TRIAX

User guide

DVB-T module - 492022

TRIAX - your ultimate connection

Contents

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Disposal

Within in the European Union this label indicates that the product cannot be disposed of with the general household waste. Neither the headend nor the input and output modules can be disposed of with the general household waste.

For proper treatment and recycling of old products, please take them to designated collection points in accordance with your national legislation.

Box content

A new input module is wrapped in antistatic bubble wrap and packed in a cardboard box when you receive it.

Included in the box is a user guide instructing you in how to use the TDX Service Tool to configure the module

DVB-T module

The DVB-T module is one of the input modules that you can install in the input section of your TDX headend unit.

Below is an illustrated description of a DVB-T module.
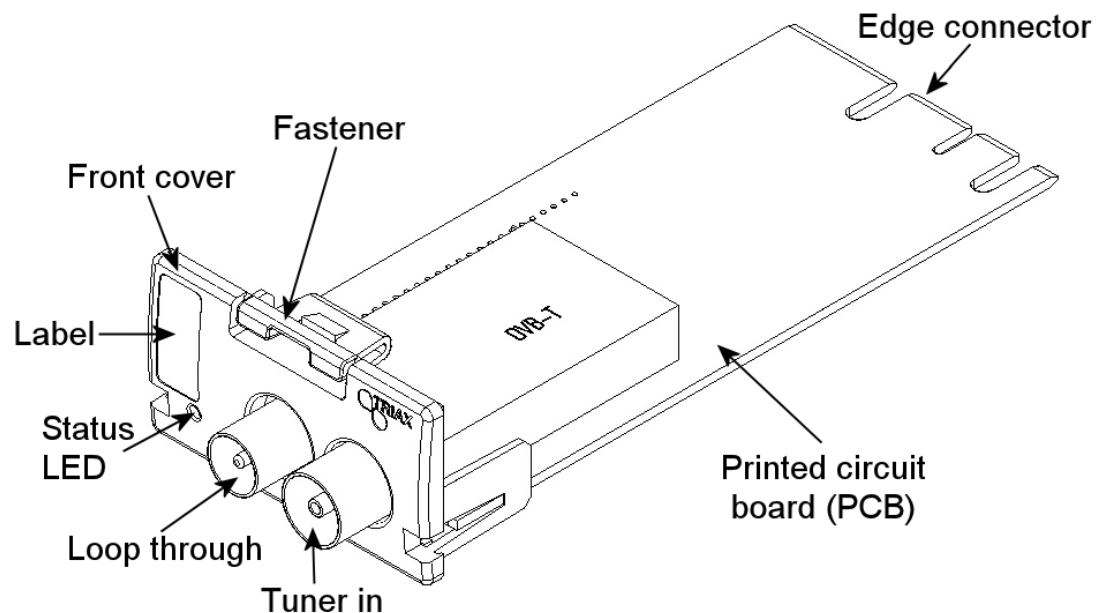
Basics

Labels

A label is placed on the input module where you can write the information regarding the configuration of the module.

Besides the information that you write on the label, the module type and part number are also displayed on the label.

Note The coloured part at the top of the label also informs you of the module type. Each type of module is allocated a different coloured label.

Label with information
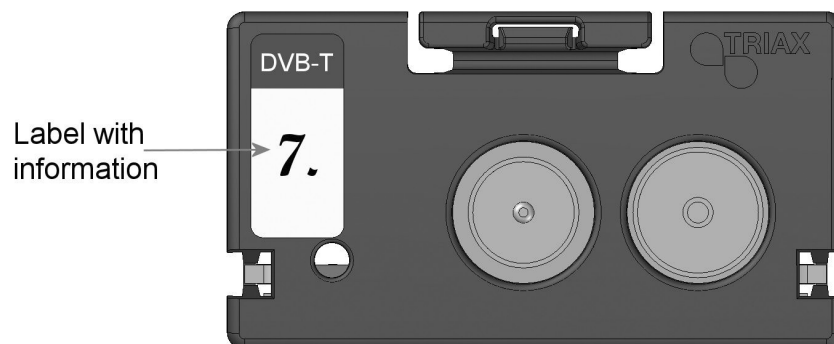
On one of the other sides of the module you will find a label with the bar code printed on it.

Cover removal

Before you can install a DVB-T module in the input section you have to remove the cover that protects the module slot.

1. Press the fastener downwards

2. Pull the cover outwards to remove it

You do not need tools to remove the covers, just use your fingers.

For EMC and cooling reasons only remove covers from the module slots that you want to insert modules into.

Module installation

It is optional in which slots you place the individual input modules in the input section. For convenience each slot has been given a number, and an overview of the slot numbers has been placed on the inside of the door of each unit.

Note Slot no. 1 is placed in the top left-hand corner of the input section when you face the front of the unit.
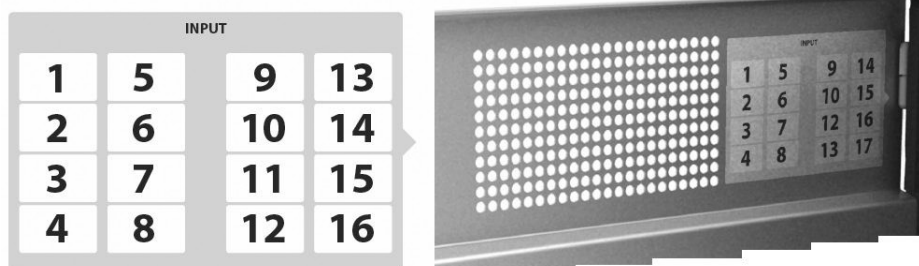
You install an input module by sliding the module into a module slot in the input section of the headend unit and push it till the module clicks into place.

1. Slide the module into a slot

2. Push the module till the fastener clicks into place
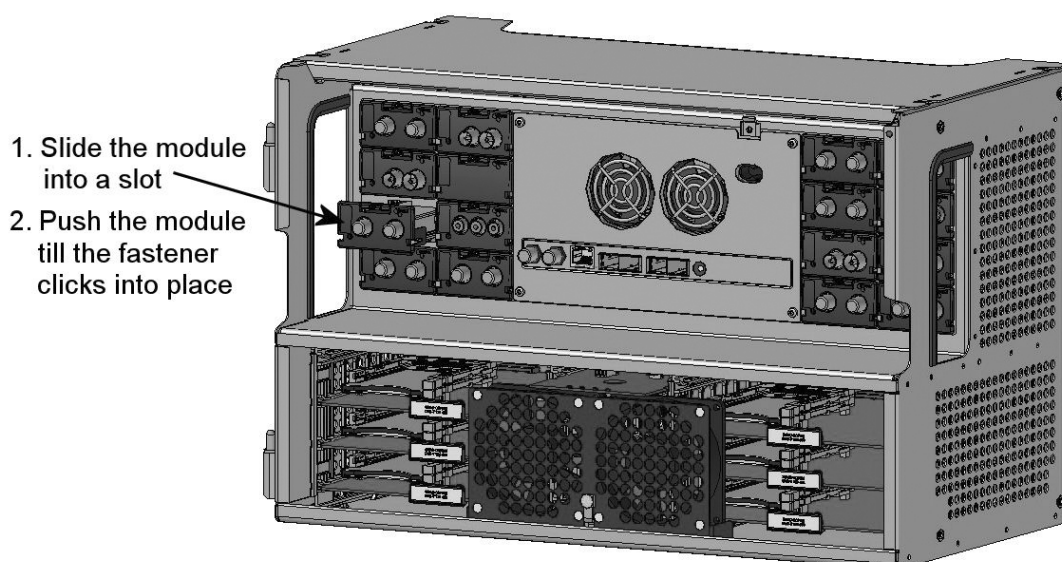
Module removal

It is possible to remove an input module from a module slot without using any tools, just use your fingers to press the fastener downwards and then pull the module outwards to remove it from the module slot.


1. Press the fastener downwards

2. Pull the module outwards to remove it from the module slot
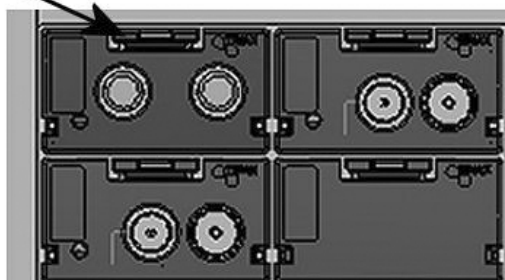
Basics

Input cable installation

When all the required input modules have been installed you can connect the input signal cables one by one to the input modules.

It is also possible to make a loop through from one input module to another.

Cables connected to input modules

Loop through from one input module to another
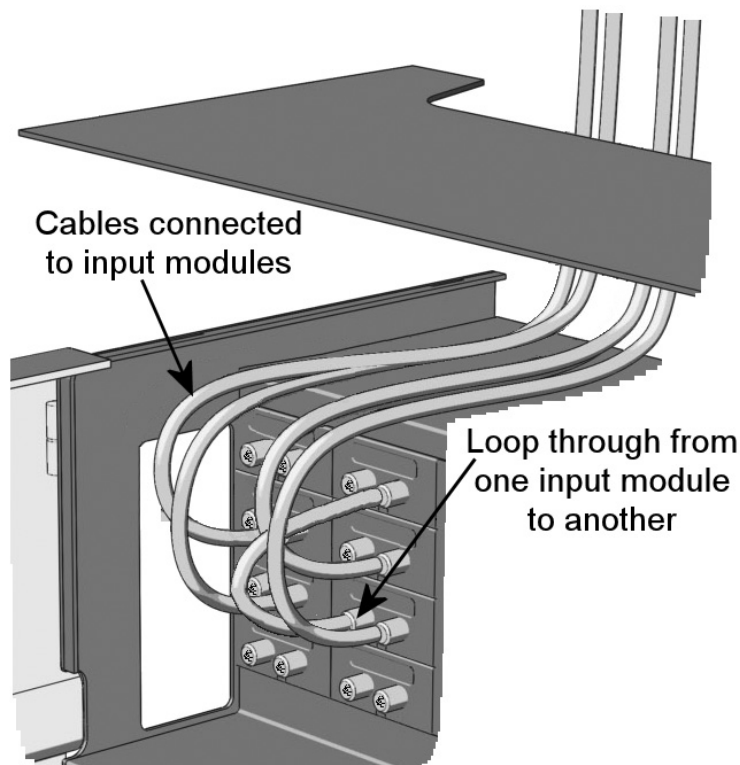
Status LED's

There is a status LED on the front of each module. The LED indicates whether the module has locked on to a frequency or needs to be configured.

Green - flashing   The module has not been configured yet.

Green   No errors and the module is locked to the frequency.

Red   Error and the module is not locked to the frequency.

No colour   Power has not been switched on.
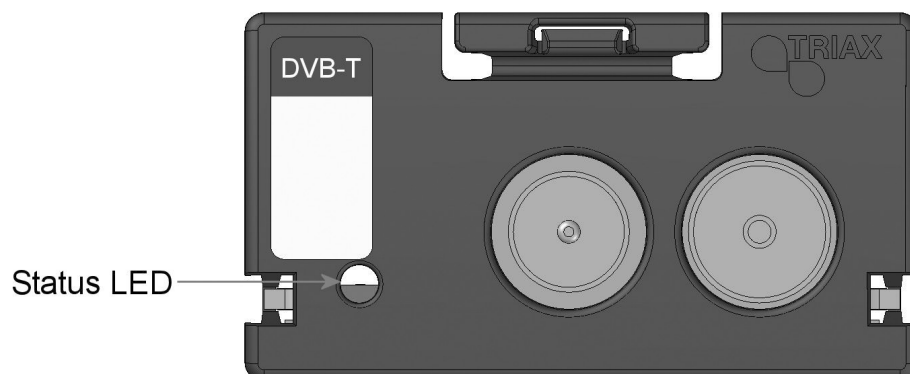
Status LED

When you update the software of a module the status LED provides you with information about the updating process.

Orange   Boot loader state.

Temporary off   Initiation of the software update.

Temporary green   Every time the modules receives a valid data package. Repeated until the update is completed without errors.

Red   Software update failed.

Configuration of system

In order to set up and configure the input and output modules within the headend system you have to connect your laptop (Windows based) to the RJ45 socket on the main headend unit using a Cat5 cable.

The Triax TDX Digital Headend system uses the programmes below and in addition to access the TDX Service Tool Microsoft© Silverlight Runtime version 3.0 is required.

Recommendations:
Operating system: Windows XP or above.

Browser: Windows Internet Explorer version 6.0 or above.

Additional software: Microsoft© Silverlight Runtime version 3.0 or above.

To access the TDX Service Tool, open your web browser on your computer and input the following IP address in the web address bar **http://192.168.0.100** and press enter.

Note   Your laptop has to use a static IP address in order to access the TDX Service Tool using the above mentioned IP address.
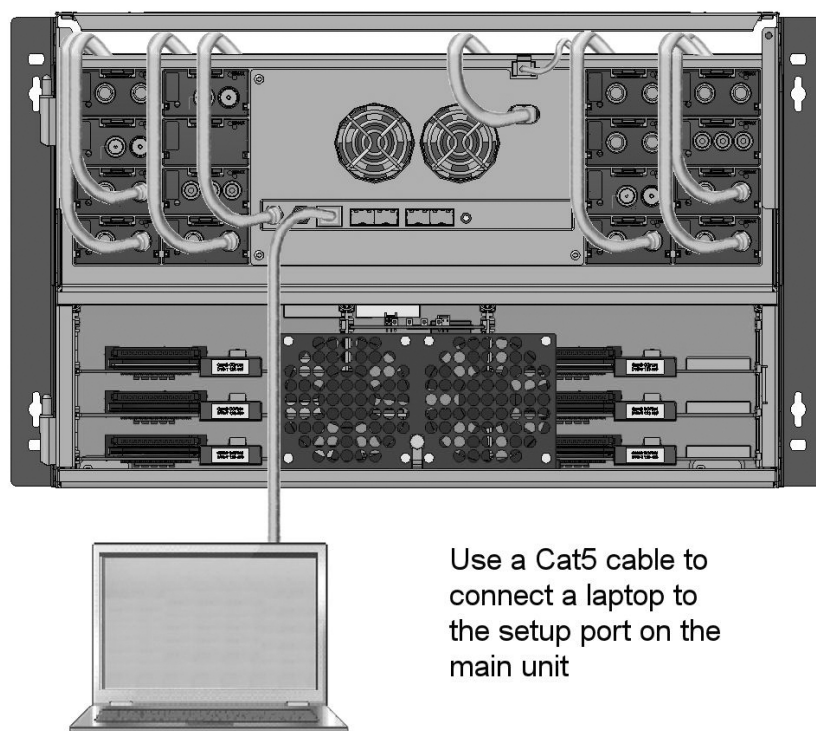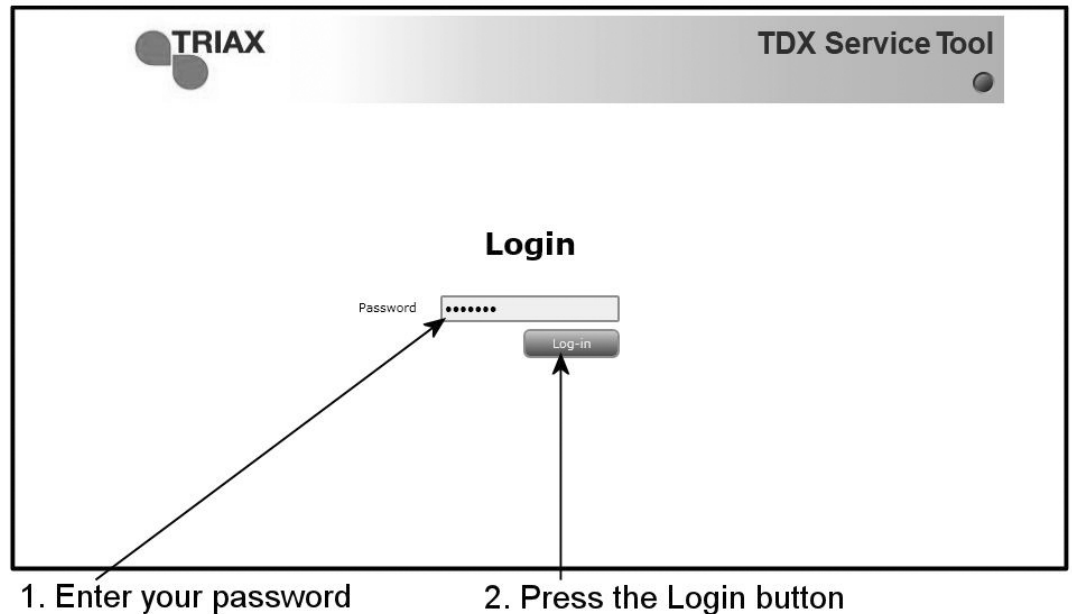

Use a Cat5 cable to connect a laptop to the setup port on the main unit

Basics

Log in

When you have loaded the TDX Service Tool from the TDX headend system to your laptop/computer the Login window of TDX Service Tool is displayed.

1. Enter your password   2. Press the Login button

The first time you want to log in to your TDX headend system you have to enter the default password. The default password is: **triax1234**

You can change the default password as soon as you have logged in to your headend system. For more information about changing passwords, see "Administration window" on page 10.

When you have pressed the Log in button the System window is displayed.

Note   Every time you set up a new headend system you have to start from scratch in the TDX Service Tool, meaning that you will have to change the default password, select which language you want to use in the TDX Service Tool and change the IP address if your TDX headend system is part of a distribution network.

System window

The System window contains a number of tabs and buttons, information about connected units and a configuration list area.
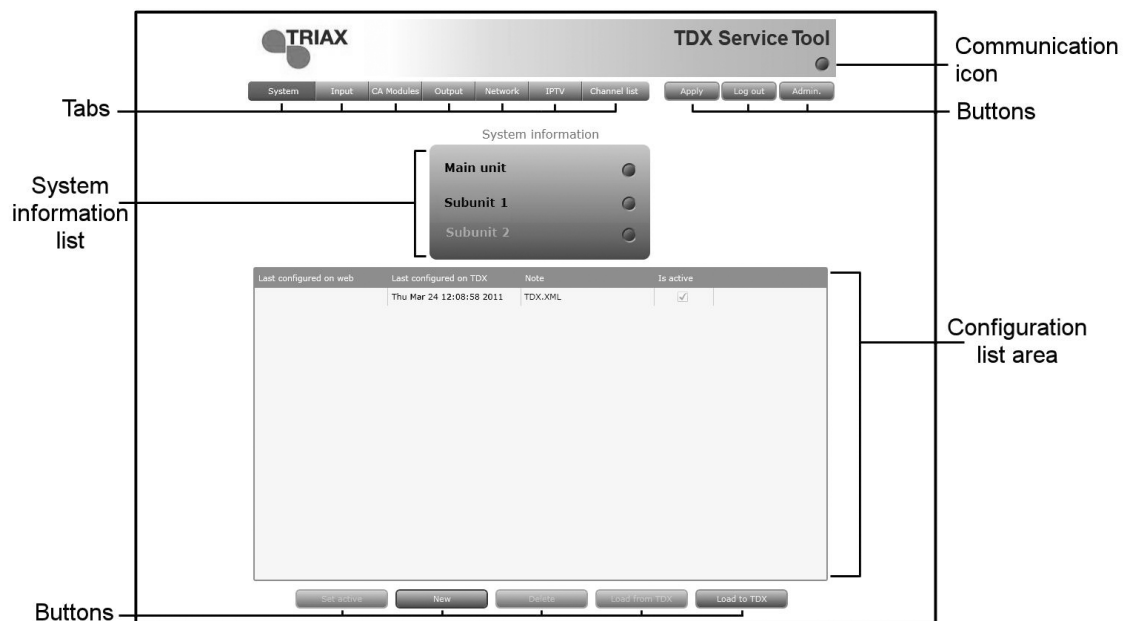
Communication icon

Informs you when the communication between the TDX system and the TDX Service Tool fails. For more information, see "Communication icon" on page 10.

Tabs

Via the tabs you enter the different stages of setting up your input and output modules.

Buttons

The buttons in the upper right-hand corner deal with the TDX Service tool whereas the buttons below the configuration list area deal with the entire setup itself.

System information list

This list displays whether any subunits are connected to the main headend unit and also whether they are functioning.

Configuration list area

This list area will display the present configuration of your headend system as well as the previous versions of the configuration.

Note

In connection with every **new** headend system the System window in the TDX Service Tool will display an empty configuration list area.

TDX Service Tool

Communication icon

The colour of the communication icon tells you when TDX Service Tool is not communicating properly with the TDX headend system.

Green: The TDX Service Tool and your TDX headend system exchange information without any problems.

Red: The TDX Service Tool and your TDX headend system are not communicating properly. Press the F5 button to refresh the Internet browser and renew communication between the TDX Service Tool and the headend system.

Communication icon - red
no communication

Communication icon - green
communicating

Administration window

To change password and language you have to open the Administration window by clicking the Admin. button in the top right-hand corner of the System window.

Click the Administration button

Click the Admin. button to open the Administration window.

Language settings

When you have opened the Administration window the Language settings area is displayed.
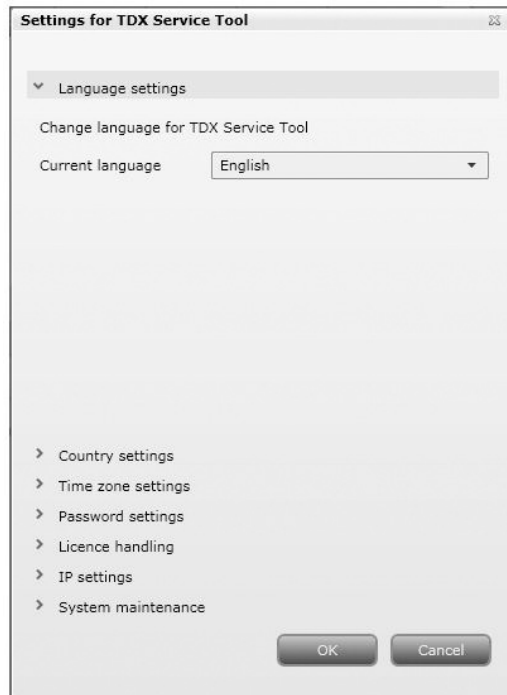
To select another language, click the arrow to the right of the Current language field to open the drop-down list with the languages you can choose from.
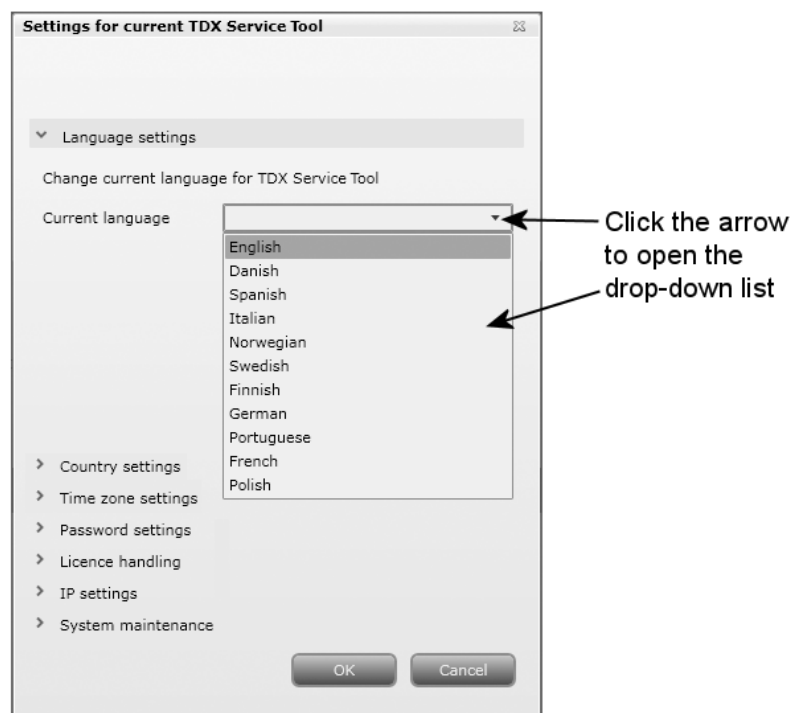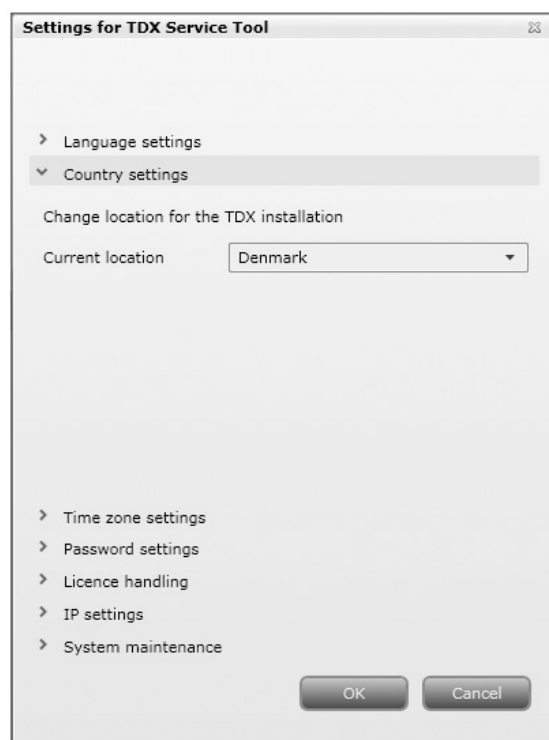

Select the language you want to use in the TDX Service Tool.

The language you selected is now displayed in the Current language field.

TDX Service Tool

Country settings

To enter the Country settings area, click the arrow bracket to the left of Country settings.
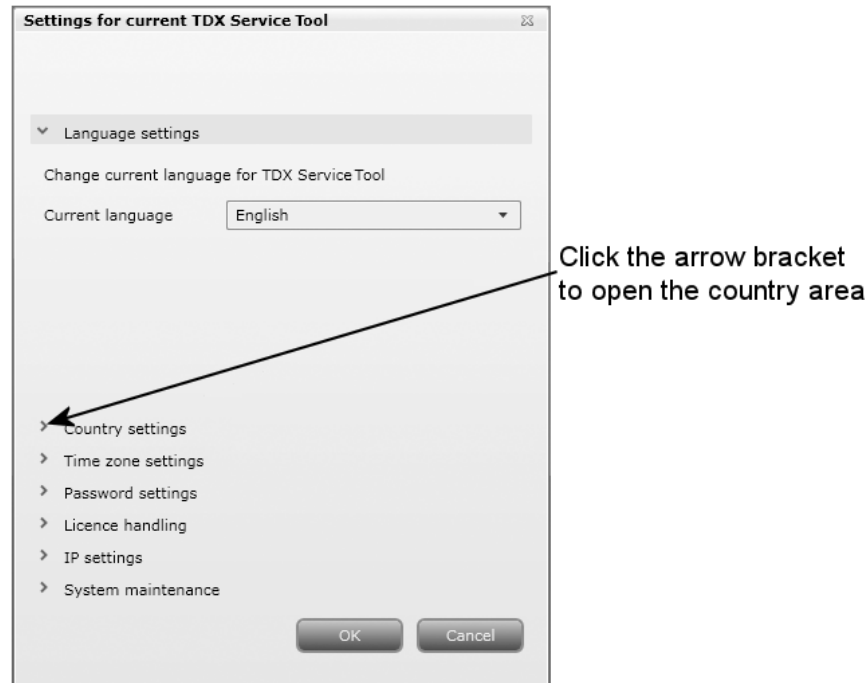
Now you can see the fields of the Country settings area.

To set the location of your TDX headend system, click the arrow to the right of the Country field to open the drop-down list with the countries you can choose from.
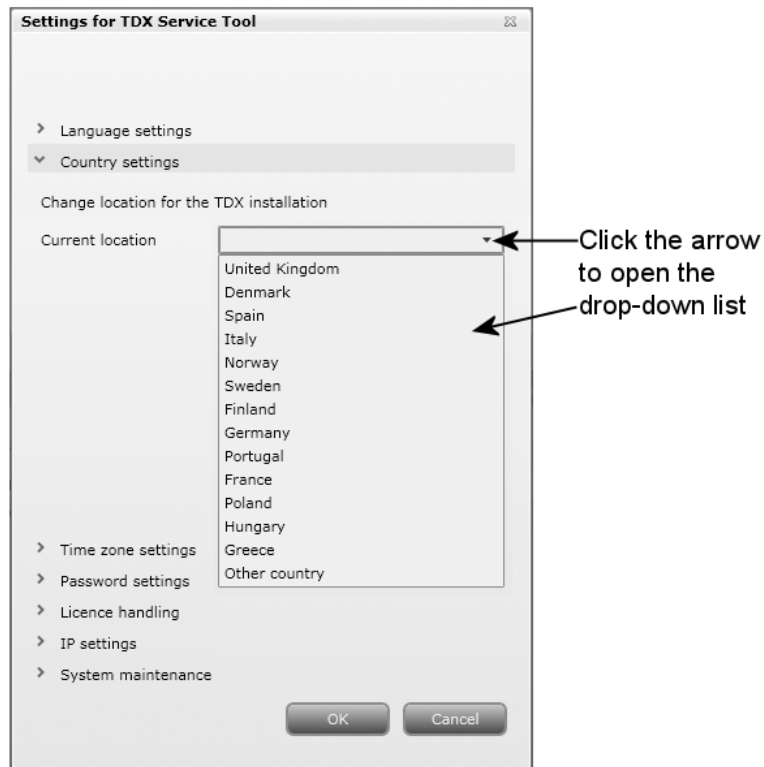
Select the country in which your TDX headend system is located. The country you selected is now displayed in the Country field.

Time zone settings

To enter the Time zone settings area, click the arrow bracket to the left of Time zone settings.
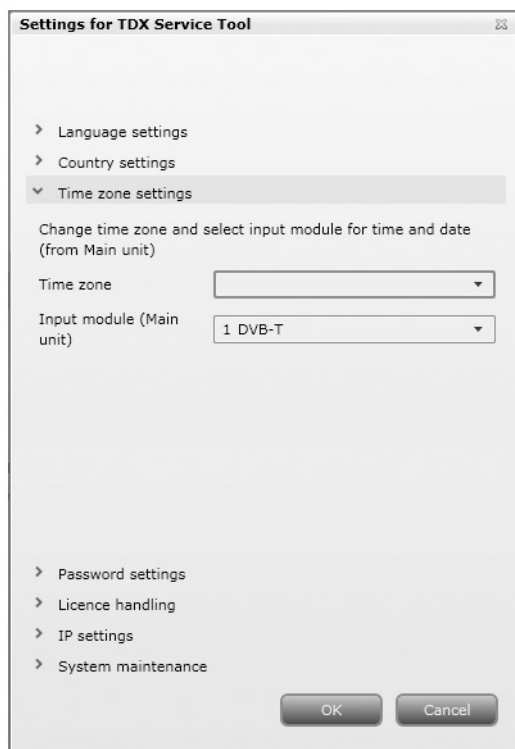
TDX Service Tool

To set the time zone of your TDX headend system, click the arrow to the right of the Time zone field to open the drop-down list with the time zones you can choose from.
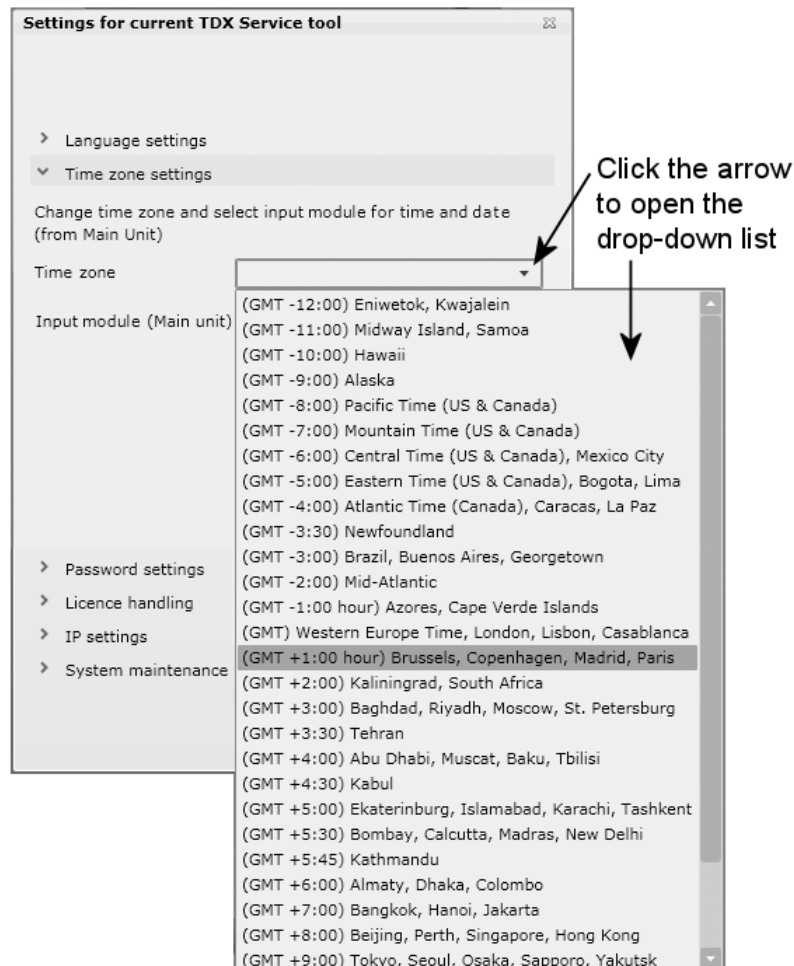
Select the time zone you want to use in connection with your TDX headend system.

The time zone you selected is now displayed in the Time zone field.

To set time in accordance with the time zone, click the arrow to the right of the Input module field to open the drop-down list with all the input modules installed in your main unit.
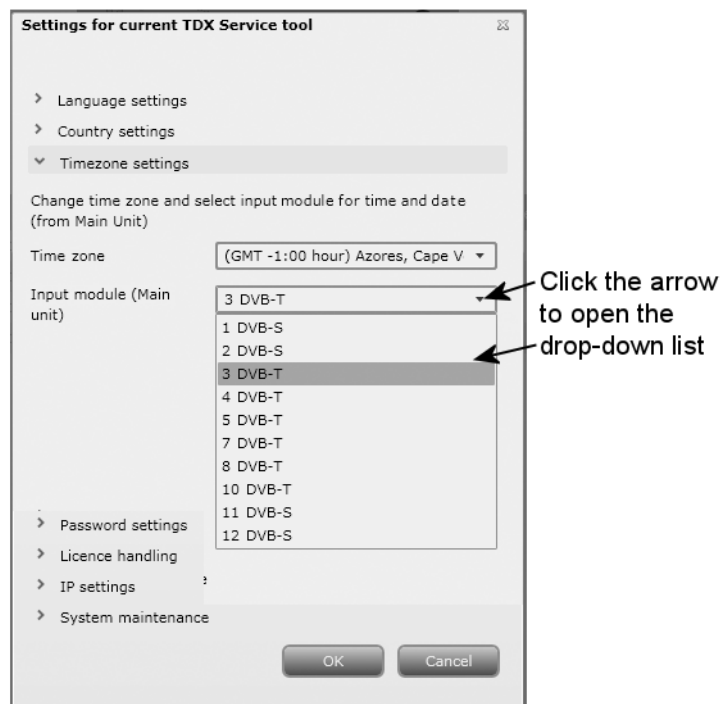
Select the input module you want to use for setting the time. The input module you selected is now displayed in the Input module field.

Password settings

To enter the Password settings area, click the arrow bracket to the left of Password settings.

To change password enter the old password in the Old password field.

Enter the new password in the New password field.
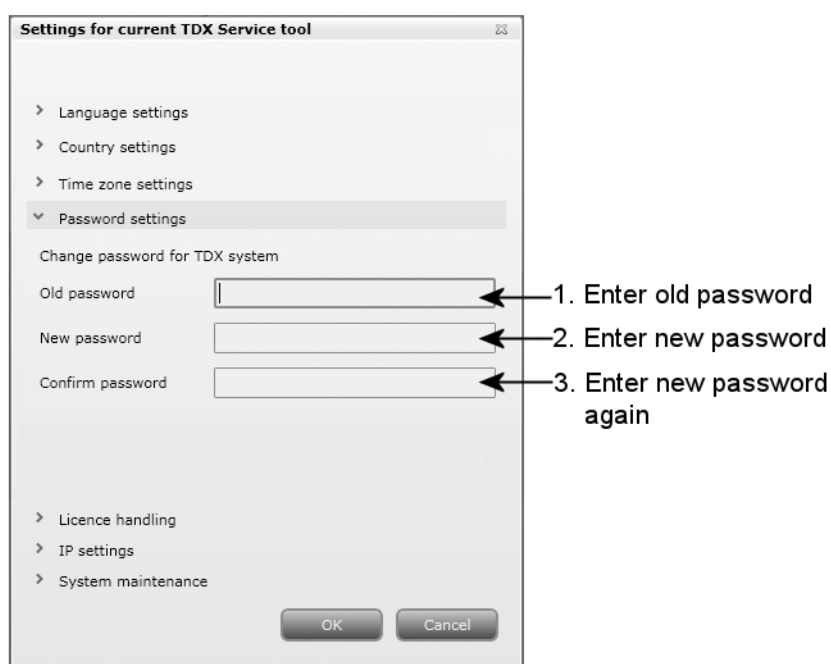
To verify the new password enter the new password once more in the Confirm password field.

TDX Service Tool

Licence handling

If you have bought licences to output services using e.g. IPTV you have to activate these licences in your TDX headend system using Licence handling in the Administration window.

To enter the Licence handling area, click the arrow bracket to the left of Licence handling.

Before you can activate a licence you have to contact Triax and provide information about the serial number displayed in the Serial number field and the ID displayed in the TDX unique ID field.

When Triax has received the ID of your TDX they will provide you with the activation key.

1. Enter activation key
2. Click the Activate button

Enter the activation key in the Activation key field then click the Activate button to access the licence you have bought.

Information about the number of licences you have bought

Note   When you have clicked the Activate button to access your licence your TDX unique ID is changed and the activation key is deleted.

If you want to buy more licences you will have to contact Triax with the new TDX unique ID to get a new activation key to access an additional licence.

When you have accessed your licence you use e.g. the IPTV tab to select the services you want to output in connection with the licence.

IP settings   If your TDX headend system is part of a network you have to change the IP address of the configuration port to include the main unit in the network.

To enter the IP settings area, click the arrow bracket to the left of IP settings.

Enter new IP address
Enter new subnet mask
Enter new default gateway

Enter a new IP address, subnet mask and default gateway in the corresponding fields.

In case you need to reset the IP address to the factory default address, you have to use the ID switch.

To return to factory default settings do the following:

• Switch off the power to the main unit.
• Set the ID switch on the main unit to "7", then switch on the power. The four LEDs flash red and yellow until the process of resetting the IP address has been completed.

  If the reset process has been successful the LEDs will turn green.

  If the reset process fails the LEDs will turn red.

• Switch off the power to the main unit.
• Set the ID switch on the main unit back to the initial setting.
• Switch on the power to the main unit.

Now you have reset the IP address to the factory default address.

Important   To make a changed IP address take effect you have to reboot the TDX headend system using the Reboot button in the System maintenance area or switch off the power.

To output services using an IPTV system or to include a subunit in a network you have to enter an IP address, subnet mask and default gateway for each unit link socket you use.

With regard to IPTV you also have to enter a multicast IP address and a multicast port for each unit link socket you use. .

To enter the IP settings area, click the arrow bracket to the left of IP settings. Now click the Unit link 1 tab to display the relevant fields.

Enter a new IP address, subnet mask and default gateway in the corresponding fields.

In connection with IPTV the fields at the bottom of the area are needed as well.

Click the Enable RTP protocol check box if you want to use Real-time Transport Protocol in your IPTV system.

In case you cannot use the default values displayed in the two fields, enter a new multicast IP address and a multicast port in the corresponding fields.

Click the Unit link 2 tab if you have connected an IPTV system or a second subunit to the Unit link 2 socket and enter an IP address, subnet mask and default gateway and in connection with IPTV also a multicast IP address and a multicast port.

Important To make a changed IP address take effect you have to reboot the TDX headend system using the Reboot button in the System maintenance area or switch off the power.

When you have made the changes you want to make in the Administration window, click the OK button at the bottom of the Administration window to save the changes and return to the System window.
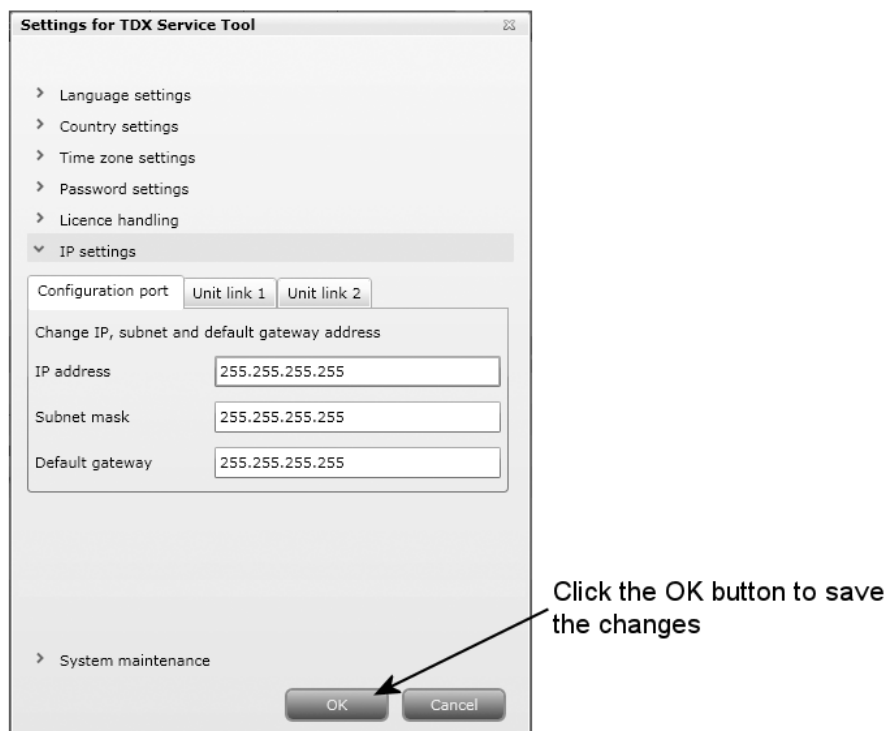
Note You only need to change password, language, time zone, country and IP addresses the first time you enter a new TDX headend system in order to set it up.

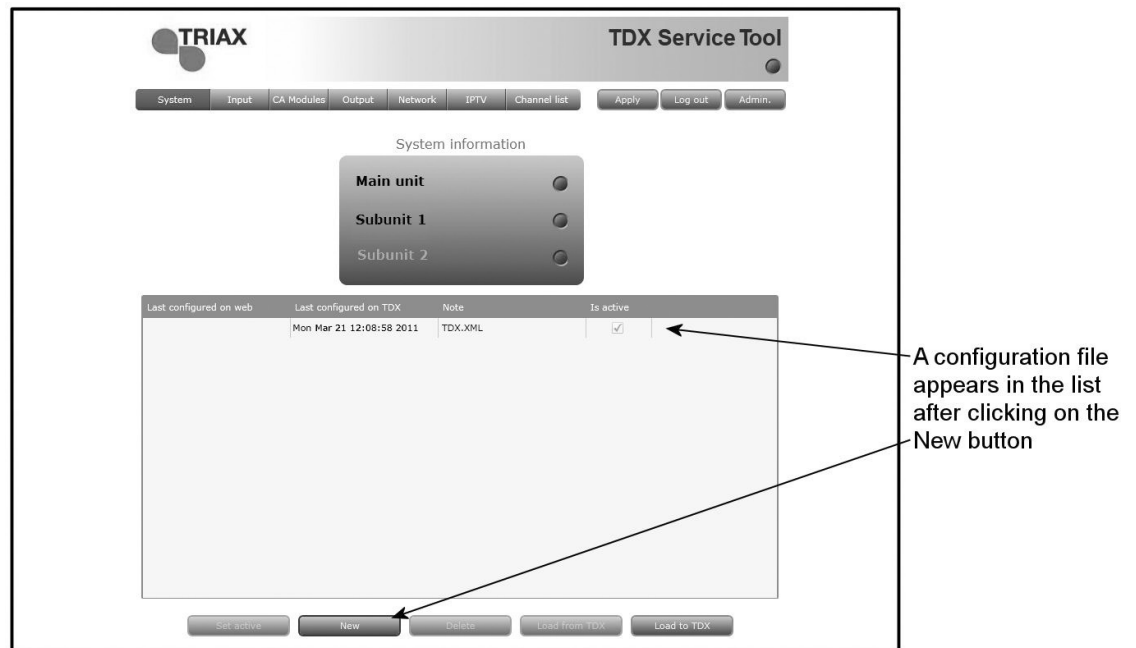**WARNING - All unsaved changes will be lost in case of a power cut**
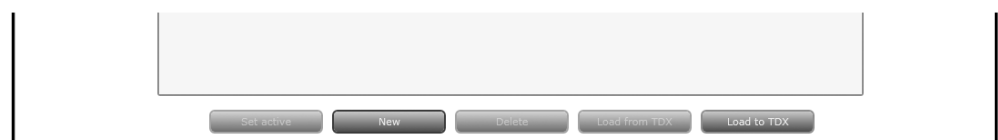

Create a new system configuration

To create a new configuration, click the New configuration button in the System window.

Now a configuration file is created and the file is listed in the configuration list area.

A configuration file appears in the list after clicking on the New button

You use the buttons below the configuration list area to manage configuration files in your headend system.

Set active   Click this button when you want to activate a selected configuration file.

New   Click this button to create a new configuration file.

Delete   Click this button to delete a selected configuration file.

Load from TDX   Click this button to upload the configuration file from the TDX system to your computer/laptop. More information about uploading, see "Load from TDX" on page 40.

Load to TDX   Click this button to download a configuration file from your computer/laptop to your TDX system. More information about downloading, see "Load to TDX" on page 39.

To activate a new configuration file, select the file and click the Set active button, and the Apply button to save the configuration file.

TDX Service Tool

Save configuration

An **important button** when you change your configuration of the headend system is the Apply button placed in the upper right-hand corner of the TDX Service Tool window.


Click the Apply button to save the changes

Apply

Whenever you have made changes in your configuration, "Apply" on the Apply button turns red to tell you that you have unsaved changes that need to be saved.

Click the Apply button to **save** the changes. When changes have been saved the "Apply" text looses the red colour.

WARNING - All unsaved changes will be lost in case of a power cut

Change system configuration

When you change an existing configuration of your headend system the TDX Service Tool updates the date and time of the configuration file when you save the changes using the Apply button.

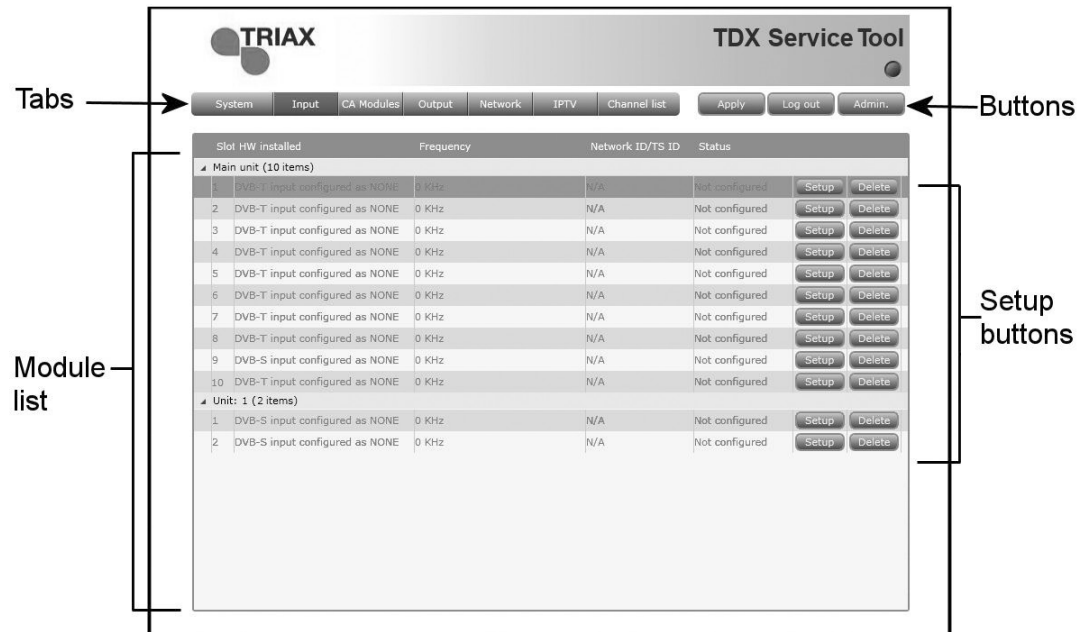Date and time of configuration file have been updated
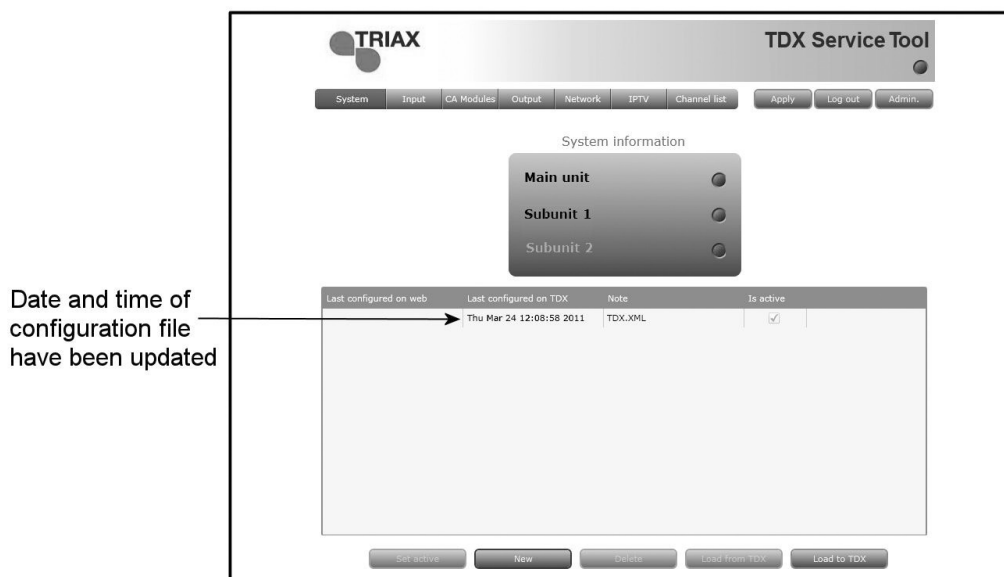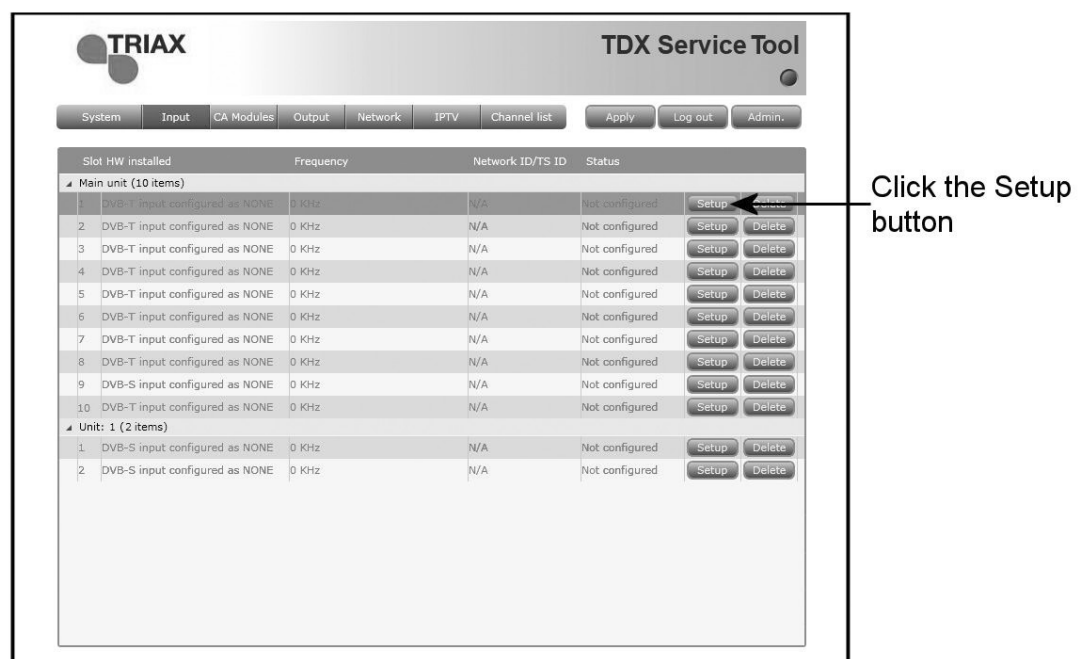
TDX Service Tool

Input window

Click the Input tab in the TDX Service Tool to display the Input window.

The first time you display the Input window in a new configuration the module list only displays the number and type of input modules that you have inserted in the main and subunits.
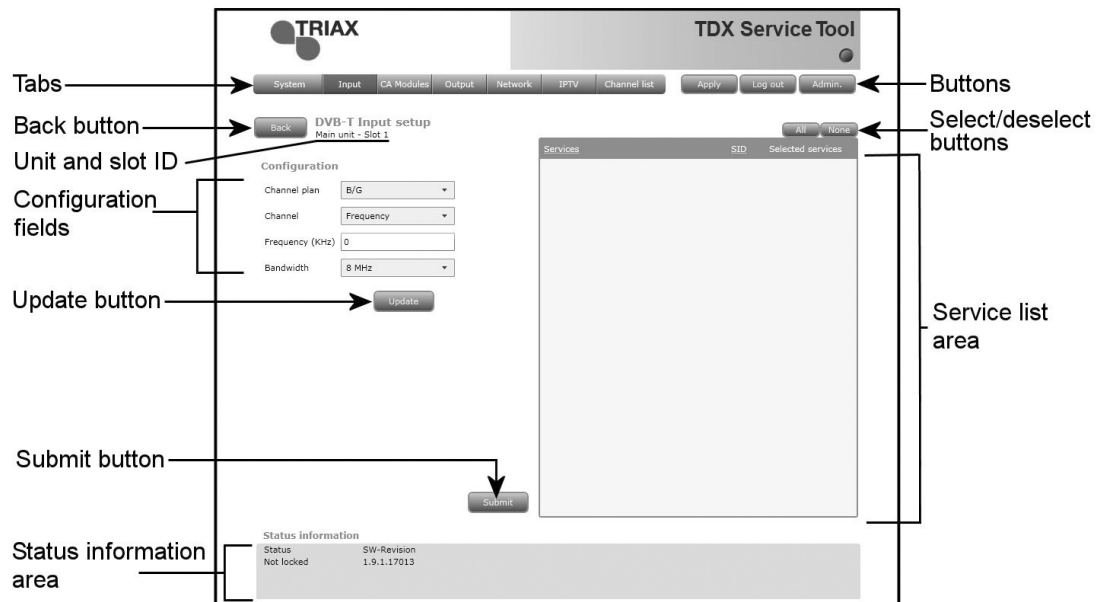
Tabs →

Buttons

Module list

Setup buttons

You have to configure the input modules one by one.

To display the Configuration window, click the Setup button of the DVB-T input module you want to configure.

Click the Setup button

TDX Service Tool

Configuration of input module

Tabs
Back button
Unit and slot ID
Configuration fields
Update button
Submit button
Status information area

Buttons
Select/deselect buttons
Service list area

The first time the TDX Service Tool displays the Configuration window for a DVB-T input module in a new configuration, the fields will display default values and the list of services will be empty.

You have two possibilities when you configure a DVB-T module:
• You can use the specifications of the channel plan
or
• You can enter a frequency manually in order to search for the services you require.

Using the channel plans:
To select the required channel plan, click the arrow to the left of the Channel plan field to open the drop-down list with the channel plans you can choose from.
Select the channel plan you want to use.

To select the required channel, click the arrow to the left of the Channel field to open the drop-down list with the channels you can choose from.
Select the channel you want to use.

When you have selected a channel the Frequency and Bandwidth fields are automatically filled in.

Click the Update button to enter the information into the headend system and in return get a list of available services.

1. Select channel plan
2. Select channel

3. Click the Update button
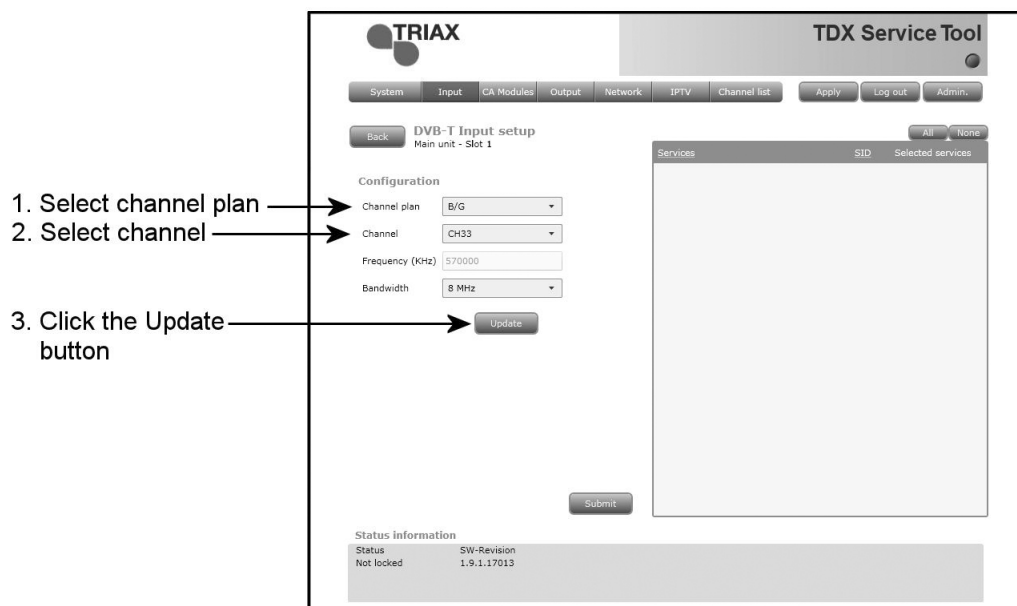
Enter frequency manually:

To be able to enter a frequency manually, click the arrow to the left of the Channel field to open the drop-down list with the channels you can choose from.
Select "Frequency" from the drop-down list.

Enter the desired frequency in kHz in the Frequency field.

To select the required bandwidth, click the arrow to the left of the Bandwidth field to open the drop-down list with the bandwidths you can choose from.
Select the bandwidth you want to use.

Click the Update button to enter the information into the headend system.

1. Select "Frequency" in the list
2. Enter desired frequency
3. Select bandwidth
4. Click the Update button
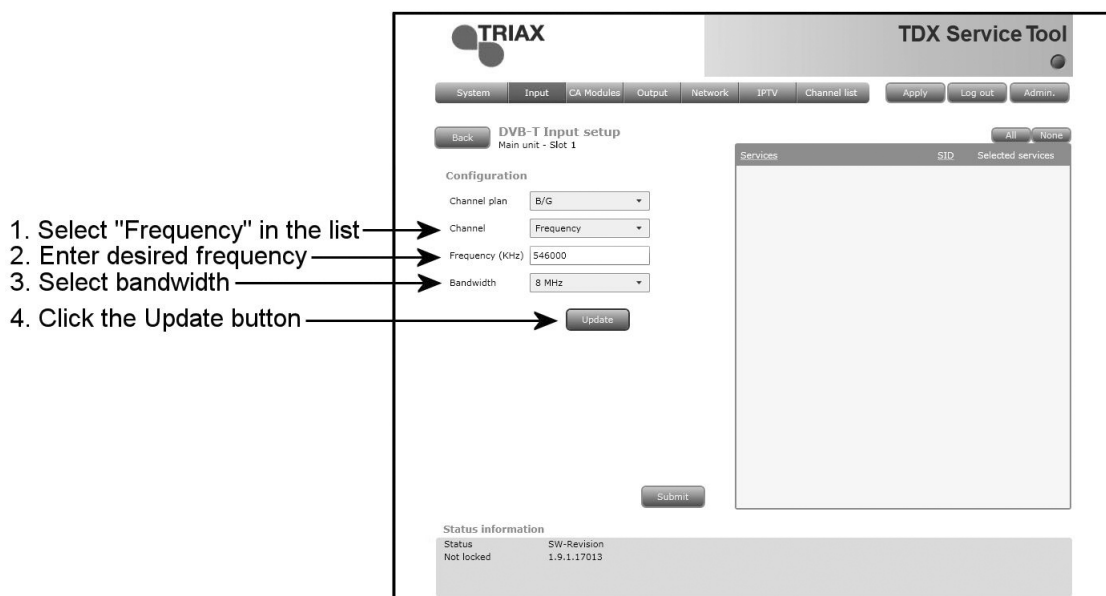
As a result a list of available services is displayed in the services list area.

TDX Service Tool

To select services you can either select all services in the service list area by clicking the All button at the top of the list or select the services one by one clicking the square to the right of the services you want to make available in your TDX service pool.

Click the All button to select all the services in the list

Click the squares one by one to select the services one by one

Note   By clicking one of those column headlines that are underlined in the service list area you can sort the list into alphabetical or numerical order depending on which column headline you click.

When you have selected the services you want, click the Submit button to save this information in the headend system and return to the Input window.

Now the selected services are available in the TDX service pool.

Click the Submit button to save your selections

Remember to click the Apply button in the upper right-hand corner from time to time to save new settings in the configuration.

Note   When you display the Configuration window for an input module that has been configured, all fields are filled in and services have been selected.

If you want to change the existing channel plan, channel, frequency, bandwidth or services just follow the same procedure as when you configure an input module for the very first time.

Status information

Status information is placed at the bottom of the Configuration window. The information displayed in the configuration window of a DVB-T module includes the status of the module and revision of software.

Information

Status   Informs you whether the input module is locked or not.

SW revision   Displays the software version of the input module.

When you return to the Input window the configuration of the input module is displayed in the module list.

Input module that has been configured

Now you can continue to configure the other input modules one by one, following the procedure described on the previous pages.

Delete setup   If you want to remove an input module and the associated configuration you can use the Delete button of the module in question in the Input window.
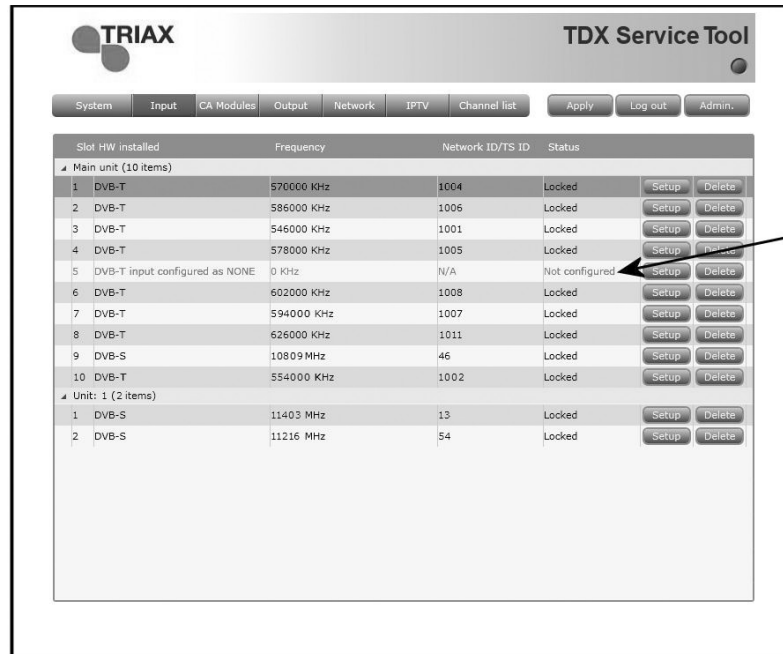
Click the Delete button of the DVB-T input module you want to remove.
A message window is displayed asking you to confirm that you want to remove the input module.

Until you have removed the input module physically from the headend unit the module list will display an empty line.

The configuration has been deleted

Log file

You can save a log file that lists actions that have occurred in the TDX headend system. This may be useful in case of problems with your TDX headend system.

The size of the log file will be adequate for listing all actions that have occurred in the system for a couple weeks.

To save a log file on your computer/laptop you have to open the Administration window.

Click the Admin. button in the top right-hand corner of the TDX Service Tool window to open the Administration window.
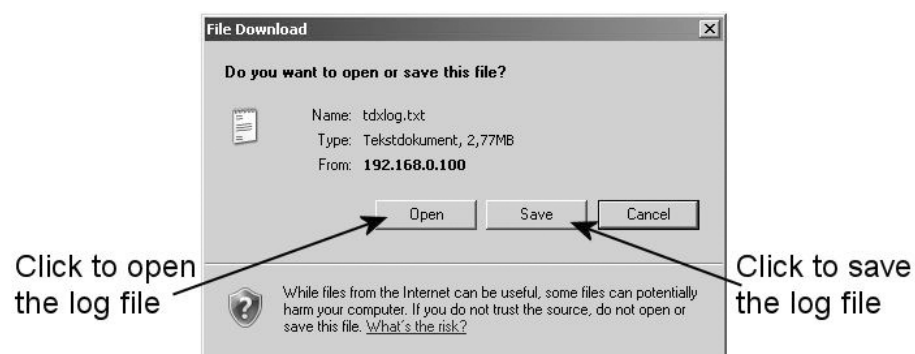

Click the Administration button

TDX Service Tool

To enter the System maintenance area, click the arrow bracket to the left of System maintenance.
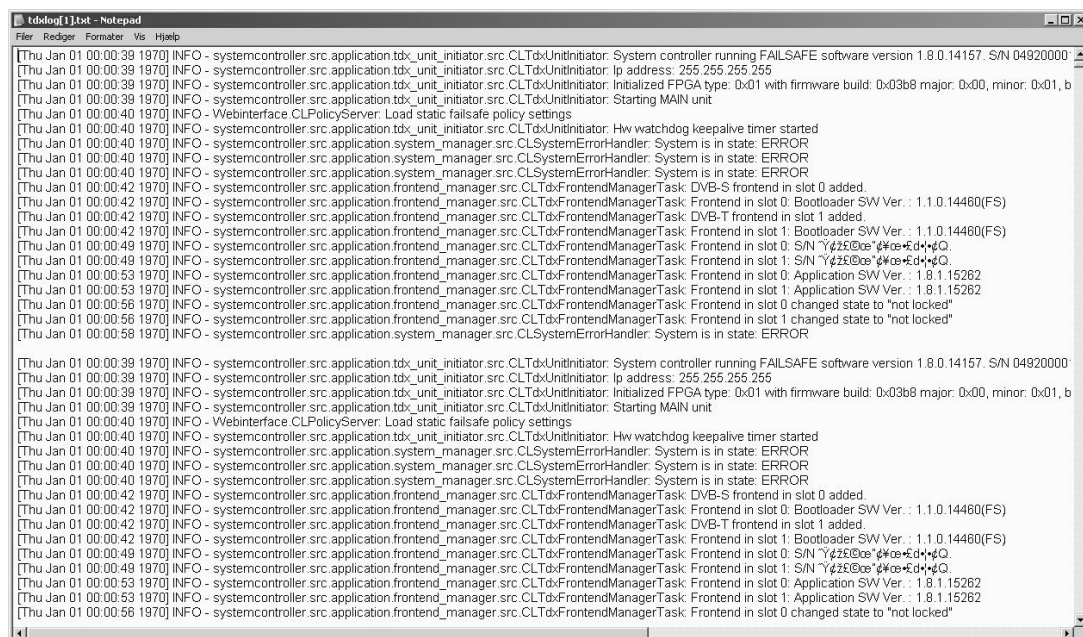
In the System maintenance area click the Save log button to open the File Download window.

In the File Download window you can either open the log file or save the file to your laptop/computer.

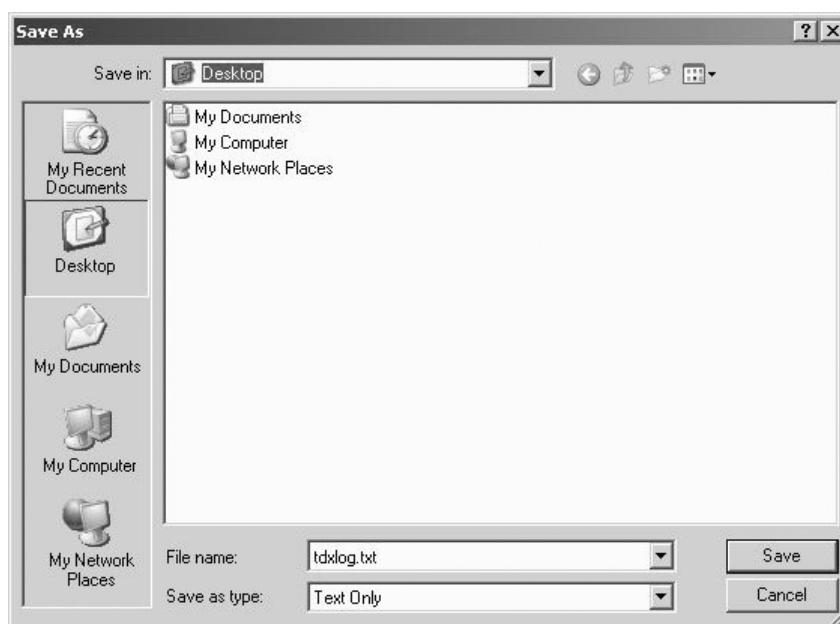If you want to open the log file click the Open button in the File Download window.

In case you need to save the log after having looked at the file in the Note-pad window you can use the Save as command in the File menu of the Note-pad window.

If you only want to save the log file when you open the File Download win-dow, click the Save button to open the Save as window.
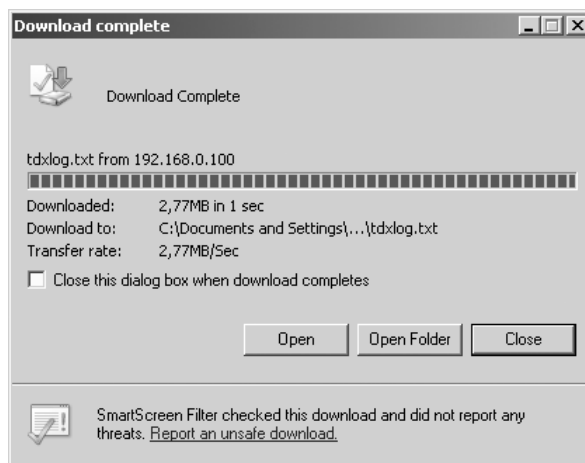

Navigate to the folder where you want to place the log file.
Click the Save button to save the file.

TDX Service Tool

1. Navigate to the desired folder

2. Click to save the file
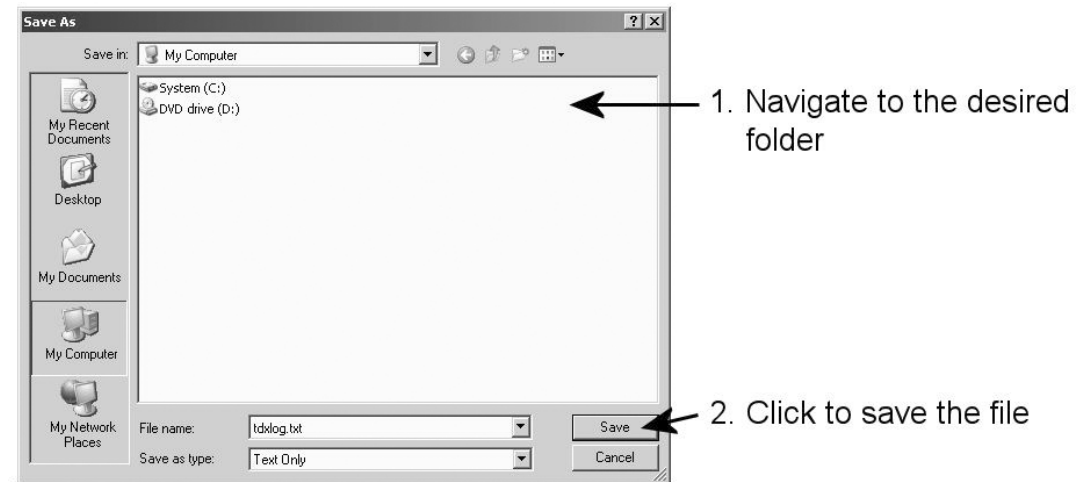
Clicking the Save button displays the Download window.

When the log file has been downloaded and saved, you can open the log file, open the folder where you have saved the log file or just close the window.

When you close the Download window you return automatically to the Administration window. Close this window by clicking the OK or Cancel button.

Update firmware

When firmware updates for your TDX system is available on the Triax home page, www.Triax.com, you can download these updates to your computer and then upload the updates to your TDX system using the Administration window.

Click the Admin. button in the top right-hand corner of the TDX Service Tool window to open the Administration window.


Click the Administration button
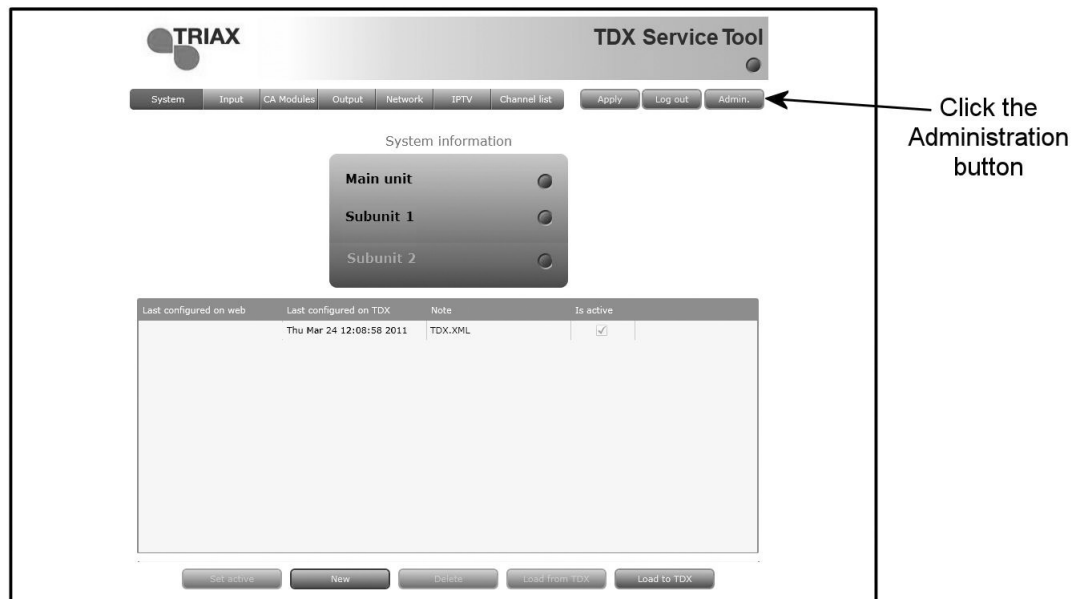
To enter the System maintenance area, click the arrow bracket to the left of System maintenance.

Click the Change... button to the right of the version number of the current firmware to open the Firmware window.

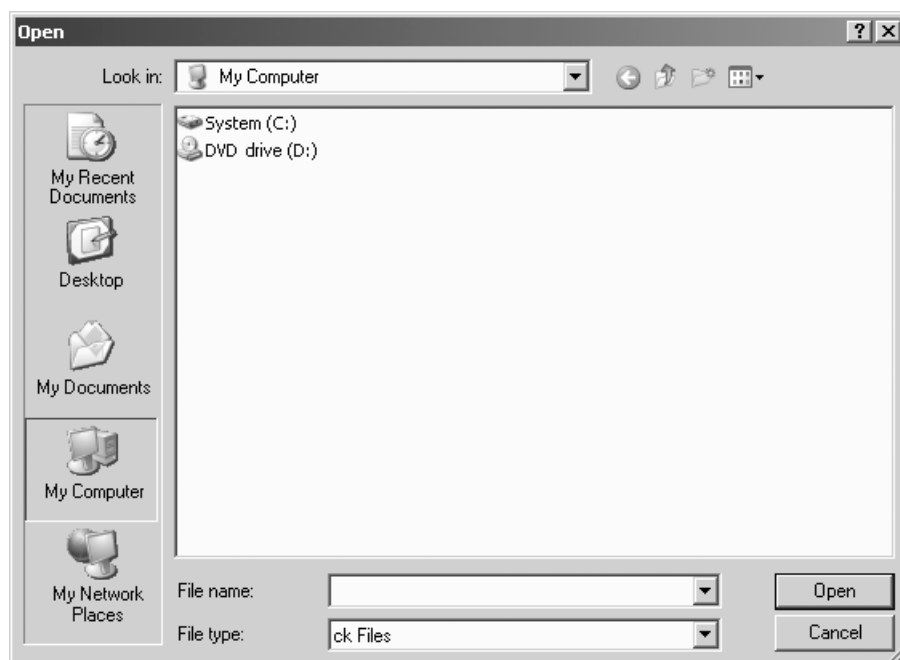Click the Change... button to open the Firmware window
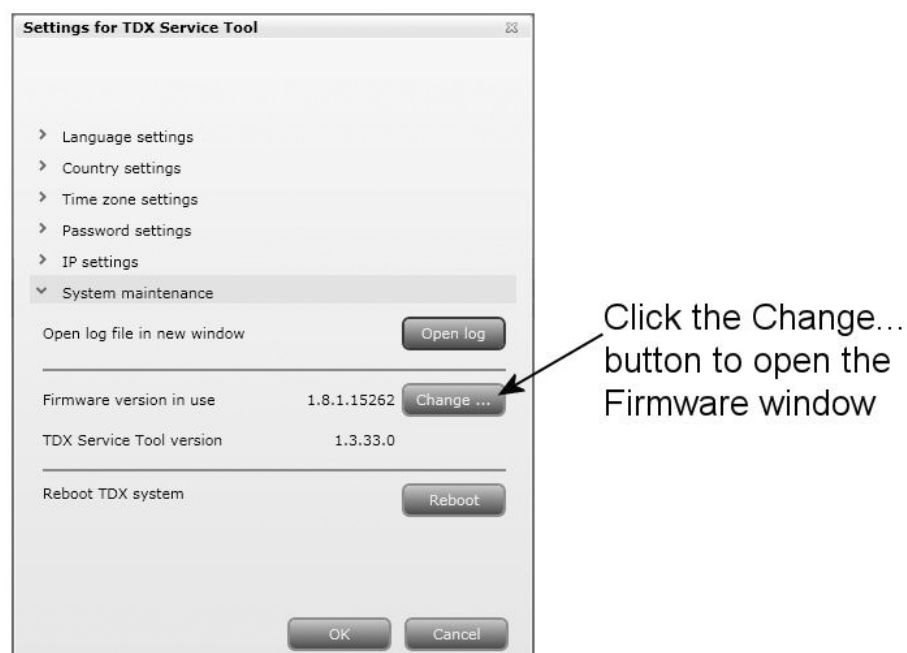
TDX Service Tool

The Firmware window lists the current version of your TDX firmware as well as the previous versions of the firmware.
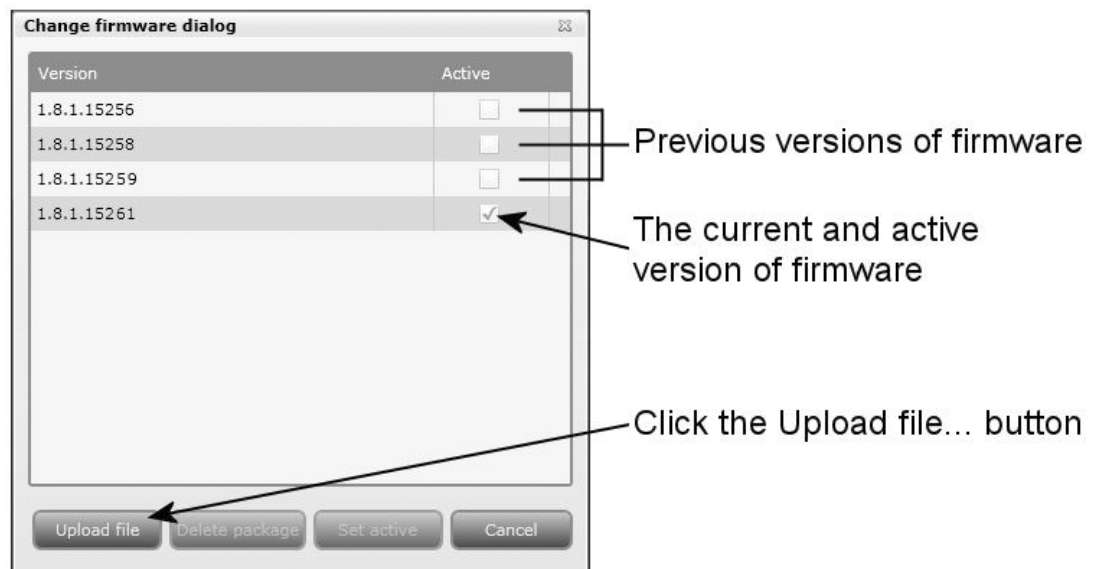
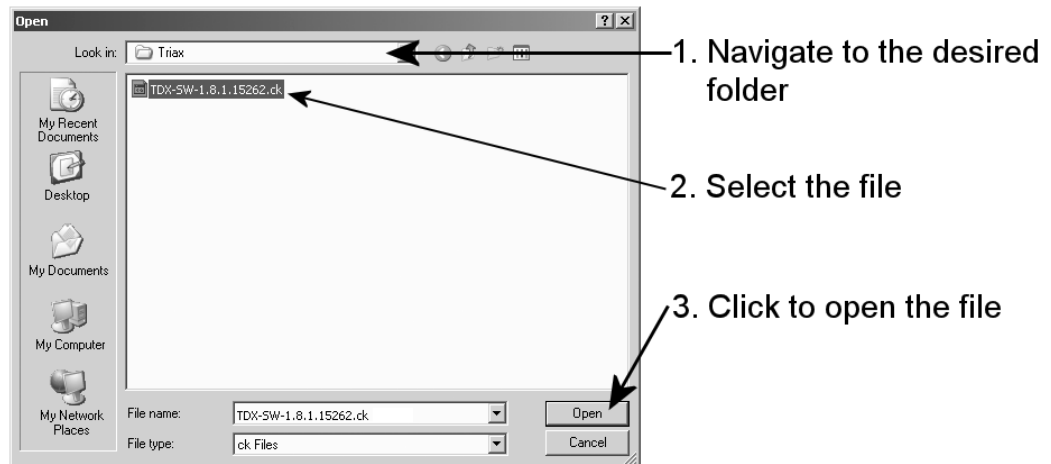Click the Upload file... button to display the Open window.

In the Open window navigate to the folder where you saved the update file when you downloaded it from the Triax home page.

Select the file.

Click the Open button to include the file in the list in the Firmware window.

1. Navigate to the desired folder

2. Select the file

3. Click to open the file

When you have clicked the Open button you return to the Firmware window. In the Firmware window the new update file is placed at the bottom of the list of updates.

Click the file name to select the file and then click the Set active button to transfer the update to the TDX system.

1. Click the file name

2. Click the Set active button
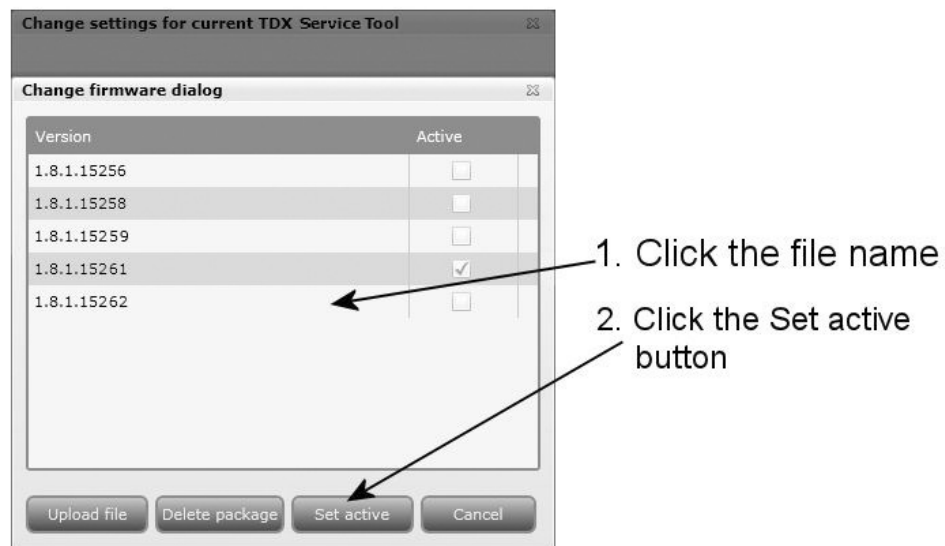
Clicking the Set active button displays the Firmware update window. In this window you select whether you want to update all firmware, i.e. modules, system controller and user interface, or only firmware that is in need of an update.

Triax recommend that you use the Replace all option when you want to update your firmware.
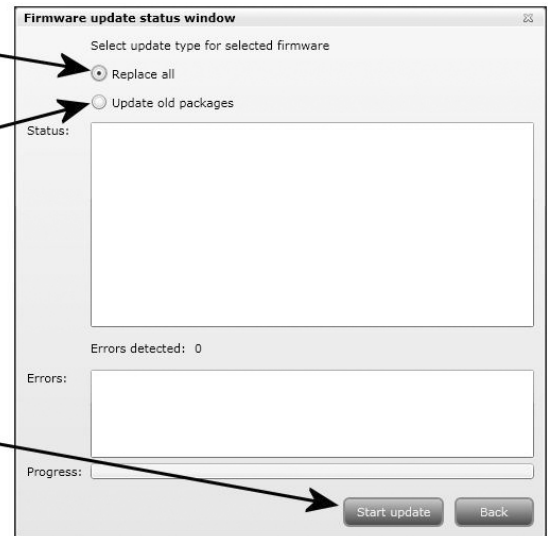
You should only use Update old packages if your TDX headend system consists mainly of new modules and a few older modules that might benefit from an update.
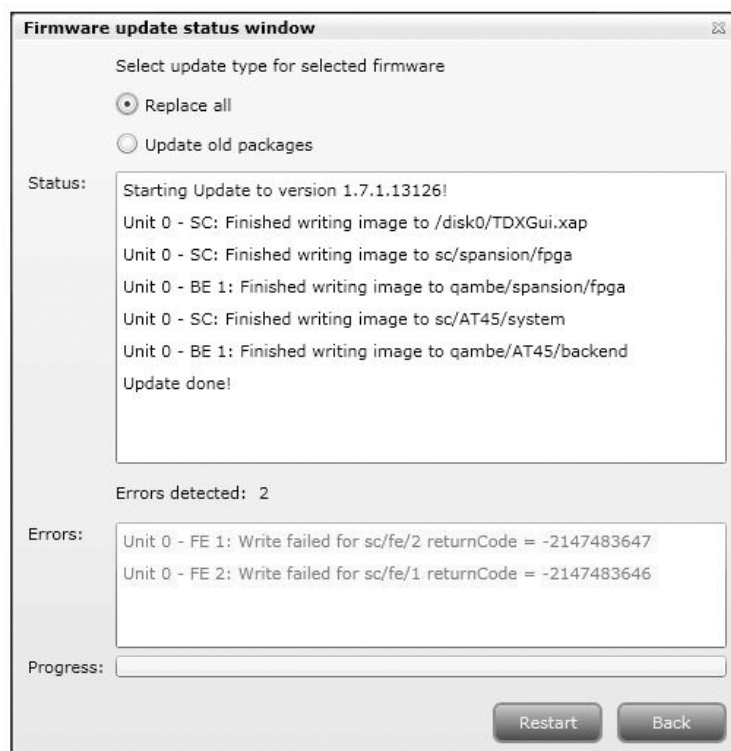
TDX Service Tool

1. Click to update all firmware
   or
   click to update only firmware
   that needs updating

2. Click the Start update button
   to start updating

When updating the firmware, the Firmware update status window will display information about status and errors as well as the progress of the update itself. An update will take approximately 5 minutes.
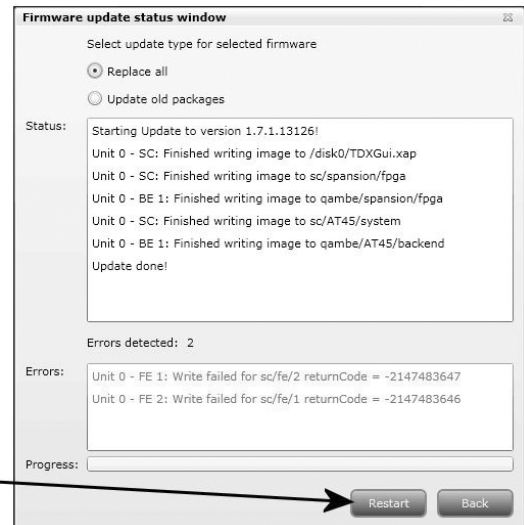

When you have finished updating the firmware you have to reboot the system by clicking the Restart button in order to make the update effective.

Important   When rebooting the TDX headend system the distribution of services to all your end-users will be interrupted for a very short time.
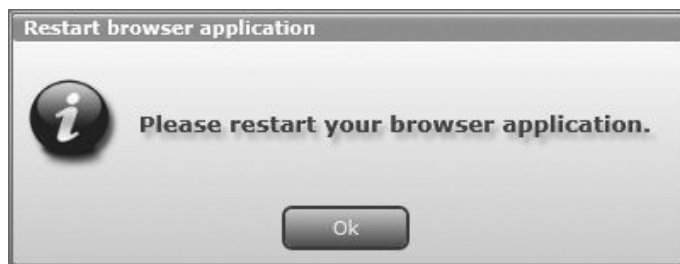
**Click the Restart button to reboot the headend system**

When you have rebooted the TDX headend system, a message window is displayed asking you to restart your Internet browser.

When you have restarted your browser you have to log into the TDX Service Tool in case you need to make any changes.

If your list of firmware updates needs to be tidied you can remove one or more of the previous firmware updates listed in the Change firmware window. Select the firmware update and click the Delete package button.

1. Select the file
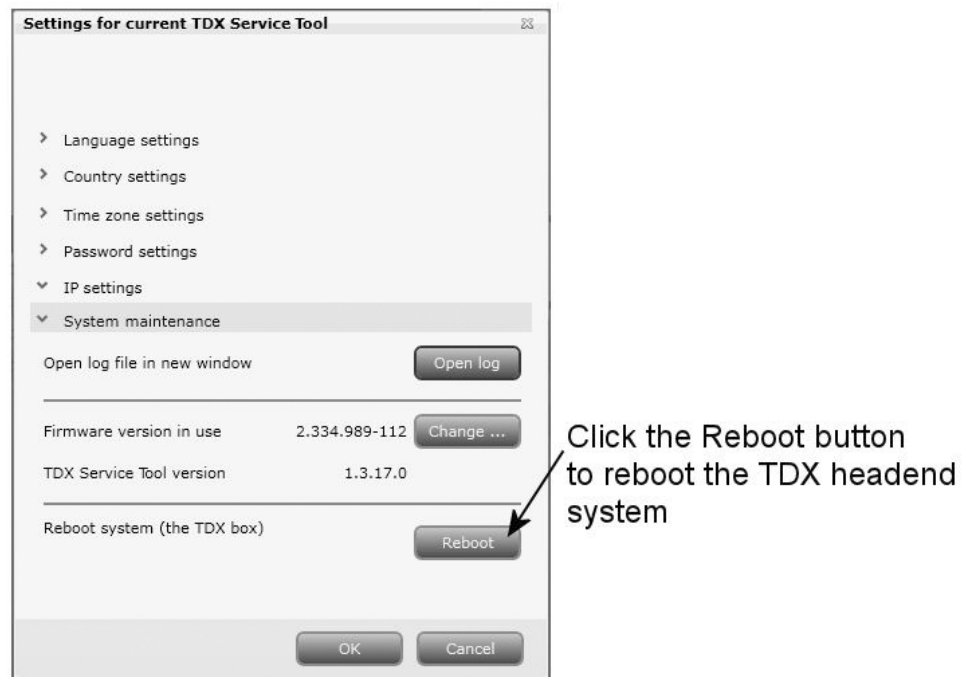
2. Click the Delete Package button
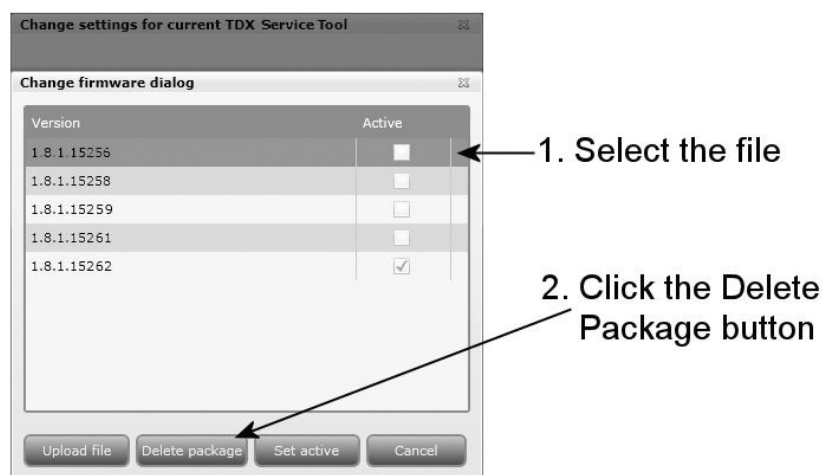
The firmware update is removed from the list.

TDX Service Tool

Reboot system

If you need to switch the TDX headend system off and then immediately start it again you can use the Reboot button in the System maintenance area of the administration window.

Click the Reboot button to reboot the TDX headend system.

Note

You can also reboot the TDX headend system by switching off the power manually.

Important

When rebooting the TDX headend system or switching off the power the distribution of services to all your end-users will be interrupted.

When the TDX system has been rebooted, you close the Administration window and restart your Internet browser.

When you have restarted your browser you have to log into the TDX Service Tool if you need to make further changes.
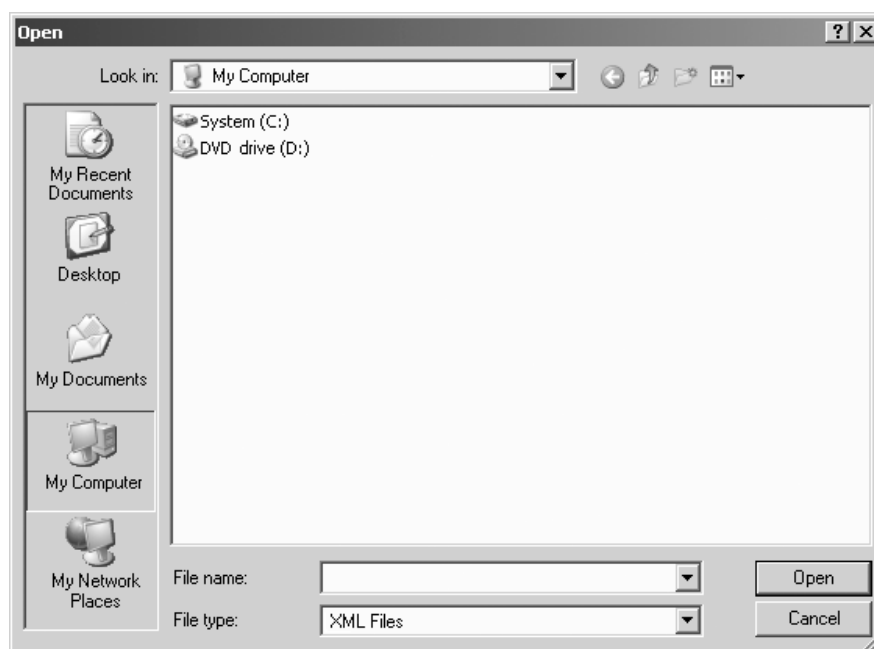
Load to TDX

In case you want to load a configuration file made using the TDX Configurator from your computer/laptop to your TDX system you have to use the Load to TDX button on the System tab.

Click the Load
to TDX button
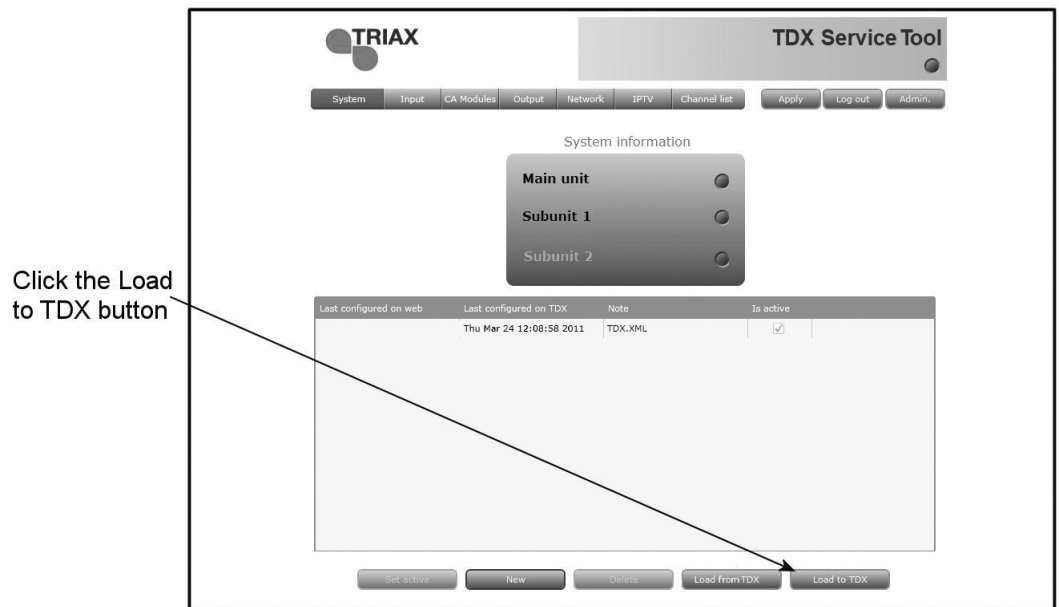
Click the Load to TDX button at the bottom of the System tab to display the Open window.

In the Open window navigate to the folder where you saved the configuration file from the TDX Configurator.

Select the file, then click the Open button to include the file in the configuration list on the System tab.

TDX Service Tool

1. Navigate to the desired folder

2. Select the file

3. Click to open the file
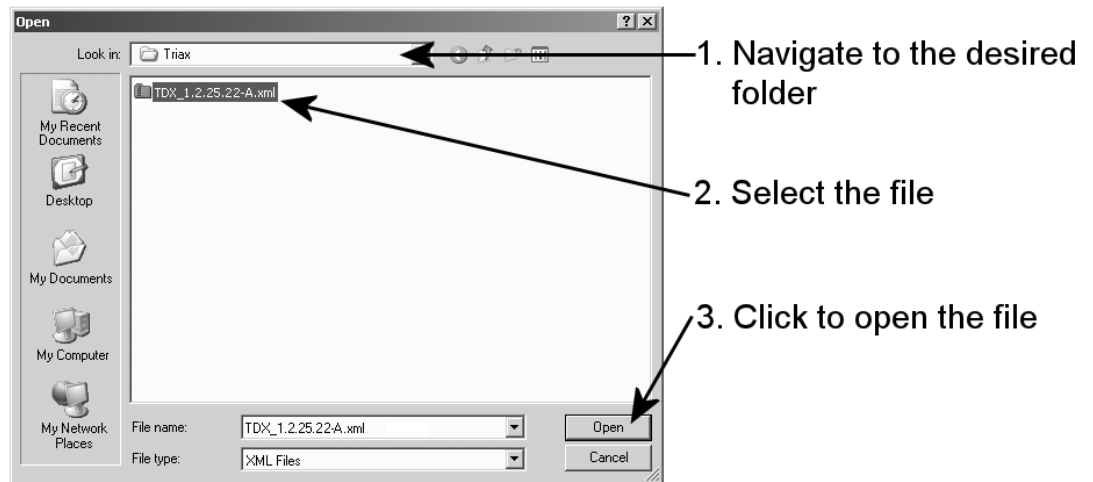
The configuration file will now be listed in the configuration list area.
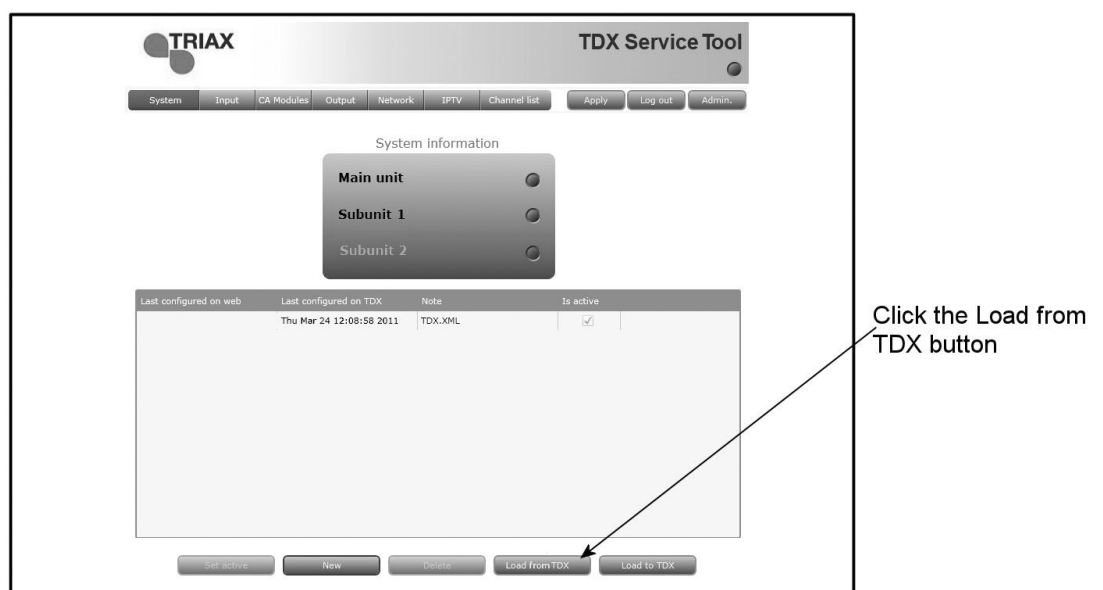
If the name of the new configuration file is identical to the existing configuration file a number in brackets will be added to the name of the new file.

Load from TDX You can save a configuration file from your TDX headend system to your computer/laptop in case you want to use it in another TDX headend system that is identical to the one from which you want to save the configuration file.

If, however, you load a configuration file into a dissimilar TDX system you will have to reconfigure all those modules that deviate from what is specified in the configuration file. All deviating modules will be marked in red.

To save a configuration file on your computer/laptop you have to use the Load from TDX button on the System tab.

Click the Load from TDX button

Click the Load from TDX button at the bottom of the System tab to display the Save As window.
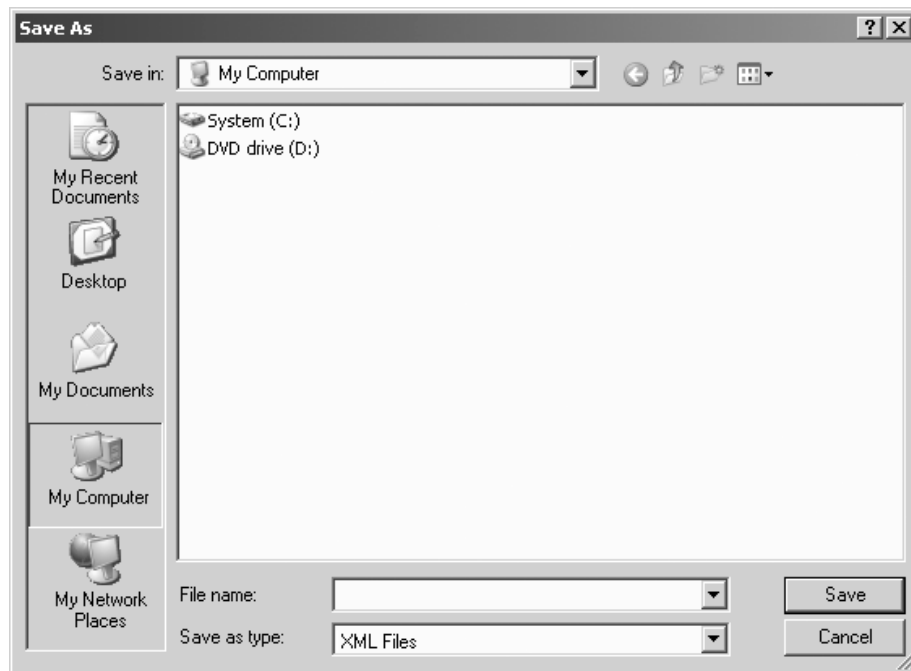
Navigate to the folder where you want to save the configuration file.
Enter the name of the configuration file in the File name field.
Select file type in the File type field.
Click the Save button to save the file.

1. Navigate to the desired folder
2. Enter file name
3. Select file type
4. Click to save the file
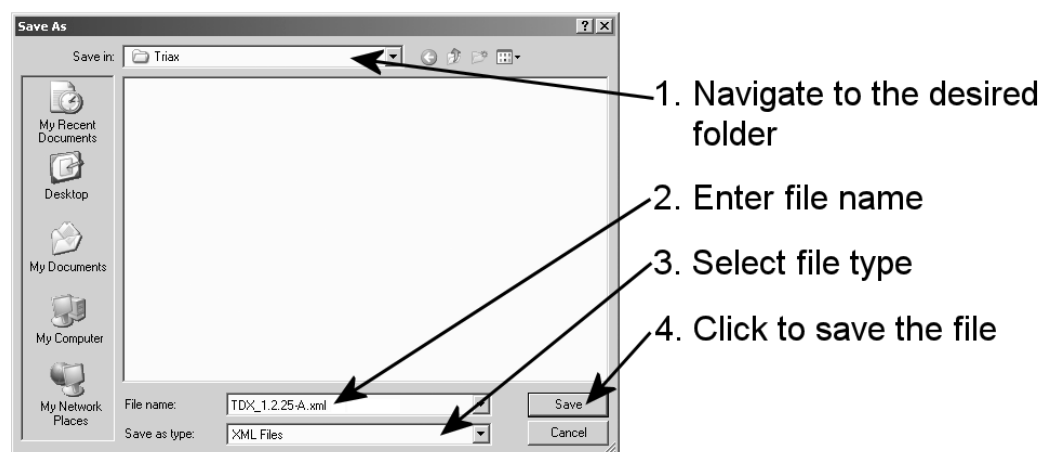
You return automatically to the System tab when you have saved the configuration file.

TDX Service Tool

System information

To get detailed information about the individual units you can click the unit in question in the System information list and open the System information window.

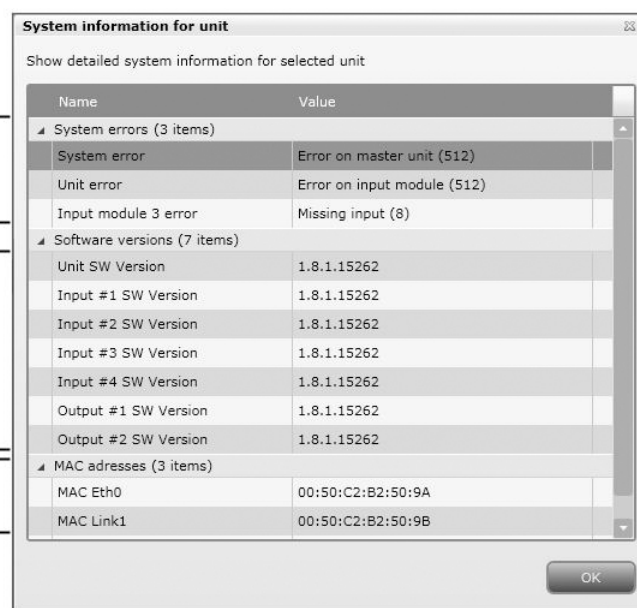Click the unit name to open the System information window
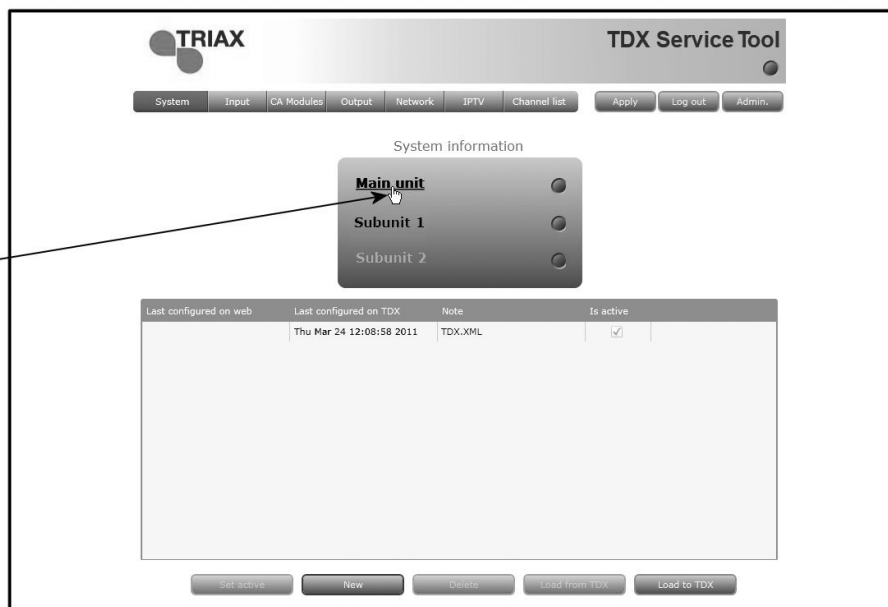
In the System information window you get information about system errors, which software version each of the input and output modules uses and the MAC addresses.

In connection with errors in your TDX headend system you can use the System information window as starting point for locating the errors.

Your notes

TRIAX - your ultimate connection