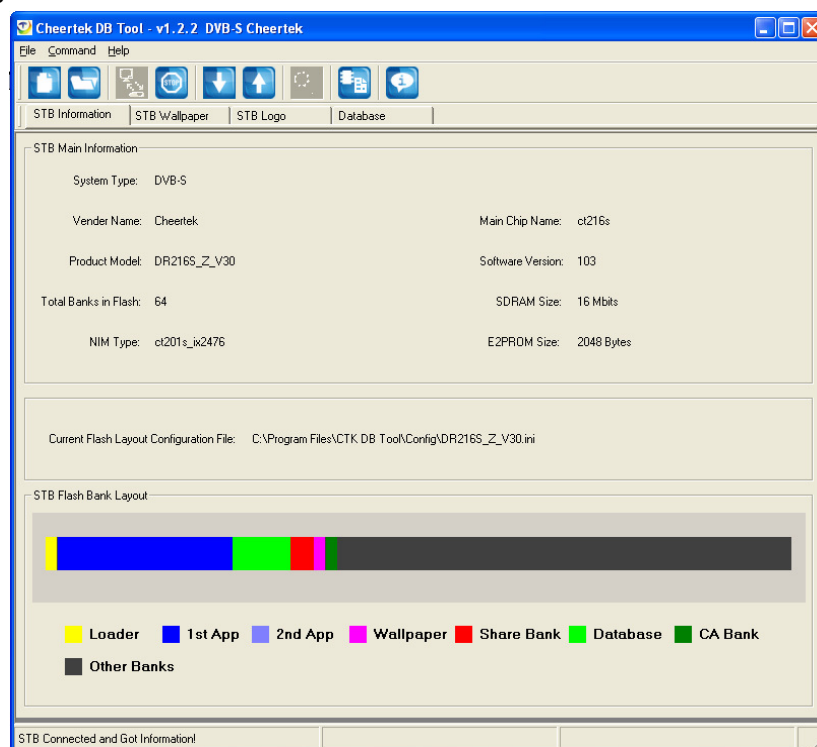


Figure 8. STB main information


We can also change the serial port setting by click  button on toolbar. It will be disabled as soon as DB Tool connects to STB.

Figure 999 is the serial port setting dialog.

The DB Tool communication setting is just as follow:

Baud Rate: 115200 bps

Data Bits: 8 bits

Parity: None

Stop Bits: 1 bit

Handshake: None

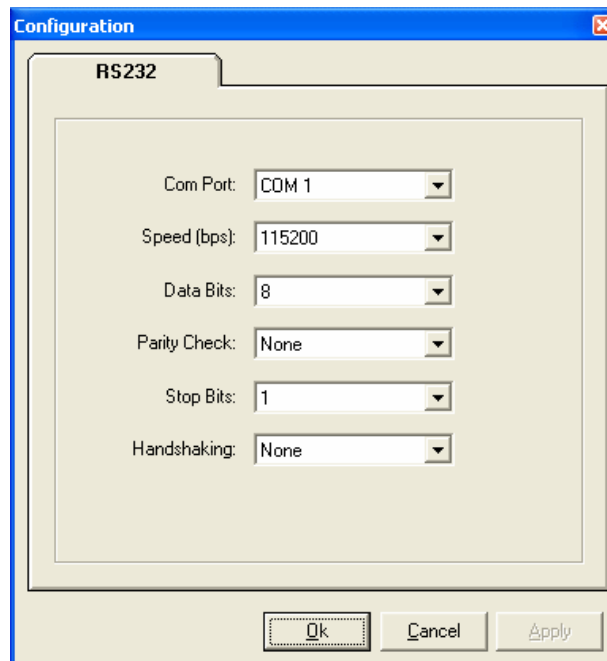




Figure 9. RS232 configuration dialog

6. Upload/Download File from/to STB

When connect to STB, we could get or update STB data by click menu item: Command | Send file... or Receive file.... The toolbar button  can do download operation, and toolbar button  can do upload operation.

When clicking download operation, we can select aim file from a file list dialog and start to download process. Just as Figure 10.

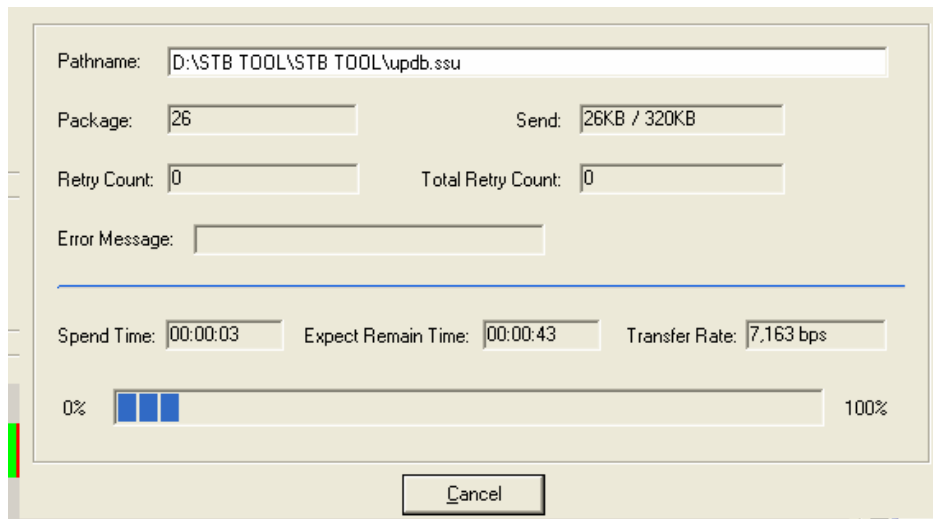


Figure 10. Download/Upload progress dialog

If we click upload button, a file type select dialog will be shown. We can select the type of upload file with the dialog. Just as Figure 11.

We can do upload/download operation at any time once DB Tool connect to a STB with cheer_s or cheer_t system.

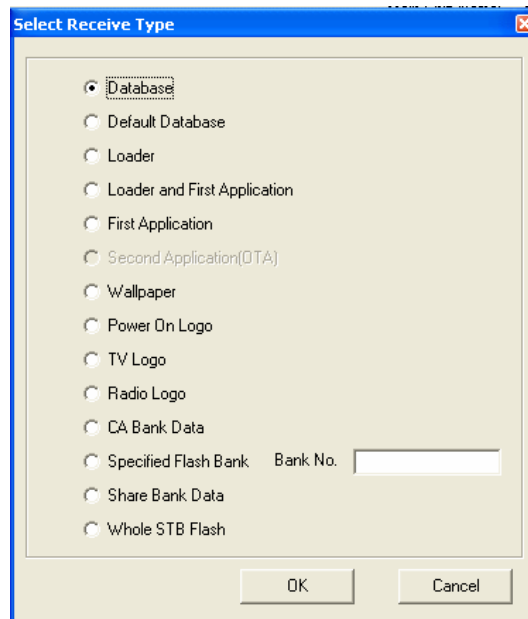


Figure 11. Receive type dialog

Note: The upload/download file's extension name should be .ssu.

7. Wallpaper Operation

We can get a wallpaper type file by two ways.

Firstly, we can create a file with wallpaper type by clicking menu item: File | New or the button



on toolbar. A wizard dialog will be shown to help to create a new file.

Just as Figure 12

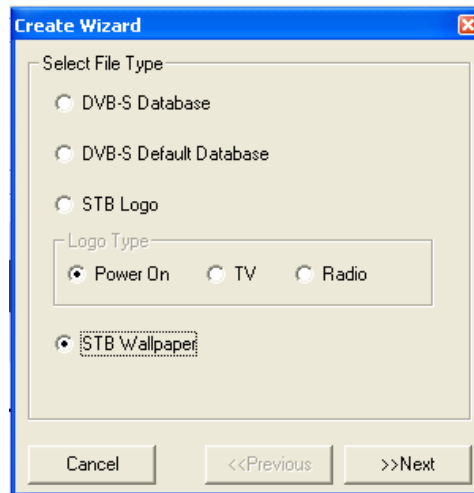


Figure 12. Select STB wallpaper dialog

By clicking ">>Next" button, we can see a dialog just as Figure 13 and Figure 14. If we has connect to the STB, some information will be shown on this dialog.

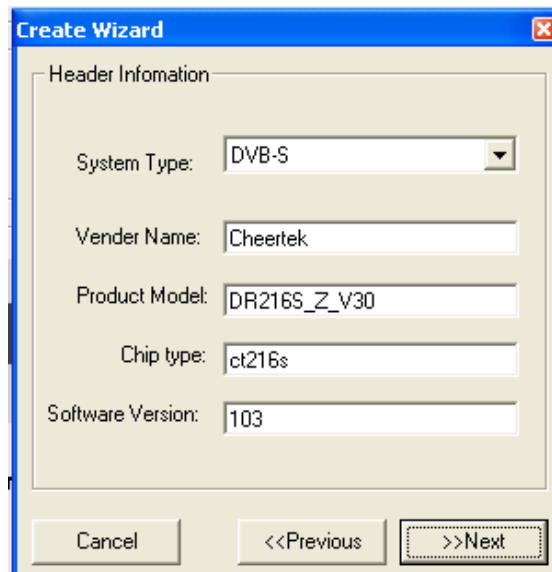


Figure 13. SSU header information dialog

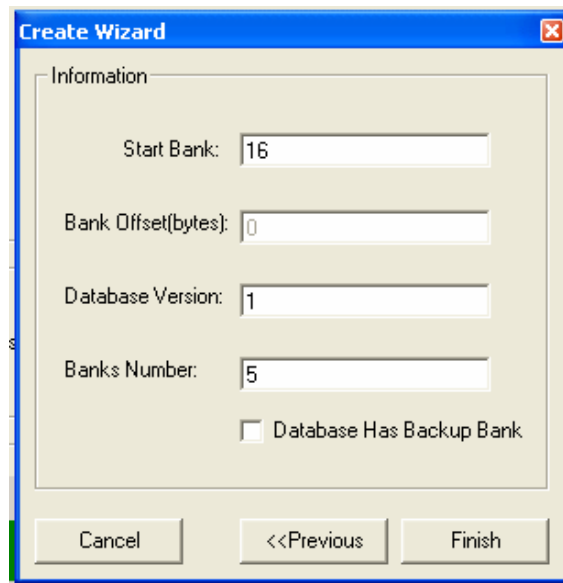


Figure 14. SSU Address setting dialog

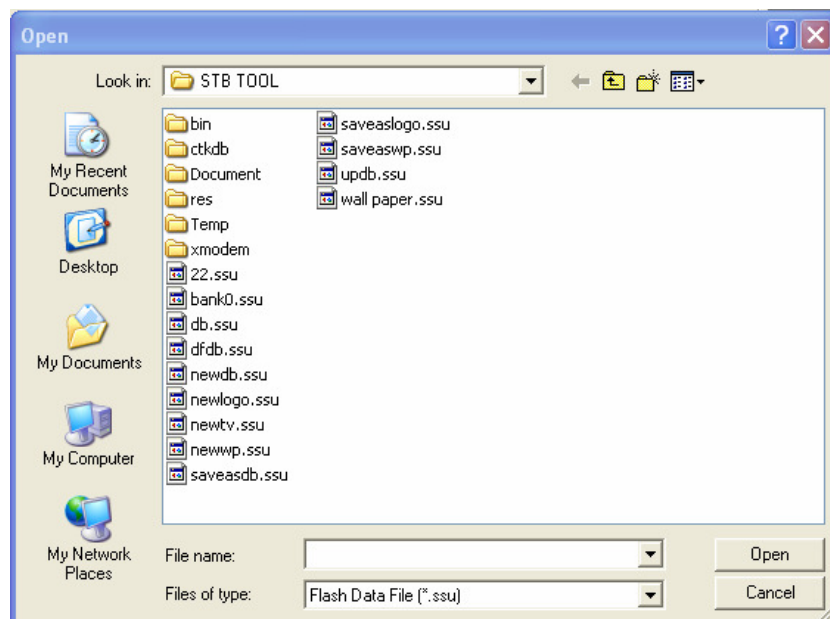


Figure 15. Select SSU dialog

At the file list dialog, we can input new file name and open the new file. Just as Figure15.

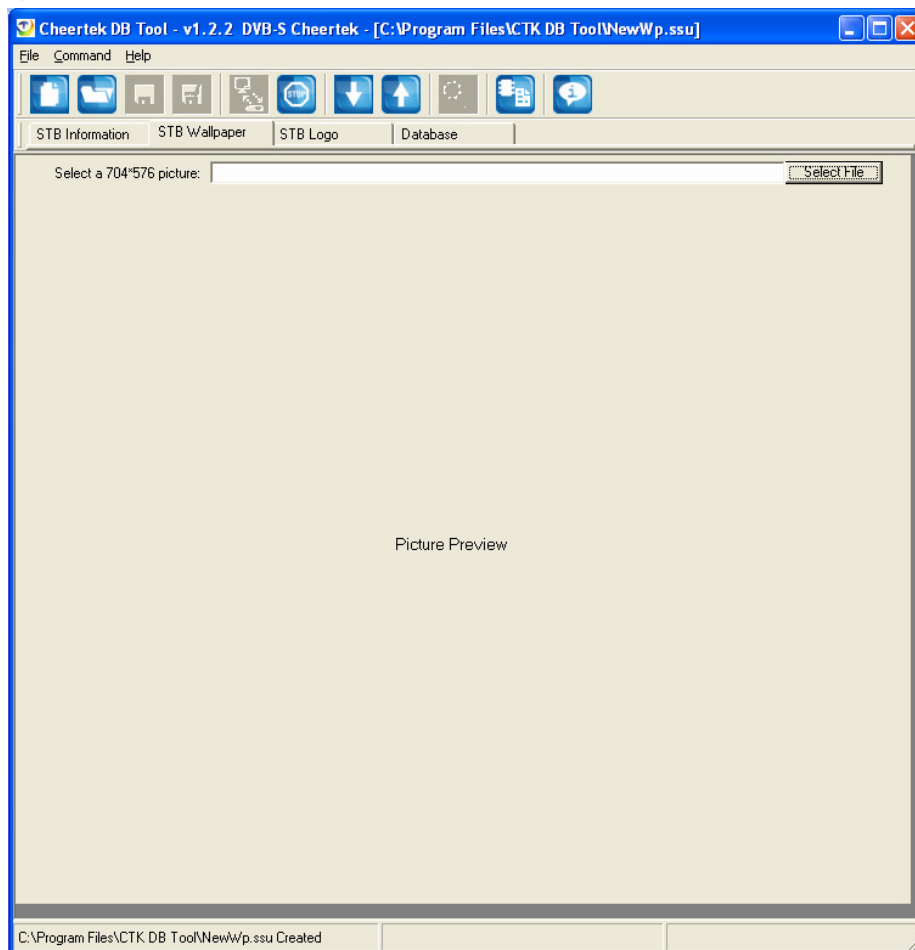
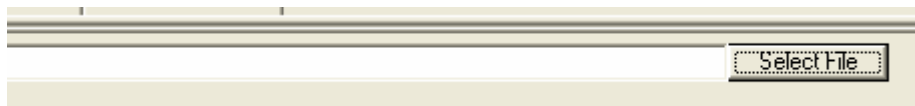


Figure 16. STB wall-paper edit form

Figure 16 is wallpaper edit form.



By clicking the “Select File” button, we can select a bmp/jpg picture. The selected picture will be display on the form. Just as Figure 17.

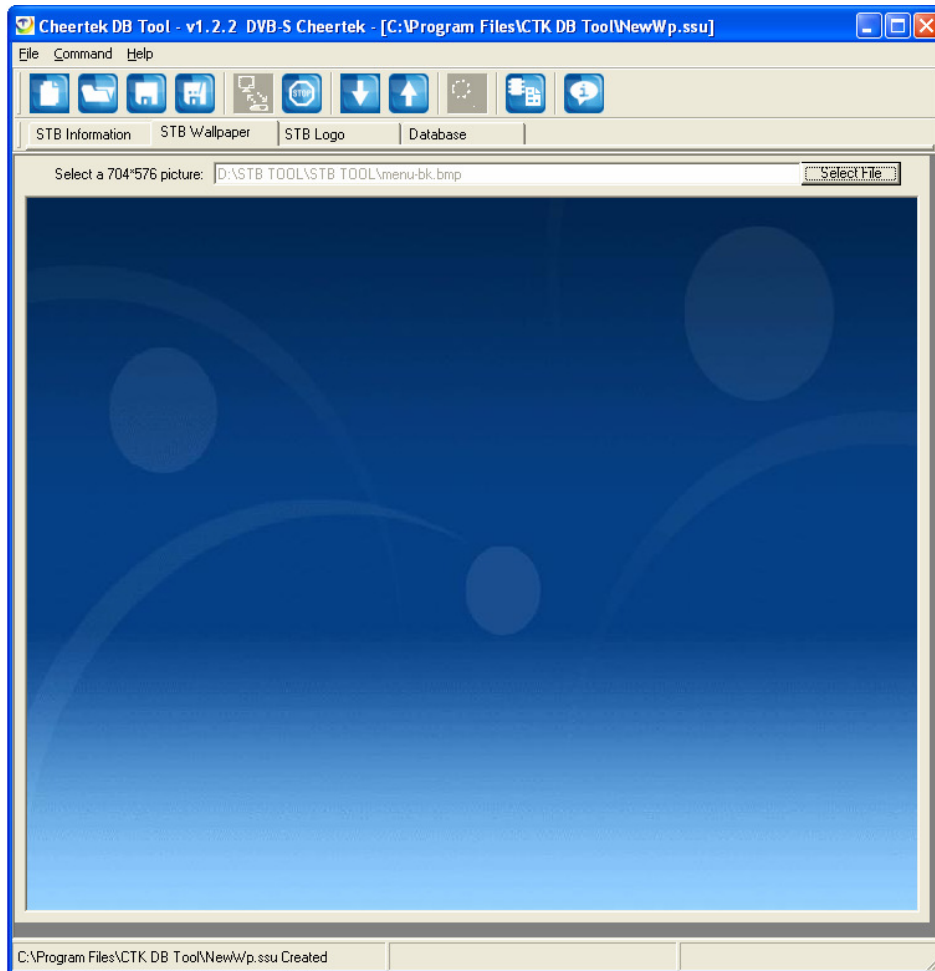



Figure 17. STB wall-paper pre-view window

After we select the picture, the save button will be enabled. The wallpaper will be saved after we click  button on toolbar or select menu item File | Save.

The second way to update STB wallpaper is to open existed wallpaper. We can open the wallpaper file we just saved. The wallpaper form will show a picture preview of the file. Just as Figure 18.

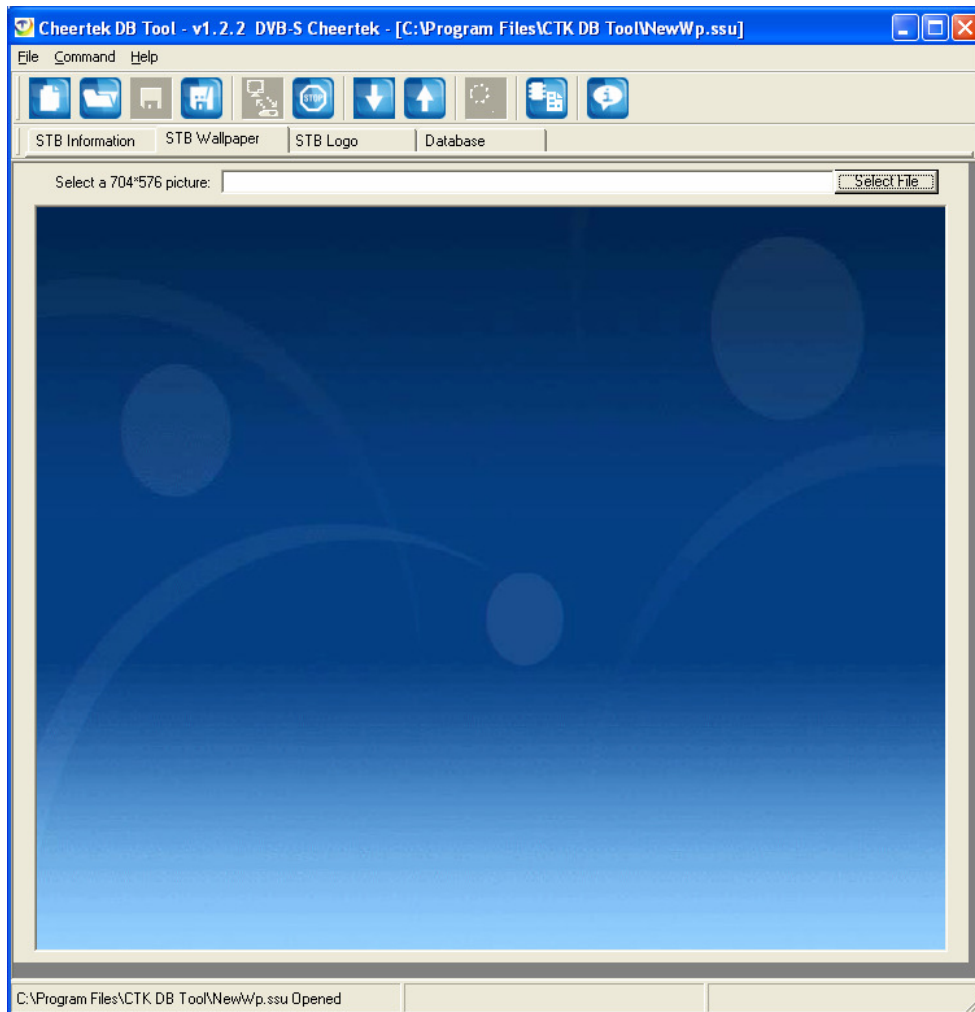


Figure 18. Save wall-paper

We could also select a new picture to replace the picture which exists in the wallpaper file.

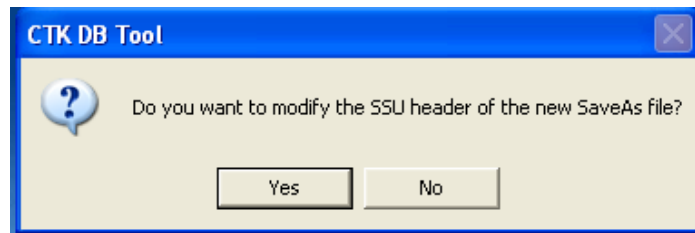
Note:

1. An error message will be shown when trying to open a blank wallpaper file.
2. The DB Tool only supports the picture which has a resolution of 704*576.

When we need to get a wallpaper file for another system, we could use save as function to

redefine the header data of wallpaper file by clicking button  or menu item File | Saveas...

The following message box show whether you want to modify the header data of “save as” ssu file.



Once we select “Yes”, we can edit the information of “save as” file. Just as Figure 19.

DB Tool support edit the header information of ssu file in open or save as setting dialog. The information will be blank without STB's connection.

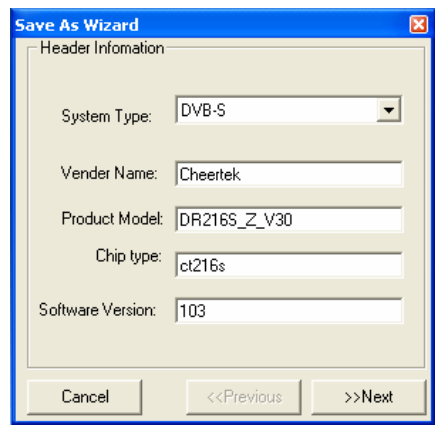


Figure 19. Change wall-paper SSU header at save as dialog

Note:

Please change the ssu header information according to the destination STB system. Otherwise, the fault data files maybe destroy STB software though the DB Tool has a set of download rule checking.

This tool will not prevent creating a new wallpaper for STB without wallpaper. But the wallpaper file will be blocked off when downloading it to STB.

8. Logo Operation

The DB Tool supports the update operation of power on, TV and radio logo. We can get a logo file by open an existed ssu file or create a new file. The existed file could be the file which is uploaded from STB before.

The Figure 20 is the logo edit form of DB Tool.

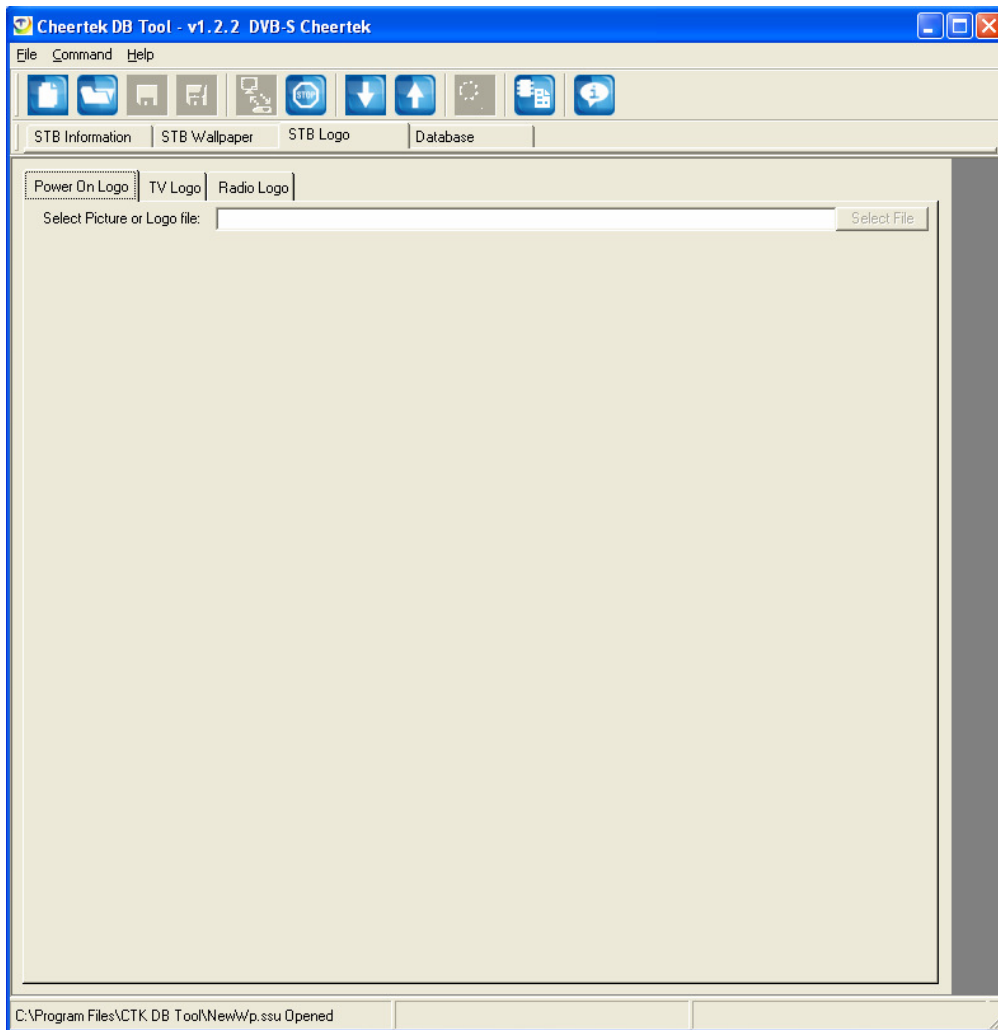


Figure 20. Power-On logo window

The “Select File” button will be disabling unless an ssu file is opened. Only one type of logo can be edit in this form at the same time.

We can also open, new and save as a logo file on this form. The operation process is just similar to the wallpaper.

Note:

Please change the ssu header information according to the destination STB system. Otherwise, the fault data files maybe destroy STB software though the DB Tool has a set of download rule checking.

9. Database Operation

DB Tool supports the edit of STB database data. STB default database also can be open and edit by this tool.

The default database is stored in shared bank region. If user want to upload or download

default database to/from STB, user must firstly check the flash mapping from STB main information form of DB tool.

Note:

STB default database is enabled by STB, if user wants to enable default database feature, user must open this feature during STB application program development.

When we new a database or default database, software will open the new file and jump to database edit form.

Just as Figure 21.

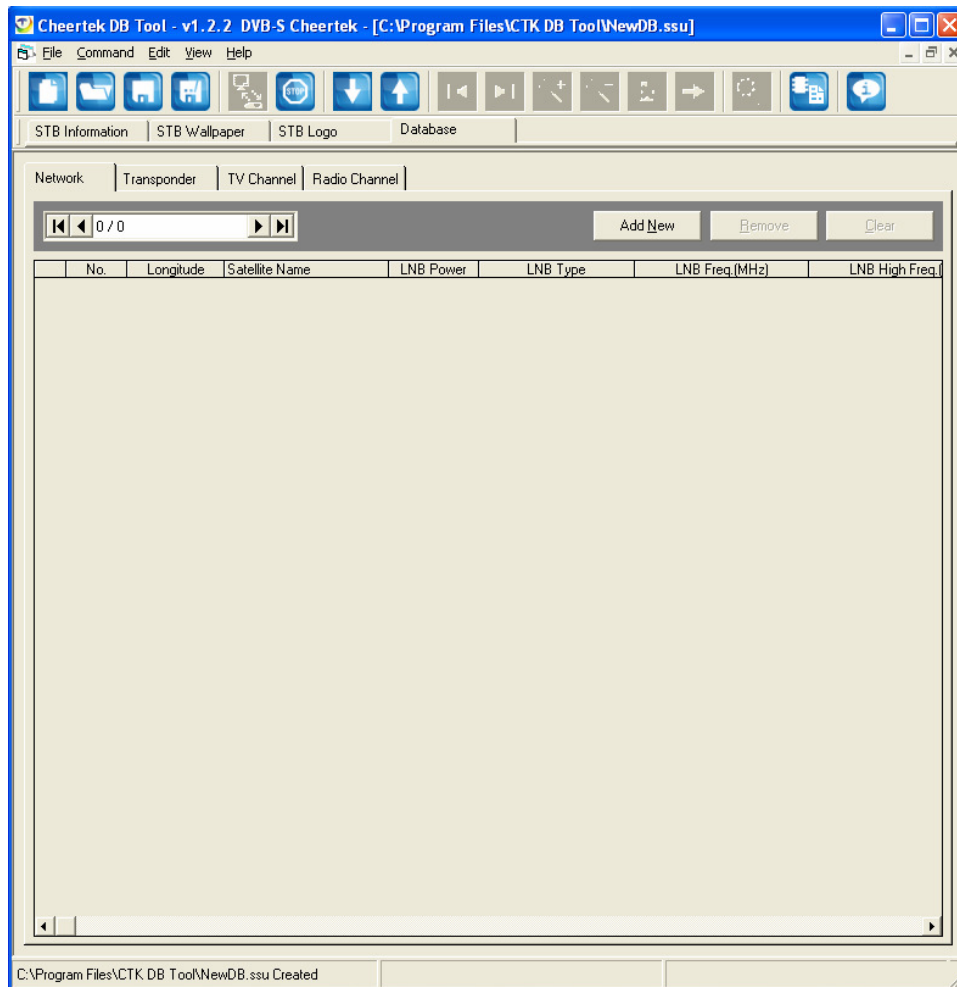
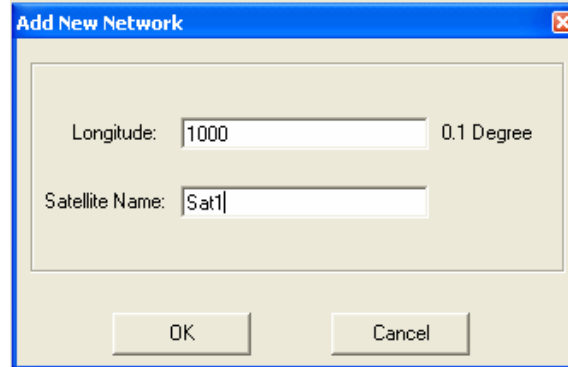


Figure 21. Database edit window

The database edit form has four lists. They are Network list, Transponder list, TV list and Radio list.

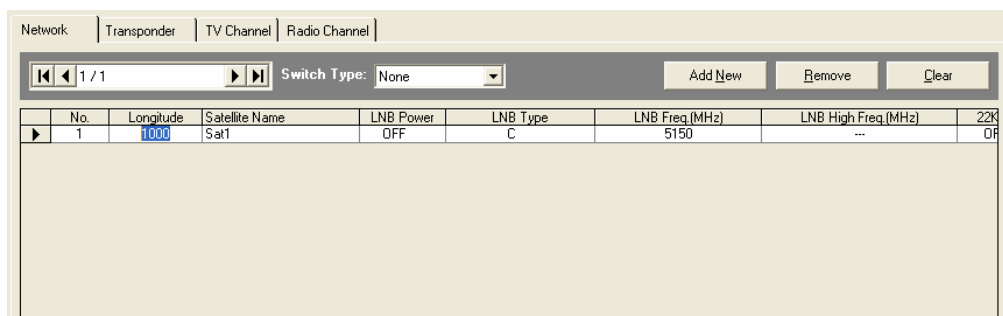
Firstly, we should add a new network. Just click the “Add New” button of network list.



The dialog box titled "Add New Network" contains two input fields: "Longitude" with the value "1000" and a unit of "0.1 Degree", and "Satellite Name" with the value "Sat1". At the bottom are "OK" and "Cancel" buttons.

Figure 22. Add a new satellite/network

The new satellite will be shown in the network list. Just as Figure 23.



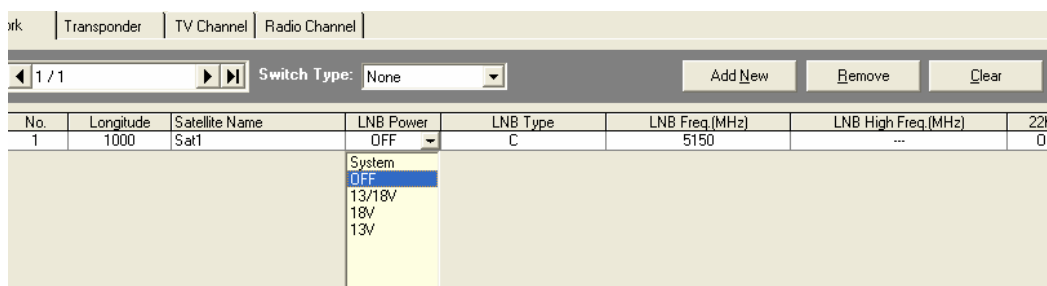
The window shows the "Network" tab selected. It includes a table with the following data:

No.	Longitude	Satellite Name	LNB Power	LNB Type	LNB Freq.(MHz)	LNB High Freq.(MHz)	22K
1	1000	Sat1	OFF	C	5150	---	OF

Figure 23. Satellites/Networks browse window

The add operation of transponder will accord this network. And new TV/Radio service will be add according to the exist transponder.

The information could be edit by click data region. Just as Figure 24. The new value can be selected from the list.



The window shows the "Network" tab. The "LNB Power" field in the table is selected, and a dropdown menu is open showing the following options: "System", "OFF", "13/18V", "18V", and "13V".

Figure 24. Satellite/Network field edit

We can also open an existed database/default database ssu file. The data will be getting from file and display on the form. Just as Figure 25, 26 and 27.

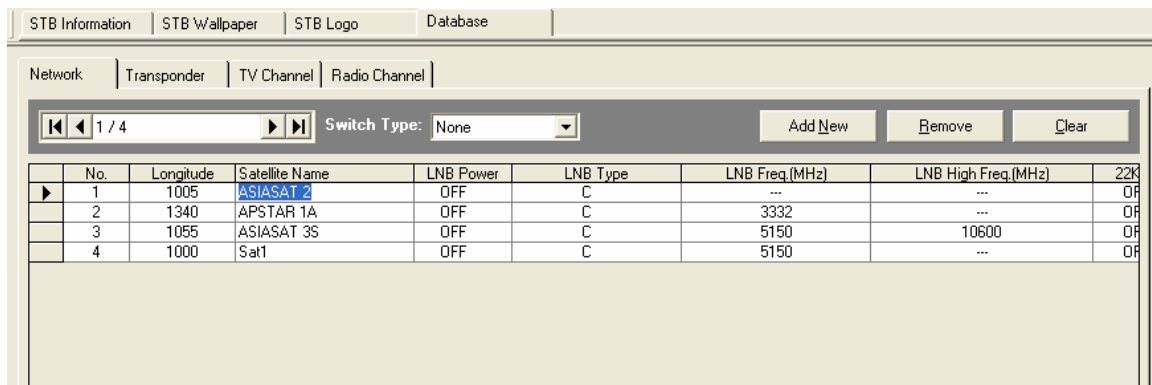


Figure 25. Change satellite/network name

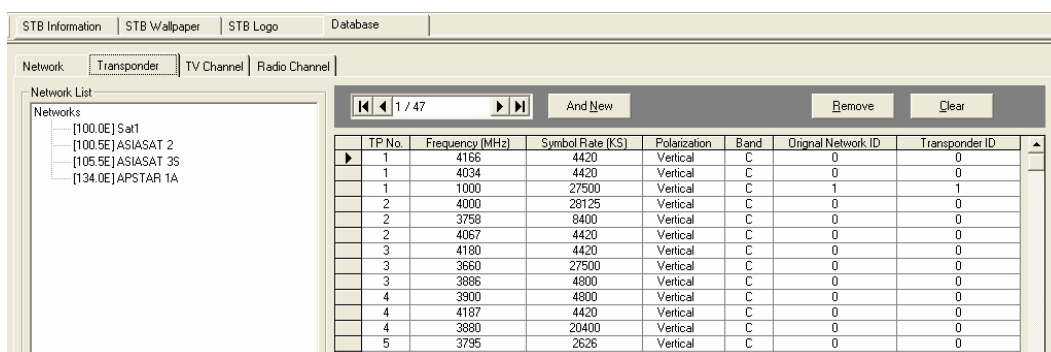


Figure 26. Transponder browse

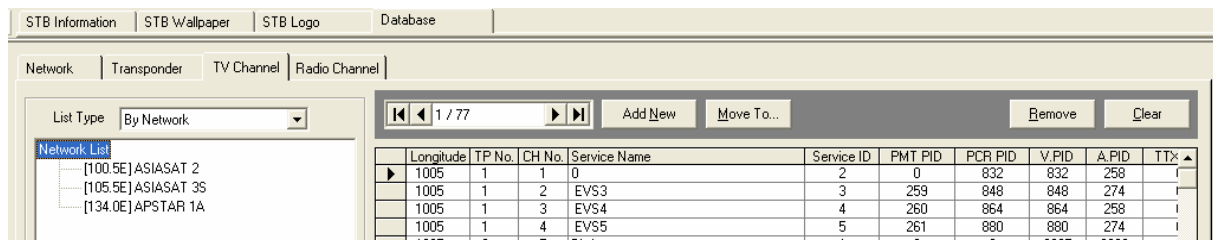


Figure 27. TV/Radio channel list window

The buttons on toolbar will be changed while we switching the database list.



button is move the selected list item to previous location.



button is move the selected list item to following location.



button is to add a new item to current list.



button is to remove a selected item from current list.



button is to clear all data item from current list.



button is move the selected list item to specific location.



button is channel manager button. It is only enabled when current list is TV/Radio list.

Figure 28 is channel manager setting dialog.

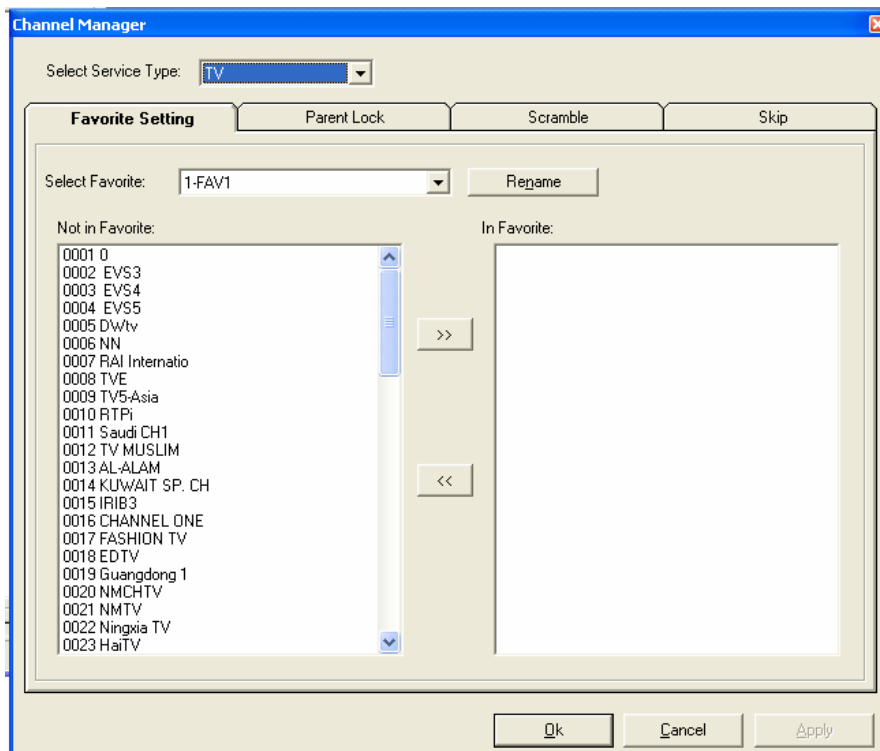
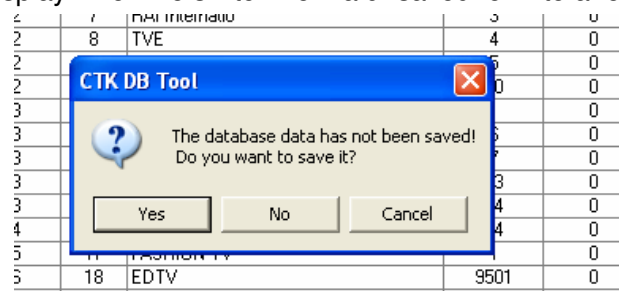


Figure 28. Channel manager

We can edit the favorite, parent lock, scramble and skip property of every service here.

Note:

A prompt will be display when we switch from a unsaved form to another form.



DB Tool is apt to save the data file before switch to another form. For example, we change the

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database data and do not save it. When we switch to wallpaper form, it will display this message box.

10. Set/View the Global Environment

There is also a useful function of DB Tool. That is Flash configuration setting. We will take the notice of the Flash layout configuration item on STB Information form just as following picture.

The file of "D:\STB TOOL\STB TOOL\DR216S_Z_V30.ini" is created by DB Tool automatically when this tool is connected with STB. This file will be put at the directory of application's installation. It records the STB's Flash layout. These information will be used when DB Tool disconnect from box. This configuration file is named by the box's product model name. Just as Figure 29.

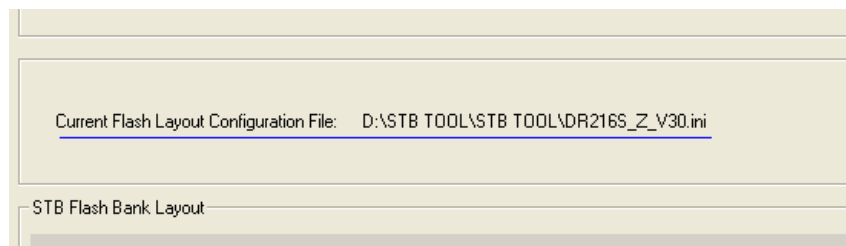



Figure 29. Configuration file path

We can open current configuration file by selecting DB Tool's menu item "Command->Flash Layout Config" or press icon  on toolbar. The dialog shows almost all of the information which is provided by STB. The information can not be edited when STB is connected. Just as Figure 30.

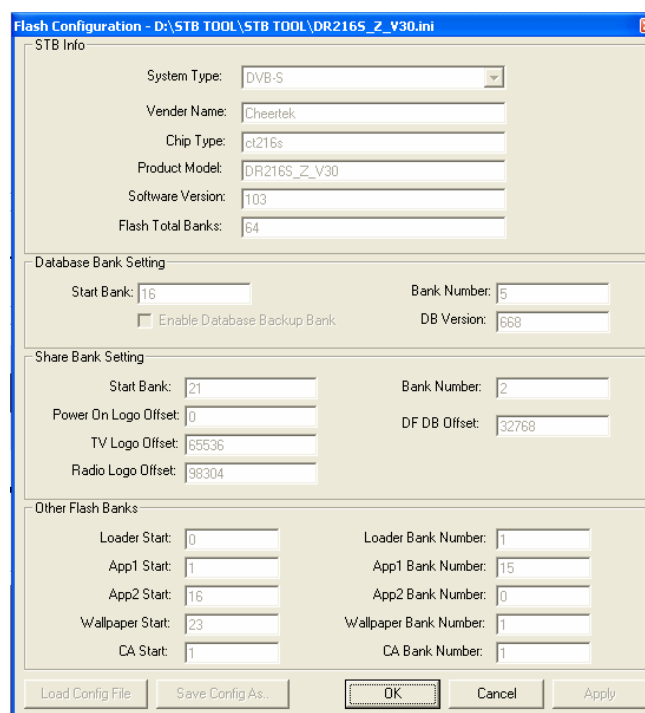


Figure 30. Flash configuration dialog

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When DB Tool disconnect from STB, we could get Flash layout data by loading previous configuration file.

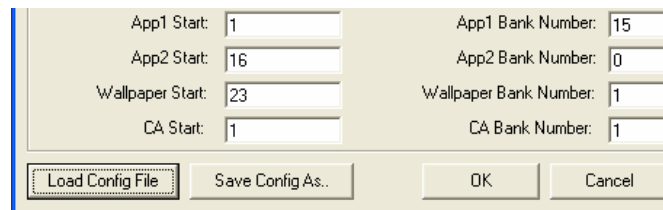


Figure 31. Load flash configuration file

Once the configuration file is loaded, we can also edit the data. Because the previous configuration file will be update when connecting to STB, it will be a good idea to save the modified configuration to another file. We can do this by clicking “Save Config AS..” button. And the environment in DB Tool will be modified. The modification can also be set as current configuration by click “Apply” or “OK” button. Just as Figure 31.

The benefit of this function is we can set the environment easily when we create a new ssu file. The information of STB will be shown automatically. Just as Figure 32.

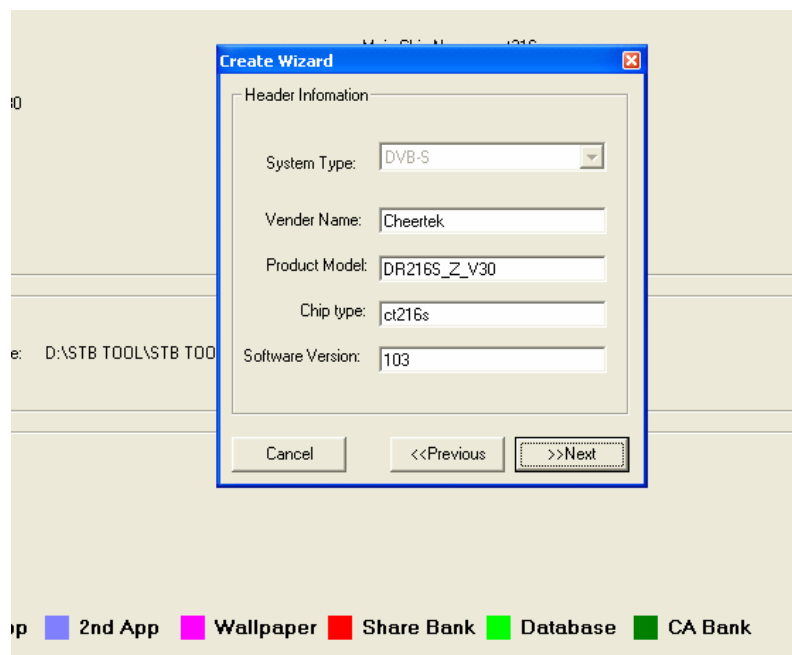


Figure 32. Display STB product information

Note:

1. The file named by STB product model will be updated when connect to STB. Please make sure do not save your modification to these files.
2. The incorrect modification maybe causes system error. Please confirm your setting according to STB's configuration.

11. DB Tool version


User can click  button to display DB tool version and user can see the popup windows as below.



Figure 33. About DB Tool version

12. Manufacture An Auto SSU Description File

DB tool can manufacture an auto SSU description file, User can click “**Files\Auto SSU**” to open a dialog window. User can select a SSU file to produce an auto SSU description file - “DEFAULT.RST”. User can copy the auto SSU description file and a SSU file to an USB flash device (UFD). When user inserts an UFD into STB, the STB will automatically start the upgrade.

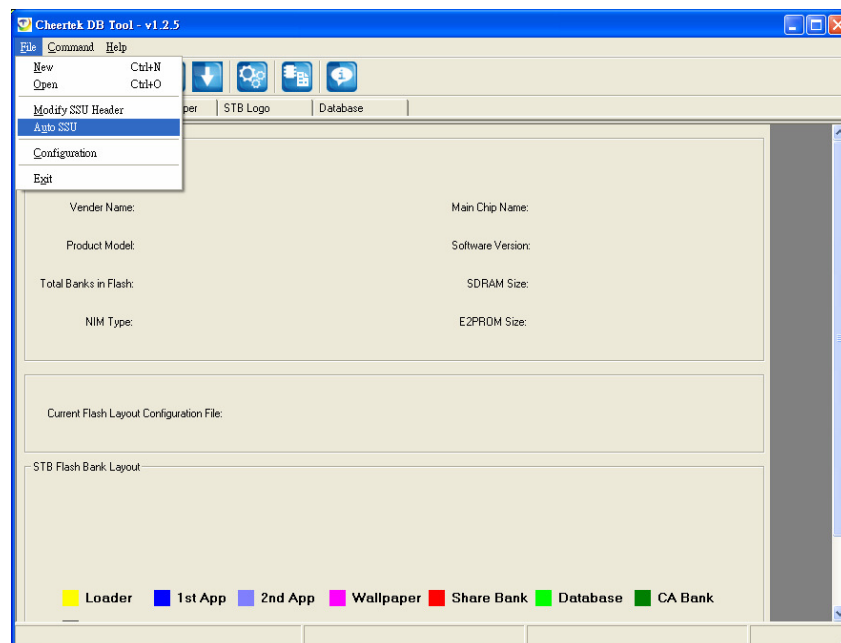


Figure 34. Auto-SSU

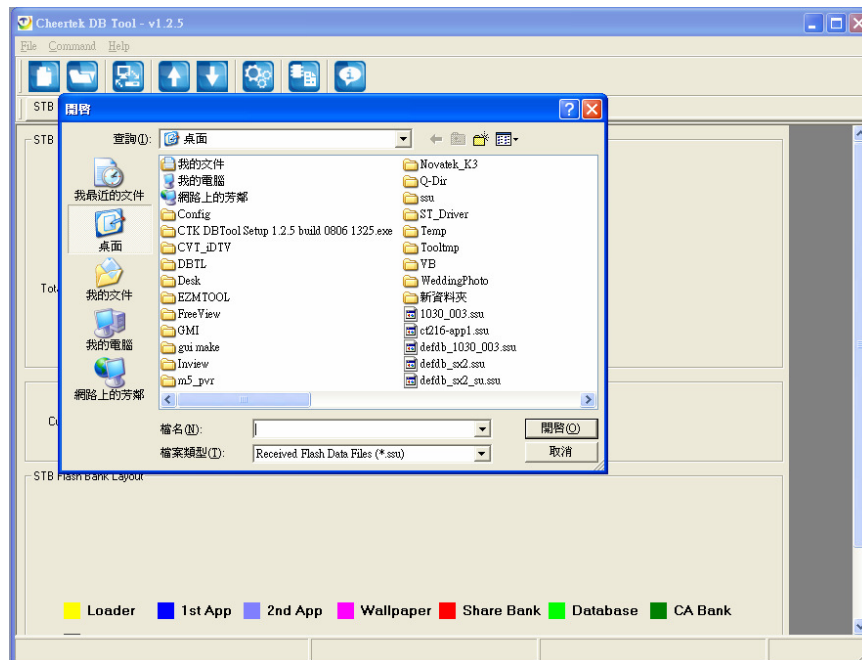


Figure 35. Auto-SSU “open”

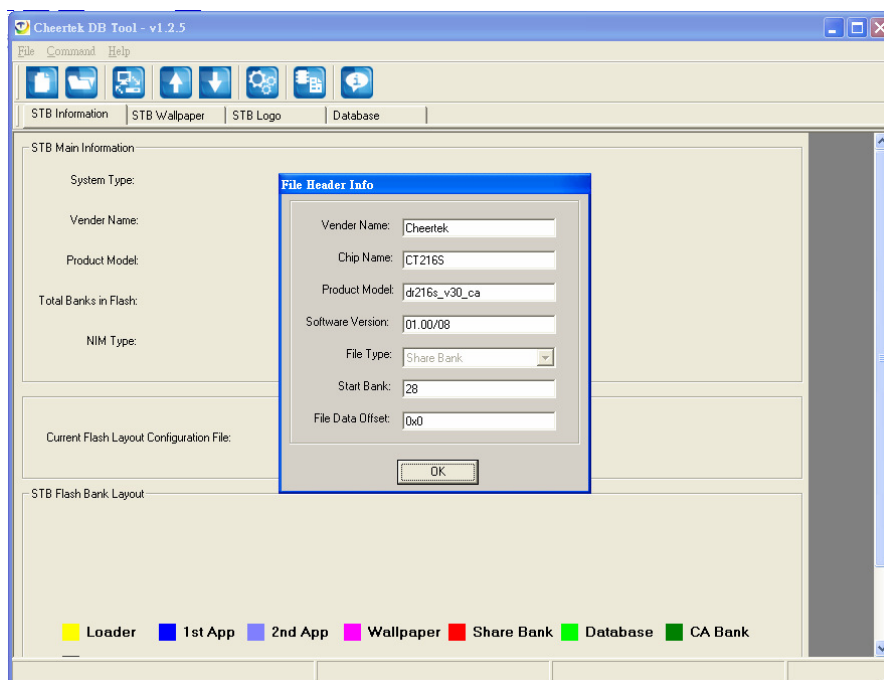


Figure 36. Auto-SSU “file header information”

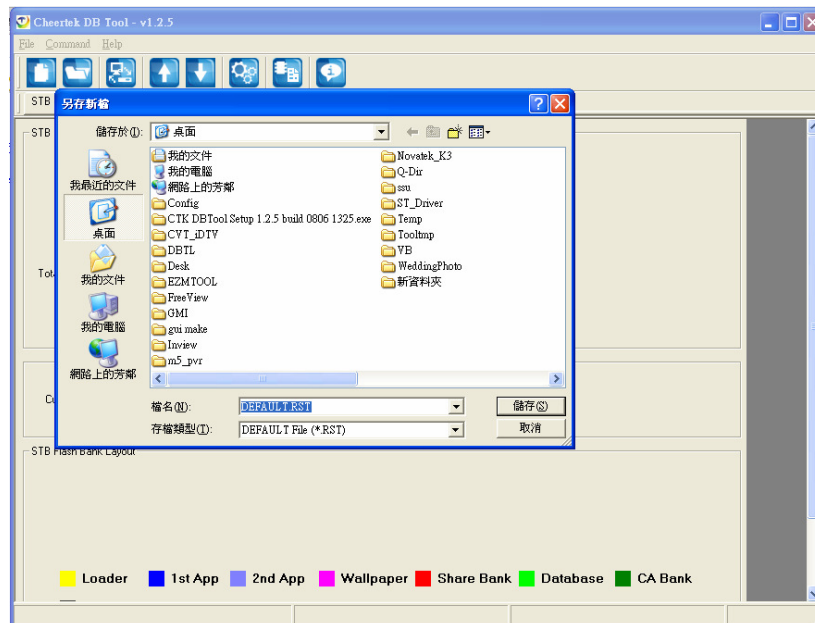


Figure 37. Auto-SSU "save as"

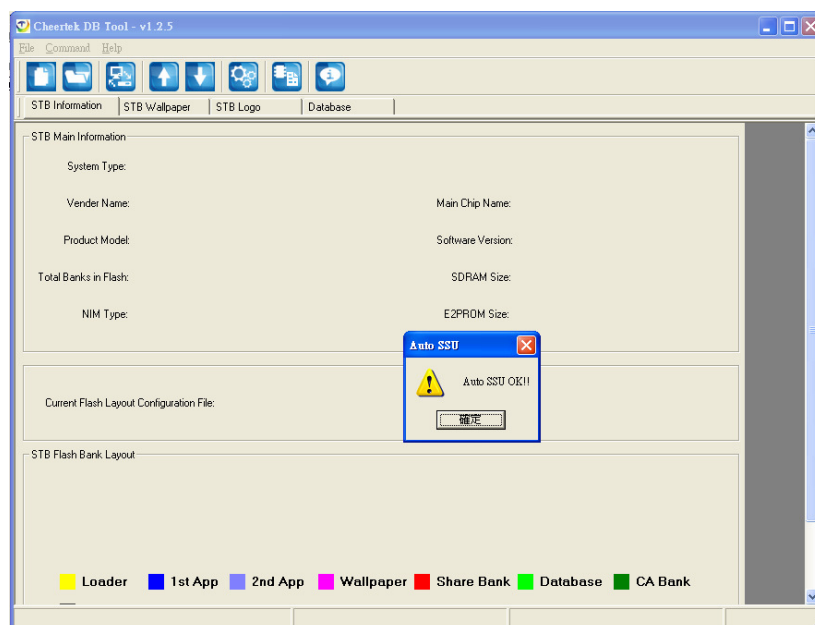


Figure 38. Auto-SSU finish

13. Disable SSU Header Checking Rule

User can use "Modify SSU header" function to disable the SSU header checking rule. User can click **"File Modify SSU header"** to select a SSU file and DB tool will popup a "File Header Information" dialog. When user click the checking box "ALL FF", it will fill vender name, chip name, product model and software version with 0xFF. Another user can edit the string within a field in the

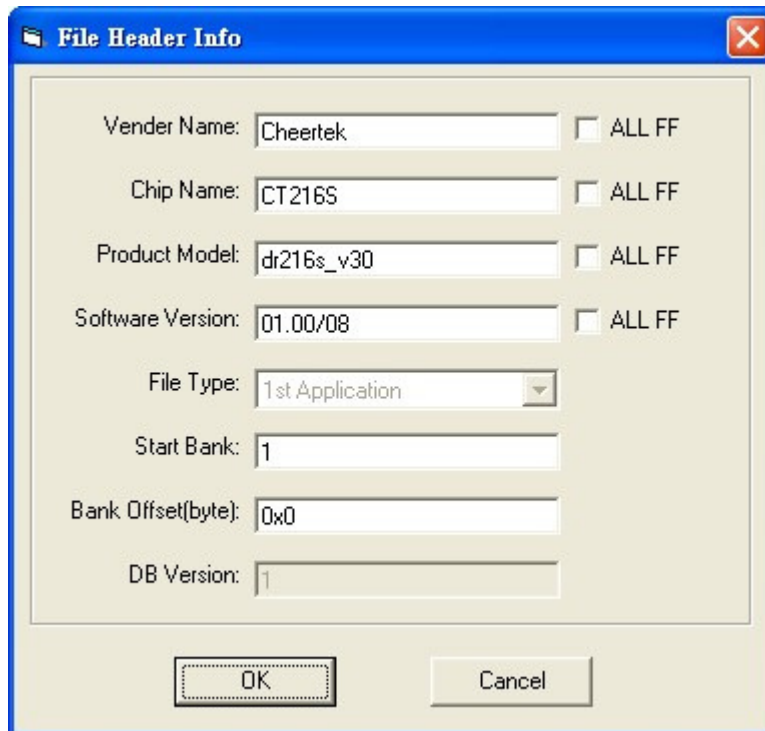
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dialog to change the SSU header. When vender name, chip name product model of software version is 0xff, STB will not check the information.



The image shows a Windows-style dialog box titled "File Header Info". It contains several input fields and checkboxes. The fields are: "Vender Name" (Cheertek), "Chip Name" (CT216S), "Product Model" (dr216s_v30), "Software Version" (01.00/08), "File Type" (1st Application), "Start Bank" (1), "Bank Offset(byte)" (0x0), and "DB Version" (1). Each of the first four fields has a corresponding "ALL FF" checkbox to its right, which is currently unchecked. At the bottom of the dialog are "OK" and "Cancel" buttons.

Figure 39. File Header Information

14. Create a Shared Bank SSU

User can create a shared bank SSU to upgrade Power-on logo/TV logo/Radio logo/Default database. When user click  icon to produce a new SSU file, DB tool will popup a "Create Wizard" dialog. User can select a SSU file type to produce a new SSU file. User must check the field of header information to match the target STB. User allows selecting a Power-On logo, a TV logo, a radio logo or a default database to make up a shared bank SSU.

P.S: Shared bank includes a power-on logo, TV logo, Radio logo and a default database. The size of shared bank is usually set one or two banks and user can edit the configuration file to change the size of shared bank.

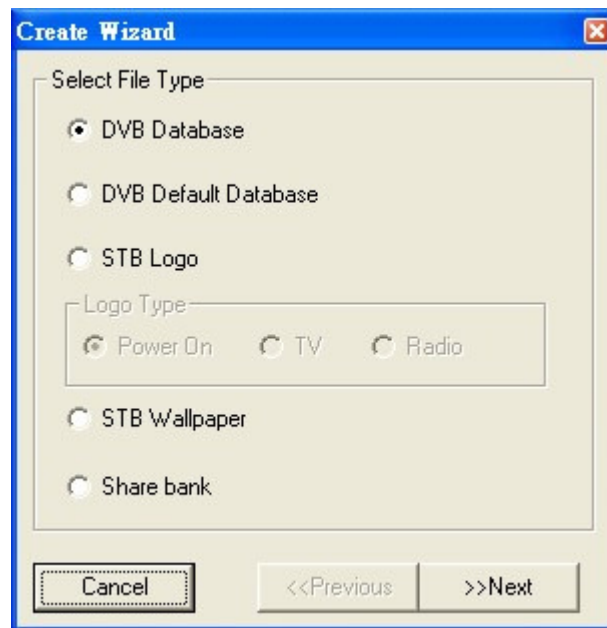


Figure 40. Create Wizard - 1

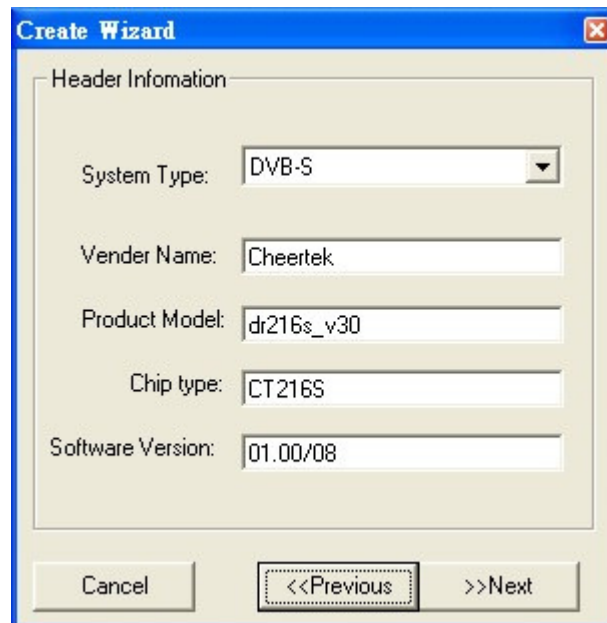


Figure 41. Create Wizard - 2

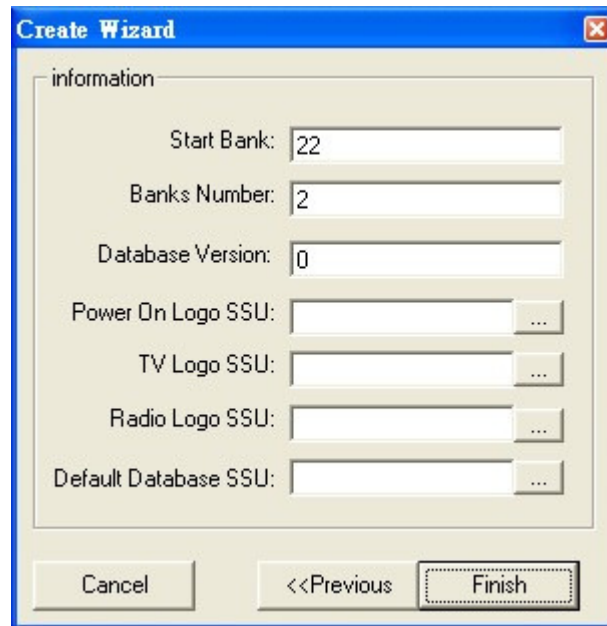


Figure 42. Create Wizard - 3

15. SSU2CRD Tool Introduction

There are three formats of Cheertek release application file.

The first format is CRD. It is supported by previous release application. A STB FLASH data can be updated by memory card with CRD format file in it.

The second format is SSU2.0. This format is supported by DB Tool. We can update STB data by U-disk or memory card with this format file. The latest STB firmware will support this format.

The third format is SSU1.0. It is an intermediate format. This format is also supported by the latest STB firmware. But DB Tool can not open or download any file with SSU1.0 format.

SSU2CRD Tool provides a way to convert SSU2.0 file to SSU1.0 or CRD file. We can run this tool from Start Menu->CTK DB Tool->SSU2CRD.exe



Figure 43. Convert SSU2.0 to CRD.

Figure 43 is SSU2CRD tool's outline. The tool only support Loader+First Application file. There is a check box which is "Convert with Default Header". If it is checked, the output crd file header data will be set to default. The default value is Cheertek's previous crd header setting.

Firstly, select a SSU2.0 format Loader+First App file. Secondly, press "Convert" button to start conversion. If the selected file is not a Loader+First App file or not a SSU2.0 file. The tool will show an error message just as Figure 44.

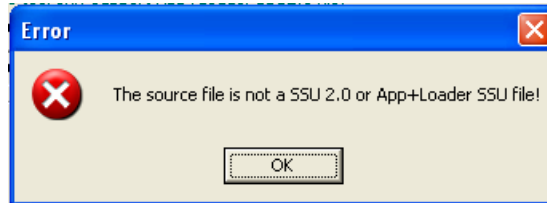


Figure 44. file type limit

If the selected SSU2.0 file is correct, a file select dialog will show to assign the new file name. We could also specify the new file type, just as Figure 45.

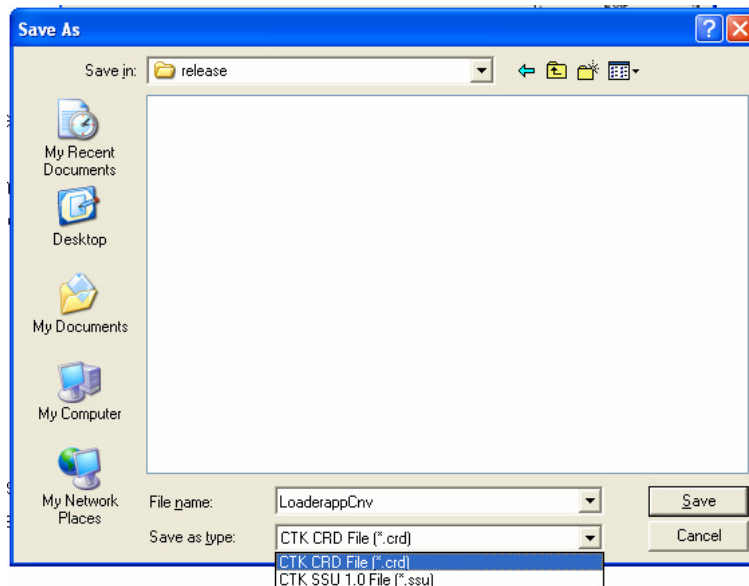
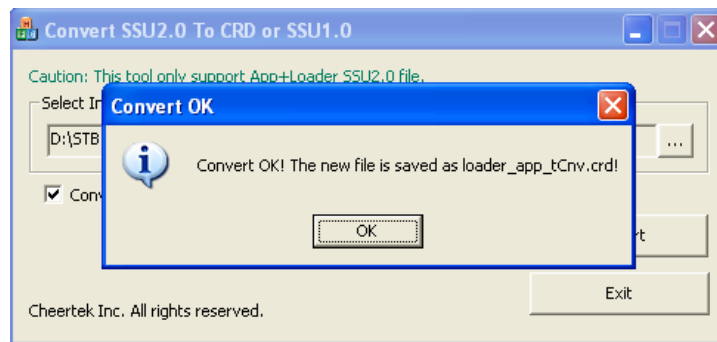


Figure 45. SSU2CRD - Save as dialog

When press "Save" button the new file will be saved. A message box will be shown with successful information.

**Note:**

Both SSU1.0 format file and CRD format file can not be edit/download by DB Tool. It can be burn to STB by U-disk, memory card or FUM.