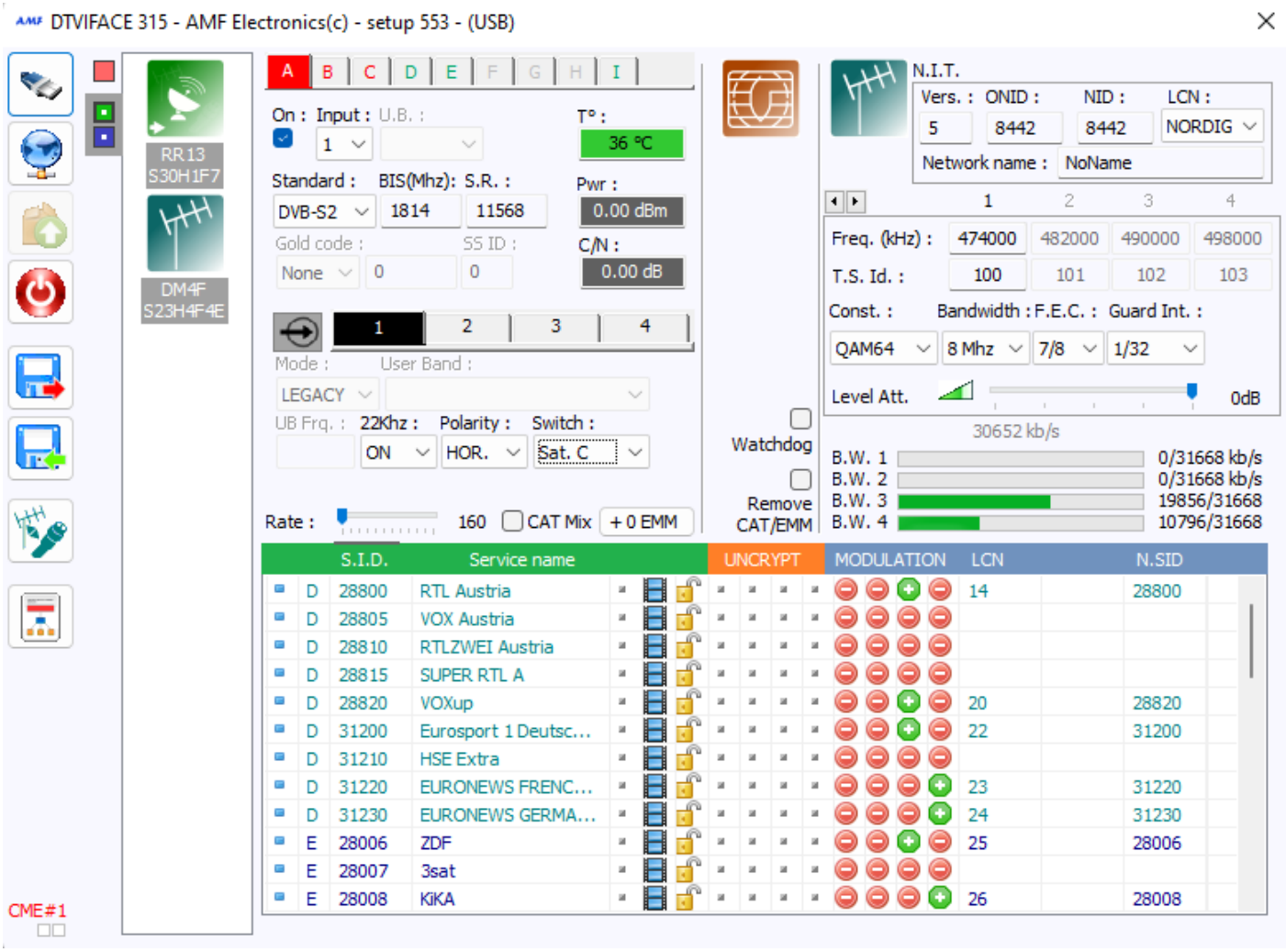
AMF ELECTRONICS
Solutions For Communications

DTVIface

Control software package for AMF Compact Headends



DTVIface is the control software for the compact headends like STC44, STM300, STM500 Series and DM343HD.

This guide will explain you how to install DTVIface on your computer, making connection through USB, making connection over local network or over the web and saving and reopening .dtc files (configurations for STC44, STM300, STM500 Series and DM343HD).

For detailed explanation on how to program the different modules, we refer to the specific manuals for these headends.

1. Compatibility of DTVIface :

DTVIface is compatible with Win 7, Win 10 and Win11. For other operating systems, we cannot guarantee the compatibility of DTVIface.

2. Downloading and installing DTVIface

Please go the website www.amfelectronics.gr. You can download the DTVIface from Downloads-> AMF Products

We are constantly improving our software. So regularly check our website to verify if you have the latest release installed on your computer.

After downloading, launch the file AMF_DTVIface_Setupxxx.exe.

DO NOT CONNECT YOUR compact headend to your computer until the installation of DTVIface is complete.

3. Launching DTVIface

Double click the DTVIface icon installed on your desktop or find DTVIface in the list of programs and launch the program.
Following screen will open :

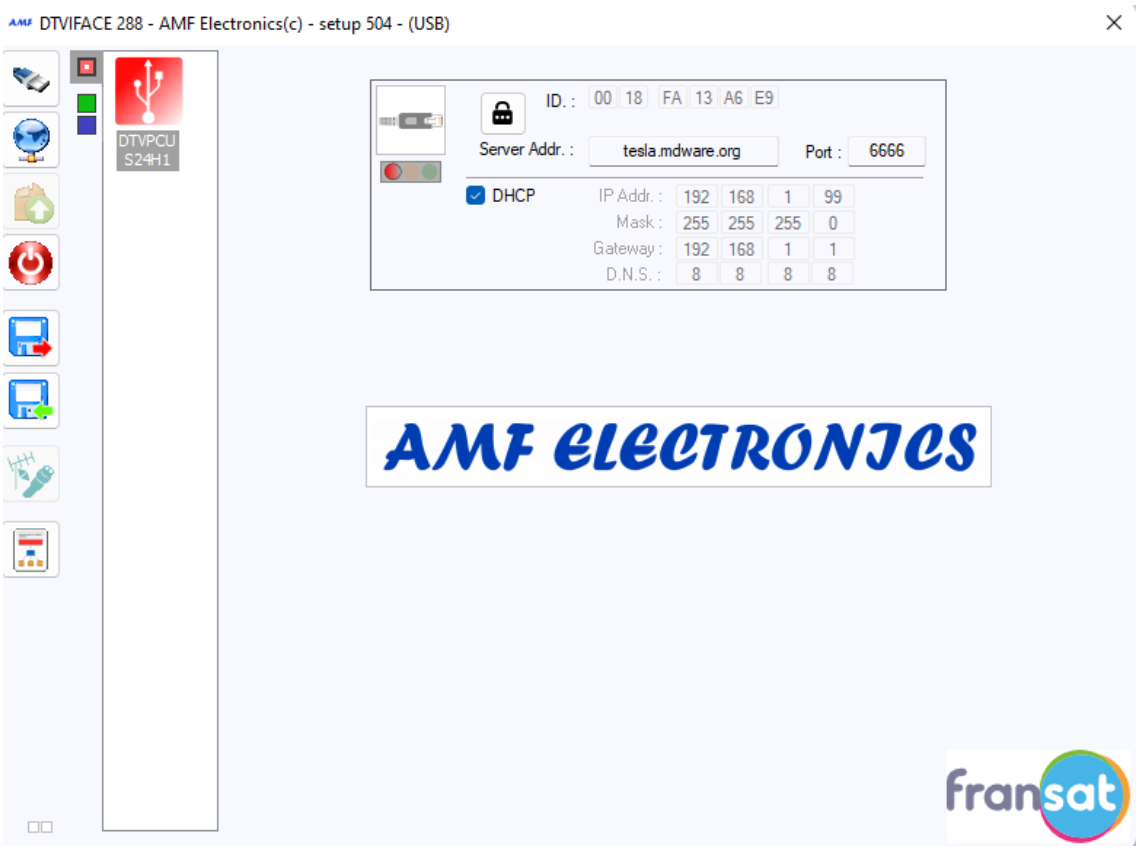
4. Making connection to your DTVRack using USB cable

Make sure that there is an USB connection between your PC and the compact headend (the compact headend comes with the USB cable supplied).

Proceed with starting up your compact headend.

For systems equipped with ethernet connector (some compact headends), please wait until the ORANGE LED of the ethernet connector on the compact headend starts blinking. (if this is not the case - there is a problem when booting - contact service in this case).

Press the USB button in the left upper corner 
If all OK, the following picture should appear.

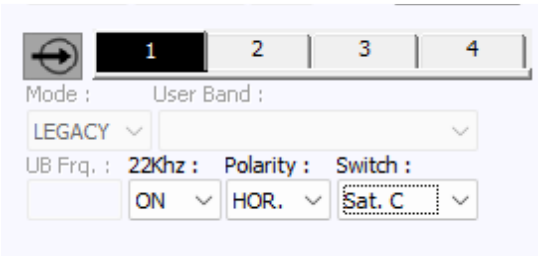


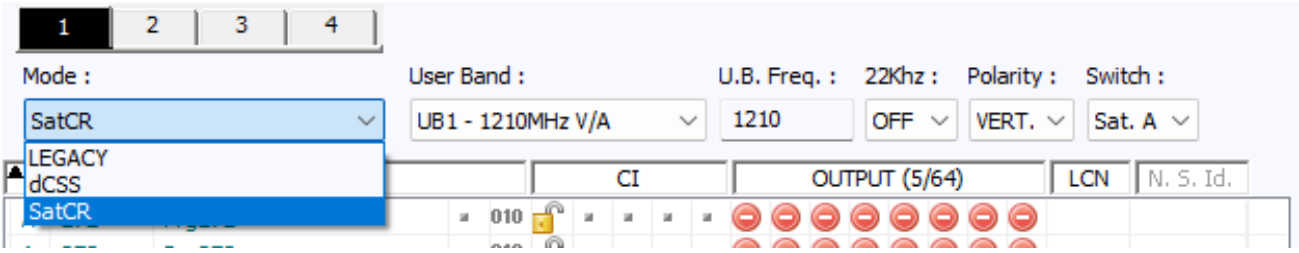
Please note, in the upperleft corner of the window :
DTVIFACE 20.1 – AMF Electronics (c) - (USB), indicating that a connection is made to your compact headend using an USB cable.

5- Programming

5.1 - Programming the STM300/500 Series

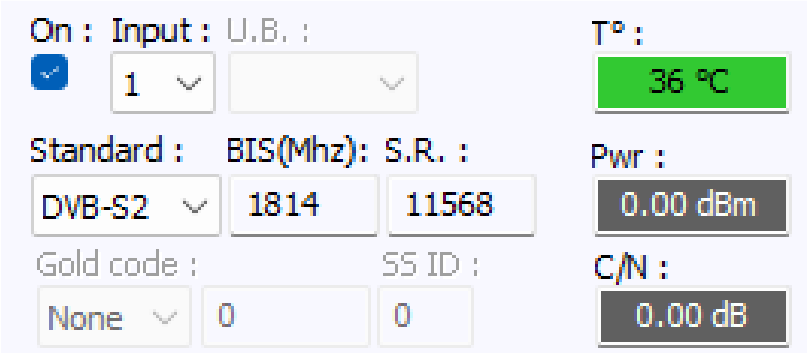
First of all, define for each input (1..4) the tone, mode (LEGACY, dCSS or SatCR) , User Band (UB1 – UB24), U.B. Frequency, polarity and DiSEqc command.





Once defined, program the necessary tuners (A,B,C,D,E,F,G and H) . For each tuner needed, please follow this procedure :

a/ Activate the tuner
b/ Select the satellite input that is needed for that tuner (1,2,3 or 4) User Band (in dCSS or SatCR mode)
b/ Fill in the satellite frequency. You can use the real frequency (fi 12188 MHz) or the intermediate frequency (fi.1528 MHz). In any case when you use the real frequency the software will immediately convert this frequency to the intermediate frequency.
c/ Set the symbol rate and select if the standard is DVBS or DVBS2
d/ Repeat this procedure for all tuners needed. If a tuner is not needed, it is better not to activate it in order to reduce the power consumption in the module.

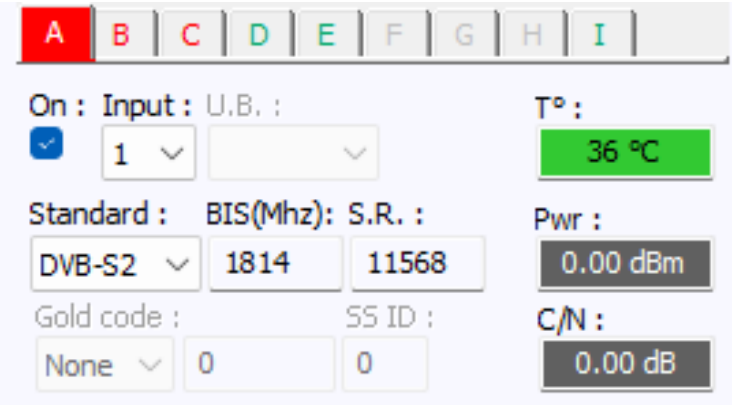


When the settings are valid and a signal is received, the letter of the tuner will turn GREEN.

When no signal is present or the settings are incorrect, the letter of the tuner will be RED.When the satellite tuner is locked (signal found), but the module is identifying the programs received, the letter of the tuner will be ORANGE, indicating that the module is analysing the information.

When the tuner is not activated the letter of the tuner will have a GREY color.

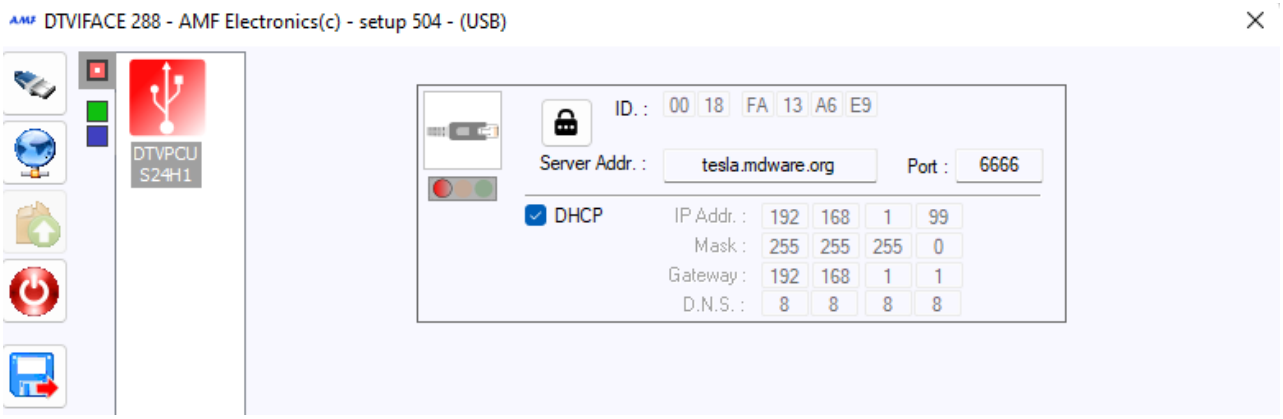
For each tuner the STM300/500 Series will indicate the power and quality (C/N) of the mux received.



6. Making connection to your compact headend over your local network

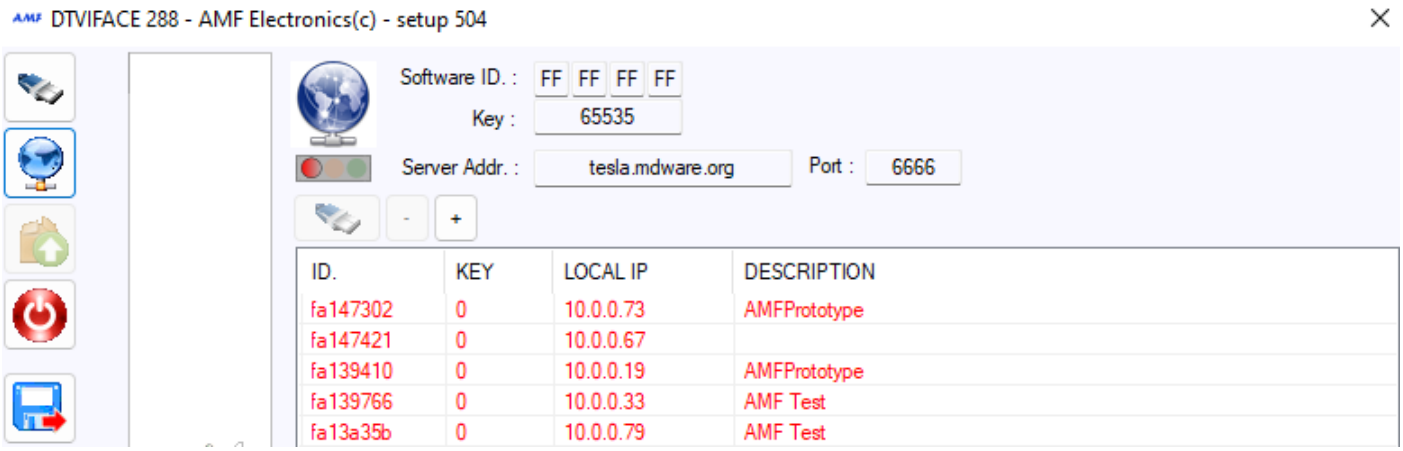
In order to make a connection to your compact headend over your local network using a RJ45 network cable, please make a connection to the RJ45 connector available on the compact headend (the RJ45 connector on the bottom of your compact headend).

At first, using the USB connection, you can define the IP settings.



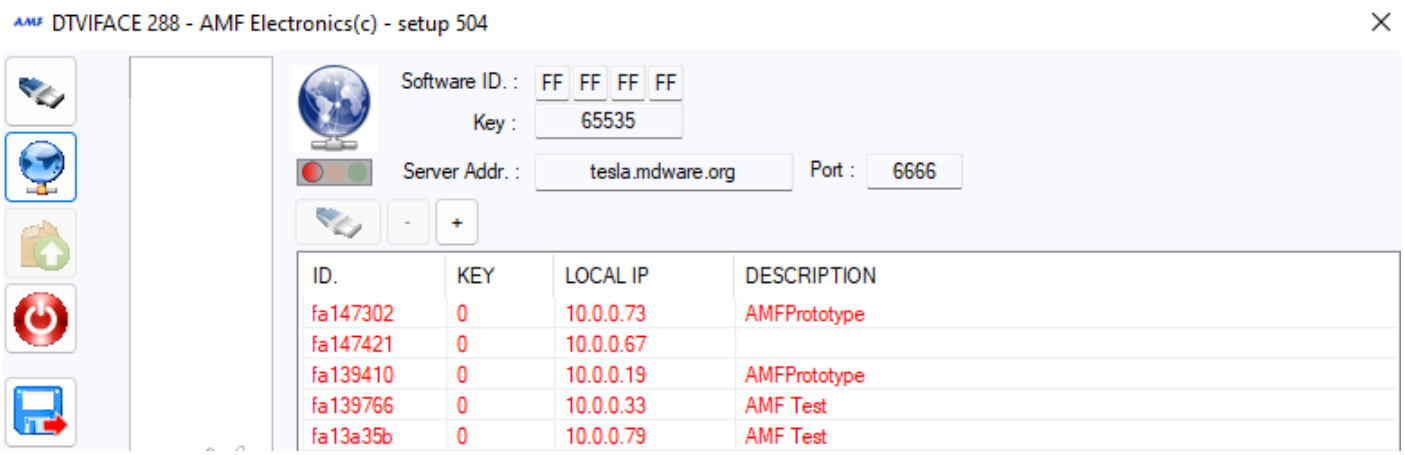
Once the IP settings are according your wishes, note down the MAC address of your headend and (which is 0018FA147302 in this case), disconnect your USB cable from the headend. Now with your PC connected to the same network, press the web button in DTVIface. 

The following window will appear :



Now, press the + button in the window, to add this headend to the list. You can now enter the ID of the headend (last 8 digits) and also its local IP address you have given in the required fields. You can also add a 'nickname' to this unit in order to remember it more easily.

When the headend has connection to your local network, this unit will appear in BLUE in the list. By selecting this line and clicking the 'connect' button, you will require access to this unit over your local network.
By using + and - buttons you can add or remove other headends from the list.



Please note, in the upperleft corner of the window :
DTVIFACE 20.1 – AMF Electronics (c) - (10.0.0.73/fa147302/AMFPrototype), indicating that a connection is made to your headend over your local network.

7. Making connection to your headend over internet

To be able to control your headend using internet access, you will need some additional items.

First off all, you will need a SOFTWARE ID and KEY. This software ID and KEY is personal. So you should not allow other users using the same SOFTWARE ID and KEY. To get this SOFTWARE ID and KEY, please contact, distributor or importer to get your personalized Software ID and KEY.

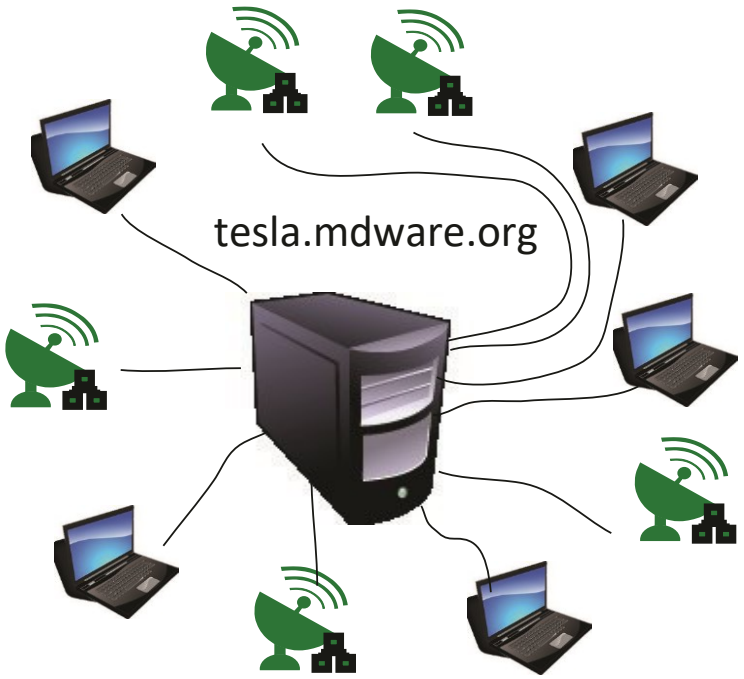
Secondly, for each headend you want to control over the internet, you will need an additional KEY for that specific headend. You can order DTVKEY vouchers for that purpose. And lastly, make sure that your headend is connected to a router having access to the web.

Once you have gathered this information, you can proceed with the next step.

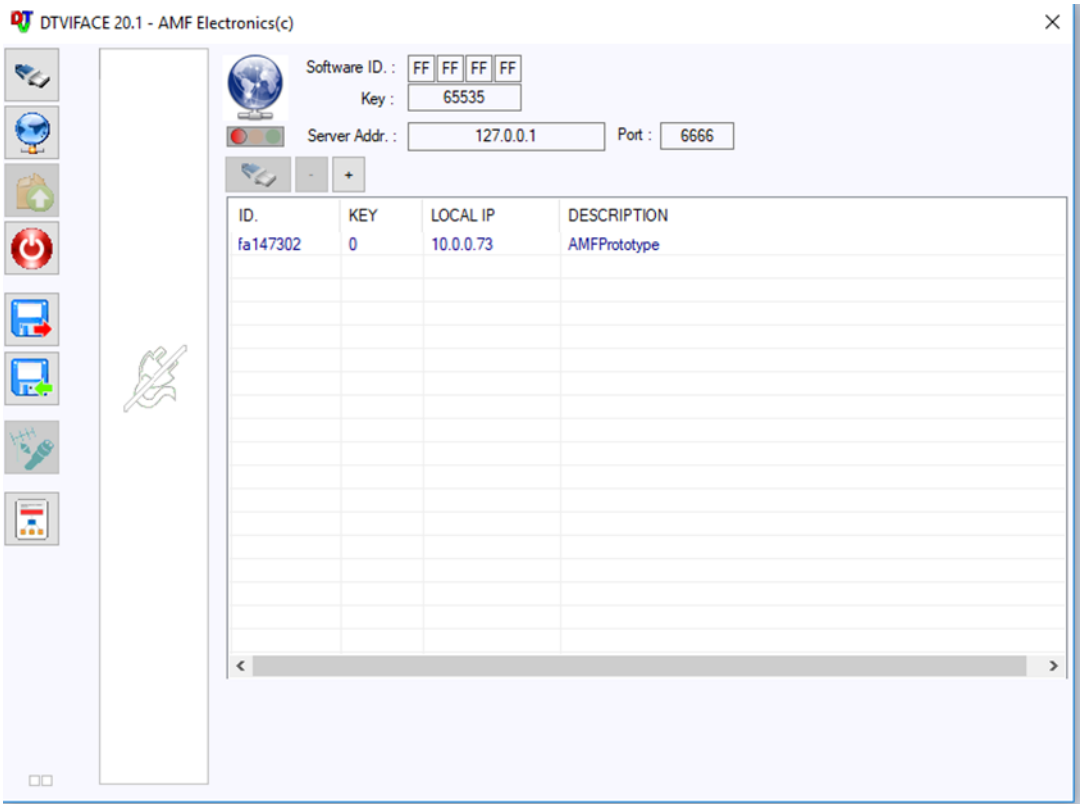
Press the web button in DTVIface. In this page, please put at first your software ID and KEY.

Make sure that for the server address, and Port, the parameters **tesla.mdware.org** and **6666** are filled in.

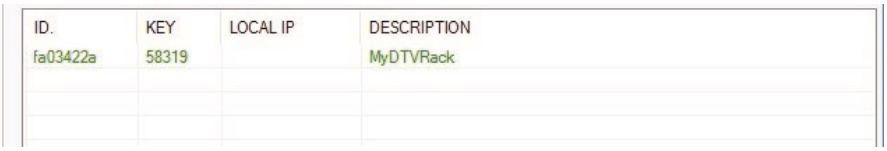
If all parameters are OK (and your PC is connected to the internet), then you will be connected to our server tesla.mdware.org which handles all communications between USERS compact headends. The LED under the globe will go ORANGE



Now, to add a compact headend press the + button in the window.
In the table below you can now add the MAC address of the headend (last 8 digits), together with the KEY for that specific headend.



If all items are correct and the rack is connected to internet, then this line will appear in GREEN.



By selecting this line and clicking the 'connect' button, you will require access to this unit over internet.
By using + and - buttons you can add or remove other headends from the list.

Please note, in the upperleft corner of the window : DTVIFACE 20.1 – AMF Electronics (c) - (tesla.mdware.org/fa147302/AMFPrototype), indicating that a connection is made to your compact headend over our server tesla.mdware.org.

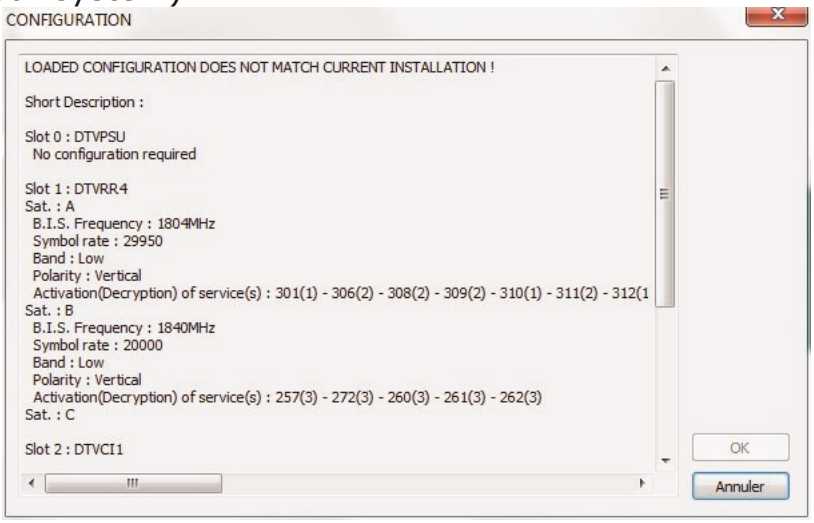
8. Saving and recalling configurations (.dtc files)

The buttons  allow you to save and recall the configuration of your rack.

When you have programmed your rack to your convenience, you can save it to your PC by clicking the button with the GREEN arrow. The configuration will be saved under some .dtc file.

This file you can reload in your system (or in another system) just by clicking the button with the RED arrow.

After pressing this button, select the .dtc file of your choice. DTVIface will firstly check if the loaded configuration is compatible with your rack (if the order, number, or type of modules is different from the loaded configuration, you will not be able to load the configuration in your system).

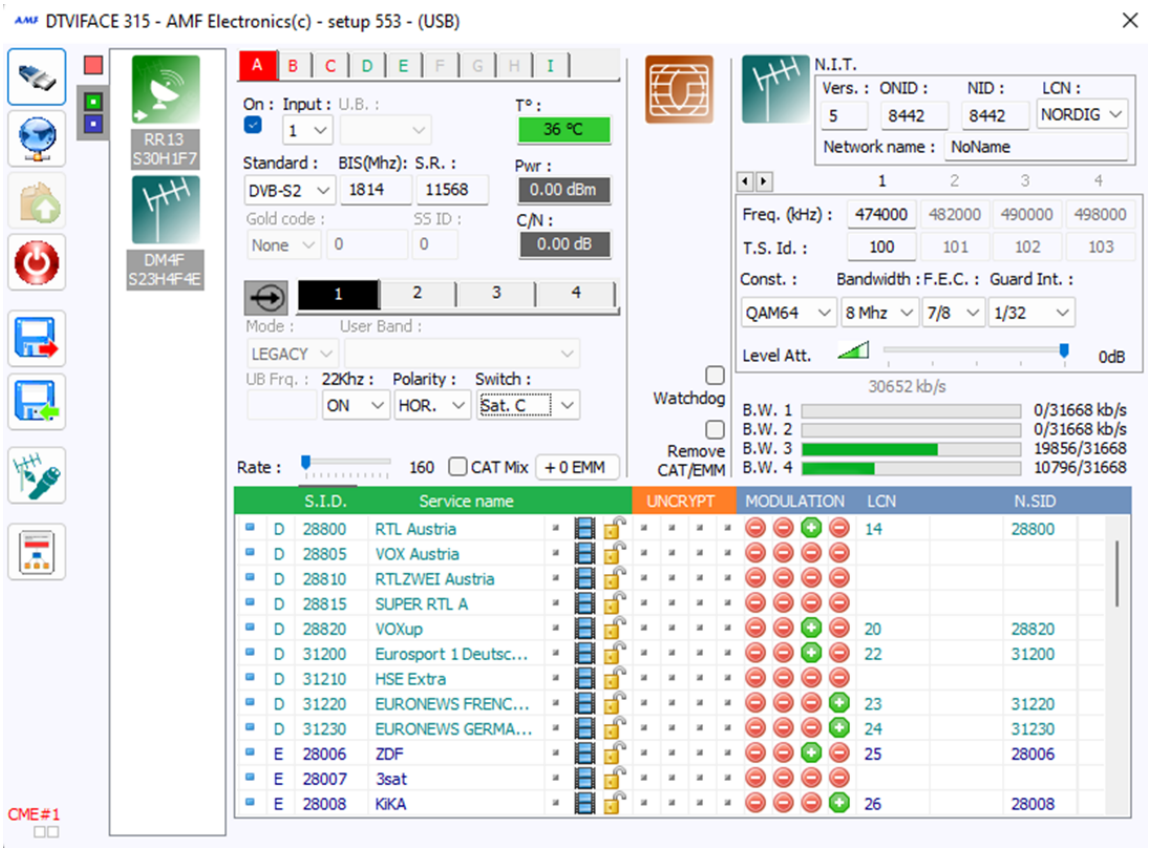


Before loading, an overview of the configuration is shown in the window, press OK to finally load the configuration in your system.

9. Creating .html reports from DTVIface.

The button  allows to generate a .html report. This report gives you a complete and easy readible overview of the settings you have made in your rack.

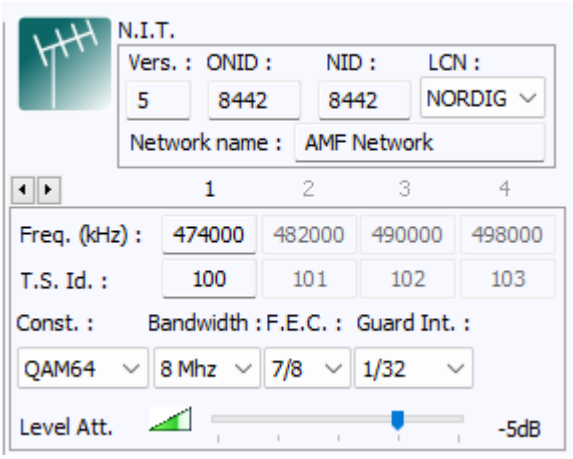
You can use it for documentation or to check all the settings in your headend.



10. Programming of the modulator module.

When in DTVIface, click on DTVDM4 symbol to get access to the parameters of the modulator module.

11. Setting the parameters of the modulator



For the modulator following parameters can be set.

N.I.T

Version : enter the NIT version
ONID : enter the decimal code for the Original Network ID. The original network ID is the country where you are located.
NID: enter the network ID.

Network Name : enter the network nameUnder the N.I.T. parameters you will find the output frequency of the modulator. As they have adjacent output channels, you can only set the output frequency of the first channel. The frequency of the other channels is automatically adjusted, so you can not change the output frequency of the second channel or the other 3 channels etc.

T.S. Id : for each channel a T.S.Id should be assigned.

N.SID: for each Service Name a new N.SID can be assigned. Default N.SID is the original S.I.D of the Service Name

Modulation parameters : furthermore, you can set the modulation parameters for the modulator. Please select the constellation, Bandwidth, F.E.C and Guard Interval.

Output level of the modulator : an internal attenuator allows to lower the output level of the modulator. The attenuator can be adjusted between 0 dB (max. output) and -20 dB.

Some remarks on setting the N.I.T parameters and T.S. Id. :

When you make a headend you will probably have more then 1 modulator in your system. In order to keep consistency throughout your complete headend, please follow these guidelines :

a) For your complete headend make sure that the N.I.T. (version / ONID / NID / Network Name) are IDENTICAL throughout the entire system.

b) For your complete headend make sure that all T.S. Id. (Transport Stream ID) are UNIQUE. Every output channel should have a unique ID in the system. Make sure that an T.S.Id. does not appear more than once in the system.

12 - Adding services (programs) to the modulator:

In the list of programs, you will find four columns with a GREEN + symbol or RED - symbol.

The columns indicate the output channels of the modulator (column 1 is first channel, column 2 is second channel column 3 and column 4 are third and fourth channe).

If a green + symbol appears besides a certain program, this means that this program is added to that specific channel in the modulator.

The status can be changed by double-clicking the activation symbol besides the requested program.

In the most right colums you can add a LCN number or HDLCN number for channel numbering.

What means HD LCN ?

In some systems, it can happen that you want to broadcast at the same time the SD (Standard Definition) version of a program and the HD (High Definition) version of a program.
With HD LCN numbering, you can force HD Television sets to follow the HD LCN numbering and SD Television sets to follow the LCN numbering for those programs which are transmitted in double.

Some practical example :

Suppose you have in your system the program 'Das Erste' in SD version and in HD version. Application of HD LCN would then be :

Das Erste LCN : 5 HDLCN : 5
Das Erste HD LCN : 55 HDLCN : 5

Television sets with HD tuner will now put Das Erste HD on number 5 and Das Erste on 55. Television sets without HD tuner will put Das Erste HD on number 55 and Das Erste on 5.

13 - Additional information :

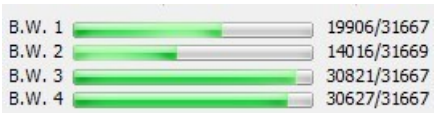
In the window of the modulator you will find some usefull additional information.

To the left of N.I.T information, you will find a 'terrestrial symbol'. 

The number under this symbol, gives you the total occupied bandwidth of the modulator.
Off course, this number should not exceed the maximum available bandwidth of the modulator. The maximum available bandwidth is calculated on the maximum available bandwidth per channel x the number of channels. The maximum available bandwidth per channel is depending on the modulation parameters (Constellation / Bandwidth / F.EC./Guard Interval). You will find an overview of the maximum available bandwidth in function of the modulation parameters later in this manual.

For instance for a 4 channel modulator, the maximum available bandwidth is 4 x 31.6 Mbit/s = approx. 125 Mbit/s.

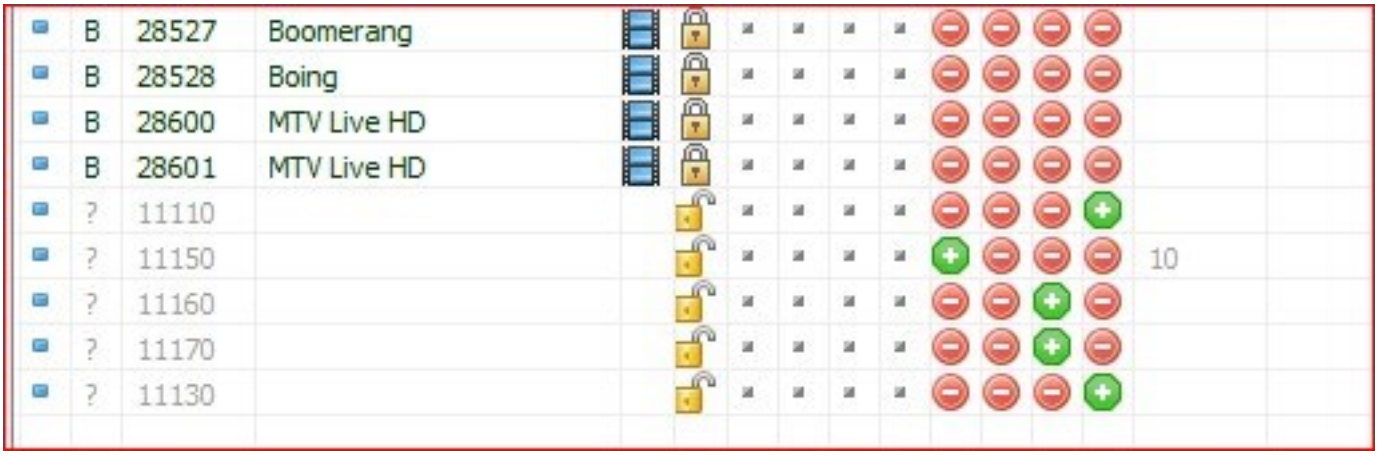
The occupied bandwidth of each channel in the modulator is showed by bar graphs in the modulator window.



The occupied bandwidth will increase as the number of programs added to that channel is increased.
It also depends on the bandwidth of each individual program.
Please check, not to overload a channel as this will lead to 'defects' in the programs.

Please note that when no services (programs) are added to an output channel, the channel will be not active. This also means that you can decide for the modulator to act as a single, twin, triple or quad modulator.

If you change satellite parameters, the previously defined services for the modulator, will appear as question marks in the list. (see figure below).



Please remove these services by double clicking the activation button. No services preceded with a question mark should be in list.

13.1 - Conversion from DVBT to DVBC and vice versa

The DTVDM4F can act as a DVBT or DVBC modulator. In order to change the modulation type, please click following button in the left column : 

Once pressed, DTVIface will ask you to confirm if you really want to change the modulation type. When confirmed the STM300 Series will reboot itself and will start up again with a DVBC modulator.

13.2 - Other parameters

The Rate is the bit rate at which the Receiver module sends it transport stream to the modulator. For STM300 Series please set this the maximum rate.

13.3 - Miscellanous

Please note that when no services (programs) are added to an output channel, the channel will be not active. This also means that you can decide for the STM300 Series to act as a single, twin , triple or quad modulator.

At the bottom of DTVIface, you will find an indication of the relative bandwidth of a program in the global stream.

If you change satellite parameters, the previously defined services for the modulator, will appear as question marks in the list. (see figure below).

Please remove these services by double clicking the activation button . No services preceeded with a question mark should be in list.

13.4 - Sorting lists

To get a better overview in the list of programs, the colums Service Name , modulation and LCN, can be sorted. Please click on the specific column, to have the service names sorted in alphabetical order or according to modulation or according to LCN.

5.5 - Resetting the STM300 Series

In order to go back to the factory settings of the STM300 Series, please move your mouse over the following button : Then right click, and left click. All your settings will be erased and the STM300 Series will go back to its factory settin gs

13.6 - Creating a .html report of your configuration

Pressing this button  creates a html report of the configuration of your STM300 Series.

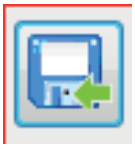
13.7 - Rebooting your headend

Pressing this button  reboots your STM300 Series.

13.8 - Saving and loading a configuration

DTVIface allows to save the settings you have made on the STM300 Series on your PC. Afterwards this configuration can be reloaded in the STM300 Series or in another STM300 Series.

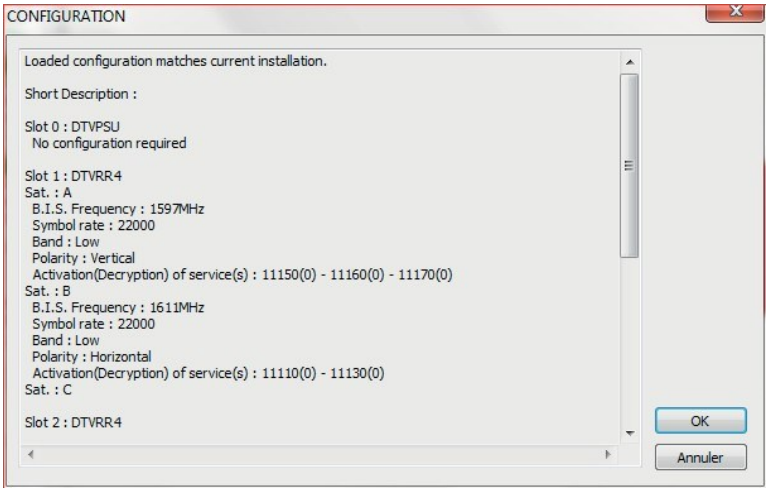
13.8.1 Saving your configuration.



Press the save button. This opens a window where you can save your configuration under a configuration format (.dtc file).

13.8.2 Opening a configuration.

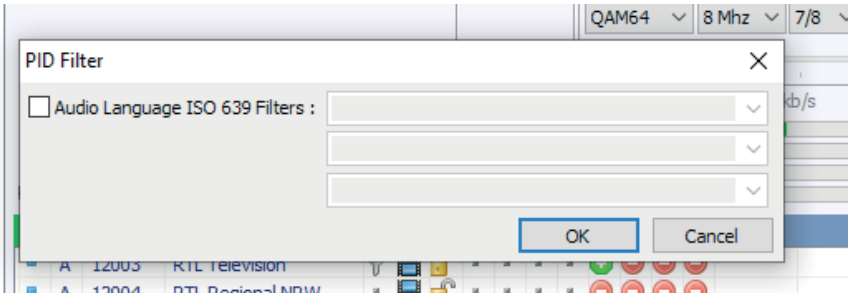
Press the open file button. This opens a window where you can open a previously stored configuration. Once the .dtc file is selected, DTVIface checks if this configuration matches your installation and gives you a brief description of the configuration. If the configuration matches your installation press OK to load this configation in your product.



13.9 - Audio PID filter

In normal operation, the STM300 Series transmits all audio pids that are available for the program. In order to filter out a specific audio PID from a service, please double click on the following dot

A pop menu appears, where you can select up to 3 audio PIDs.



After modification of this window, a filter symbol will appear in the list indicating that for this program an audio filter is in place.

6 - LEDs on STM300 Series

6.1 - LED on STM300 Series Receiver module

When the unit starts up, the LED status on the STM300 Series Receiver module is caracterised by a quick toggle between red and green. When the startup phase of the STM300 Series Receiver module is completed the LED blinks as follows :

a/ For each tuner activated a blink is present (for instance if 6 tuners are activated), the LED on the STM300 Series Receiver module will blink 6 times showing a GREEN blink or RED blink. A green blink means that the specific tuner is OK. A red blink means this tuner is not OK (no signal received or tables not ready).

b/ The blinks for the tuners are then followed with a small pause. Followed by a final green (transport stream available) or red blink (transport stream not ready).

6.2 - LED on STM300 Series Modulator

When the unit starts up, the LED status on the STM300 Series Modulator is caracterised by a quick toggle between red and green. When the startup phase of the STM300 Series Modulator is completed the LED blinks as follows :

The LED blinks green : the modulator STM300 Series Modulator is ready and transmits its 4 channels/

The LED blinks red : the modulator STM300 Series Modulator is ready but does not receive a valid transport stream from the STM300 Series Receiver module

14. Relative bandwidth of a program in the transport stream

In the bottom of the window, you will find a bar divided in a number of blocks.
The number of blocks is equal to the number of programs added to the modulator.

The width of the blocks is in direct relation with the bandwidth of the program.

For instance, in below window, when on program ProSieben, a certain block in the bottom turns bleu. This blue block gives you a relative idea of the occupied bandwidth of this program in the transport stream.

This information can be helpful in assigning the different programs to the different channels on the modulator.