ATLAS 64

QUICK INSTALLATION GUIDE

Fte®
maximal

ATLAS 64

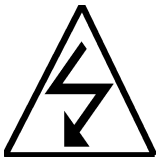
ENGLISH

QUICK INSTALLATION GUIDE

1. Product introductions

1.1.Safety Rules

Please read the manual carefully before using the device. You will receive a lot of information to use this product correctly and you will prevent incidents. Please keep the manual on a safe place.



This sign warns you about high voltages, with risk of electric shock

Caution: Do not open the housing of this device. Repairs can only be made by professionals authorized by Fte maximal. If not, warranty will not be valid anymore.

This sign informs about special information which is important to know.

Caution: Keep this device far away from liquids. Do not place it on placements close to water like flowers vases, wash basin, aquariums or pools. A high risk of electric shock exists when water or high humidity filters inside the devices. Never place other devices on it; they can overheat the devices as well as daring fire risk.

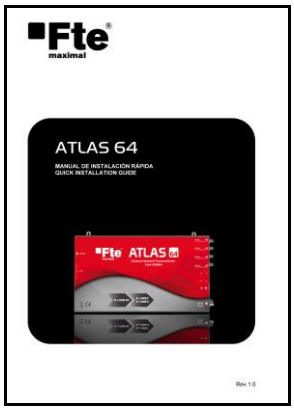
Please read carefully this manual and do not hesitate to contact to professional help if you have any doubt.

Opening the device housing will mean a warranty void.

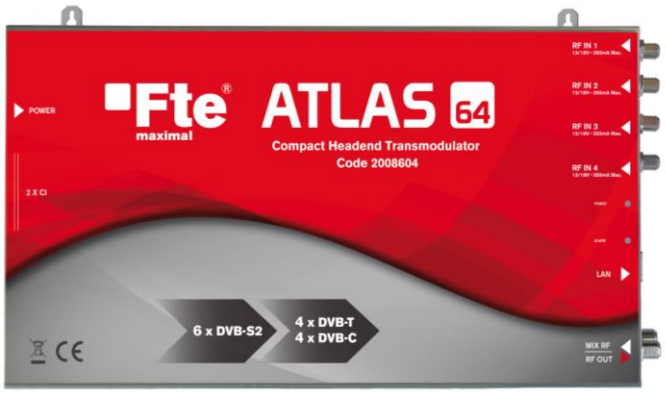
1.- Never place the equipment close to hot sources.
2.- Never expose the equipment to temperatures that exceed the level of operation of the device.
3.- Do not expose the equipment to dripping or splashing.
4.- Do not place objects filled with liquids on the equipment.
5.- Respect ventilation slots of this equipment. Avoid covering them with any object.
6.- Keep clean and without obstacles a minimum radius of 15 cm around this equipment.
7.- Avoid place with possibilities of spilling liquids on the inside of the device, and with important changes of temperature.
8.- Use the device only in moderate climates (not in tropical climates).
9.- When you take the device from a cold to a warm place, please wait until the device gets the same temperature as the new environment, in order to avoid problems of humidity condensation.
10.- Never open the equipment yourself due to electric risk. In case of problems, check with qualified technicians.
11.- Never, under any circumstances, open the equipment connected to the electrical net.
12.- During the handling it is better to disconnect the equipment of the electrical net.
13.- Respect the electricity security rules during the assembling. Use materials that obey the current law.
14.- The connecting plug must be accessible in a fast and simple way to have a fast disconnection.
15.- Never touch the plug with wet hands. Also, disconnect always the device before handling the connections.
16.- Never put any heavy object over the device, as it could get damaged.
17.- If the equipment is going to remain some time without use, it is recommendable to disconnect it from the electrical net.
18.- Within the warranty time all the repairing processes should be done by Fte Maximal technical staff. Otherwise, the warranty voids.

2. Package contents

When open the package the first time, you can find the following context:



Quick installation Guide



Compat Headend Transmodulator Atlas 64

Power cord

1 load type F 75 Ω isolated

3. Description and connections

3.1.Description

The compact transmodulator headend of ATLAS 64, allows to receive up to 6 transponder of satellite signals (DVB-S / S2), through its tuners. Each tuner can receive the signal from any of the 4 available RF inputs. Atlas 64 is able to decode pay-per-view services when a professional CAM is inserted in any of the 2 slots C.I. Each output mux can combine free or decoded services, coming from several tuners. The services of the 4 mux can be modulated according to the DVB-T or DVB-C standard in their RF output. The equipment has the following additional functions:

- Allow add new channels in the coaxial RF network.
- It is possible combine several headend Atlas 64 to do a complete headend.
- Option to increase the LNB power in 1 volt to compensate the electrical loss in the installation. For example, a high value of electrical resistance in long cable.
- Priority system for the output services to management the overflow error in the outputs mux.
- Support LNC and PID filtering
- Easy configuration using the Web interface.

3.2.Connections

1 **Mains connector.** It is the mains connection. Connect the power cord here.
2 **CAM1, CAM 2:** The 2 slots C.I. to insert CAM and decrypt PAY TV services. The number of service can be decrypted depend of the type of CAM inserted.
3 **RF IN 1:** Input 1 of signal DVB-S/S2. The RF input can supply remote device as LNB
4 **RF IN 2**: Input 2 of signal DVB-S/S2. The RF input can supply remote device as LNB
5 **RF IN 3**: Input 3 of signal DVB-S/S2. The RF input can supply remote device as LNB
6 **RF IN 4**: Input 4 of signal DVB-S/S2. The RF input can supply remote device as LNB
7 **LED POWER**: Power indicator. The light is green when the device is on.
8 **RESET:** It is the reset button. It is needed enter a tool to press the buttons for example a clip for paper. If hold the button reset 2 seconds the headend will be rebooting and the led *ALARM* will be turn on in red color. If hold the button more than 5 seconds, the headend load the factory values. All the custom settings, IP configuration and password will be cleared. The password will be "*admin*". The light *ALARM* blink in green color to know the factory values will be loaded.
9 **LED ALARM:** This light has several state and to indicate the next events:
- **Red:** The Headend will be starting the boot stage.
- **Red blinking:** Alarm an error is detected. For example remove an input. Another means is the boot is in the second stage.
- **Blue blinking:** The headend is loading a configuration or the headend is in the last stage of the boot.
- **Green:** The button Reset was hold 5 seconds and the factory value are loaded.
- **OFF:** No alarm detected or the boot stage is finish.

10 **LAN:** Allow programming the device using the web interface.
11 **MIX RF**: Input to mix terrestrial signal from another device in the headend.
12 **RF OUT:** This is the output connector of the transmodulator. The 4 mux modulate in DVB-T or DVB-C will be mixed with all terrestrial signal received in the input MIX RF.

4. Installation

When the device is installed in a wall, keep clean and without obstacles a minimum radius of 15 cm around this equipment for proper ventilation. Connect the cables, from the LNB or multiswitch to the input RF IN 1 to RF IN 4. The output signals in the RF output can be mixing with the output terrestrial signals of other headend equipments using the MIX RF connector before to distribute in the building. If the MIX RF input is not used connect the load 75 Ω isolated included. To programming the headend, connect a patch cord between the LAN connector and the computer or connect the both device using a switch or router.

Always remember to turn off the ATLAS 64 headend before to install or remove the CAM to avoid damage in the headend or the CAM. Before to install, check the side of the logo of the CAM must be orientating to the back side of the headend.

5. Configuring the compact headend ATLAS 64

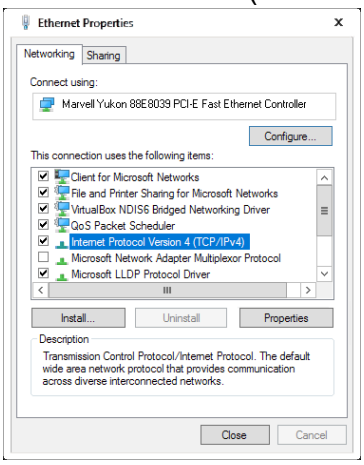
5.1. First steps

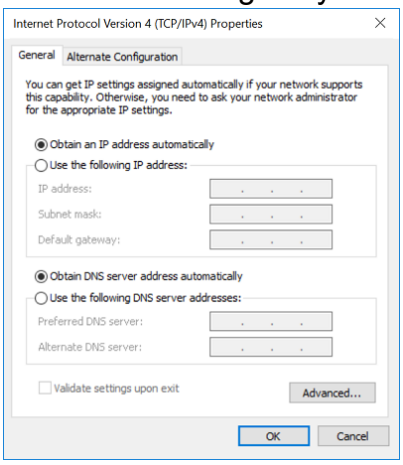
After finish the installation of the headend Atlas 64 is ready to connect the power. Wait until the led alarm is off again. This time could be more than three minutes. To configure the transmodulator is necessary a computer or a mobile device with a web browser. For example: Google Chrome, Firefox, Opera and Internet Explorer 9. In this guide is explaining the steps to configure the Atlas 64 from one computer with Windows operative system using the network interface Ethernet.

Connect the LAN port of the transmodulator and the interface Ethernet of the computer directly using a patch cord or use a switch or router between the both devices connecting with 2 patch cords. By default, the Atlas 64 is configured to obtain the IP address by DHCP.

Windows 10

Click in the Windows start button ➔  Settings ➔ Network and Internet ➔ Ethernet ➔ Change Adapter Settings. Right click on “Local Area Connection” and then select “Properties” in the contextual menu.
Follow the next steps to set the properties of the Internet protocol Version 4. Double click on “Internet Protocol Version 4 (TCP/IPv4)” to enter the IP settings of your adaptor.





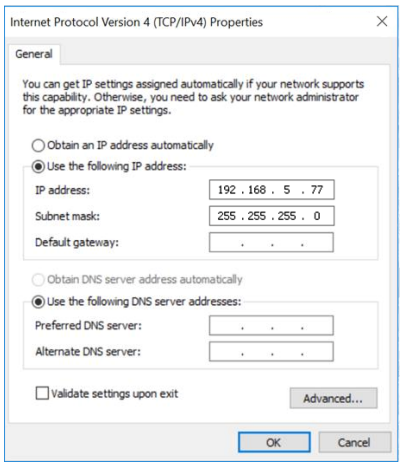
Configuring the protocol TCP/IPV4 to Obtain an IP address from DHCP
In the computer Select obtain an IP address automatically and Obtain DNS server address automatically.

Press OK and close the windows.

Configuring the protocol TCP/IPV4 to with a fixed address

The set before the IP static address of Atlas 64 headend with a fixed IP address for example **192.168.5.101**.

Set the IP address of the computer in the same IP range and subnet of the headend. In the example, the computer will be configuring in the IP address 192.168.5.77. Remember copy the current configuration before to do any change, if need restore the current configuration of the Ethernet interface.



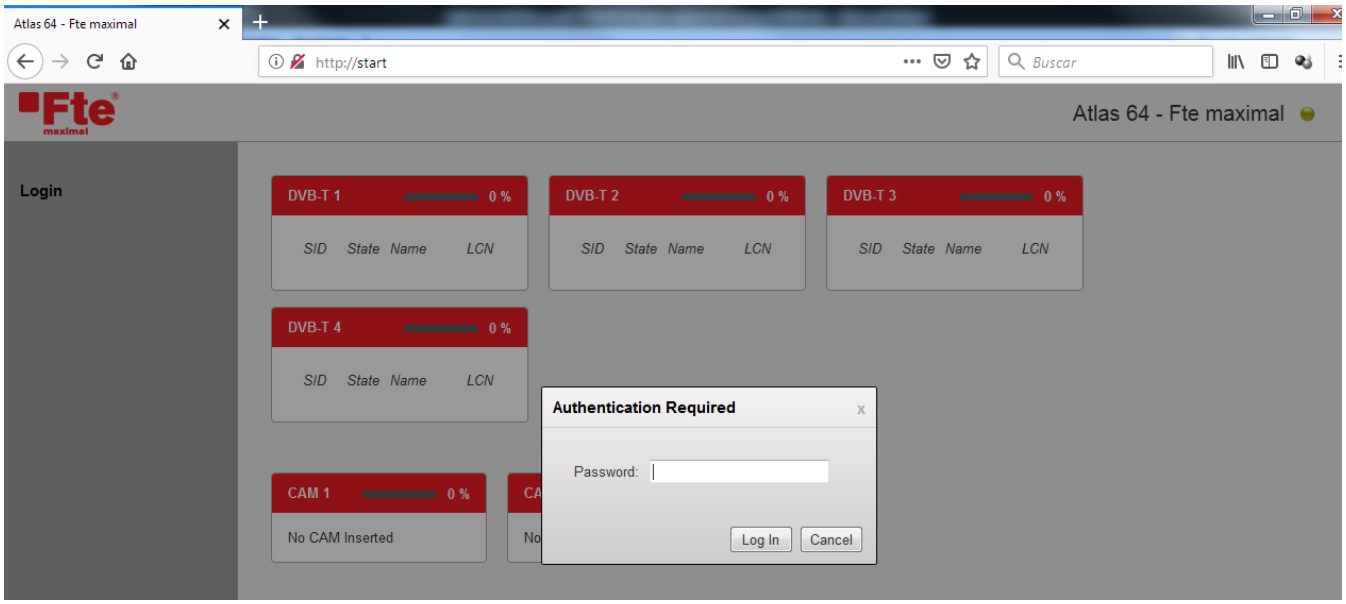
Check the radio button “Use the following IP address” and enter an IP and subnet mask.
You can leave the Default gateway and DNS settings empty.

Press OK and close the windows.

6. Web interface

Open the web browser and type **http://start** in the address bar.

The Web interface of Atlas 64 will be showing, and you must be showing the overview.
Select in the left menu the option *Login*.
In the dialog *Authentication required* type the password. By default, the password is ***admin*** and confirmed pressing the button *Log In*.

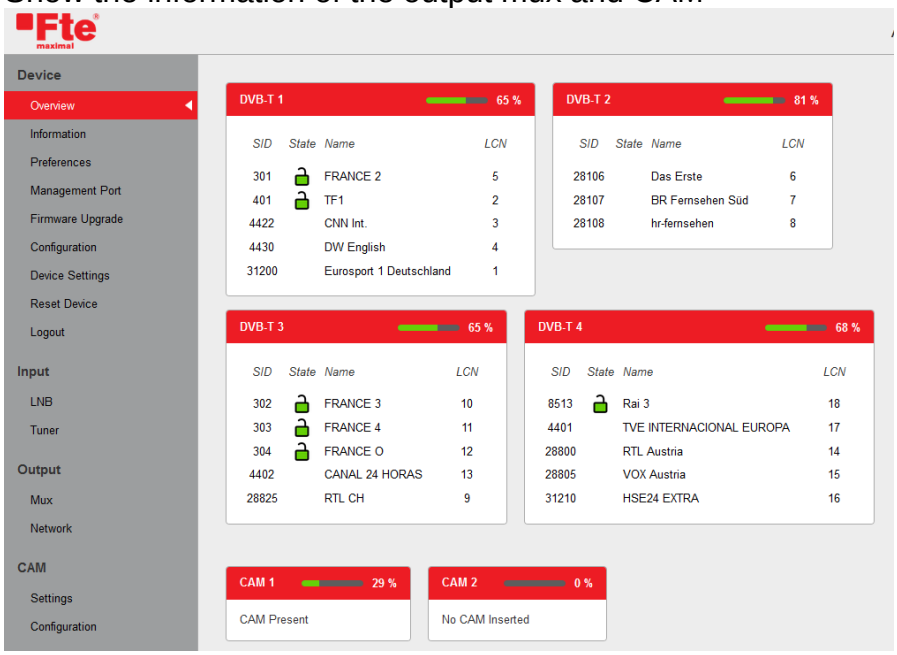


After that show the full menu can change the headend configuration.

6.1.Menú Device

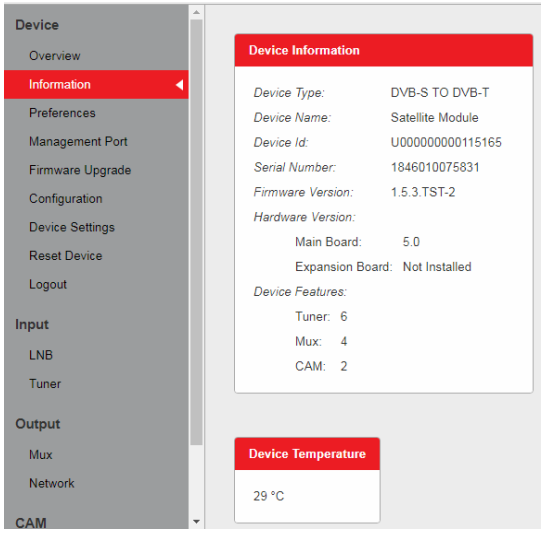
6.1.1. Overview

Show the information of the output mux and CAM



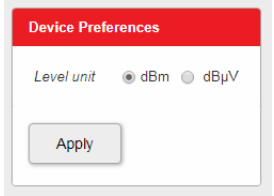
6.1.2. Information

Show information about the software and hardware version and the device features.



6.1.3. Preferences

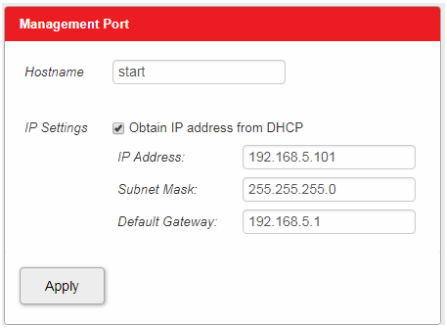
Select the power units. It is possible choice between dBm and dBµV. Press *Apply* to update the changes.



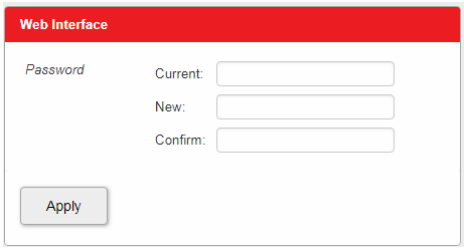
6.1.4. Management Port

Using this menu is possible update the IP configuration, the password of the Web interface and a remote access.

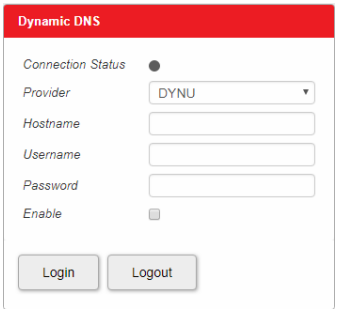
- **Management Port**
  Hostname: Allow change the hostname of the device by default is start. Remember to connect again must be type http://new_value_of_ hostname.
  IP Settings: Change the IP settings. If Obtain IP address from DHCP is not checked it is necessary set the value of the *IP Address*, *Subnet mask* and the *Default gateway*.
  Press the button *Apply* to update the new settings.



- **Web Interface**:
  Use this option to change the password. Type the current and the new password and press Apply to update the change. The current session will be close and you must be login with the new password to continue.



- **Dynamic DNS**.
  This option is designed to permit remote connection with the device when we have a dynamic IP address from our service provider.

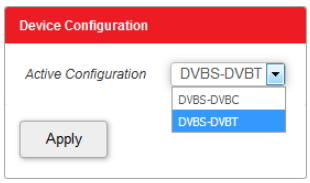


6.1.5. Firmware upgrade

Use this option to upgrade the firmware of the device. Select the file in the option *Upload firmware* pressing the button *Select file.* A dialog appears and must be choose the file .upg with the new firmware. Press Upgrade to start the upgrade procedure. Show the screen a follow the instructions to do the upgrade. Please, don't turn off the device while it is upgrading to avoid damage.

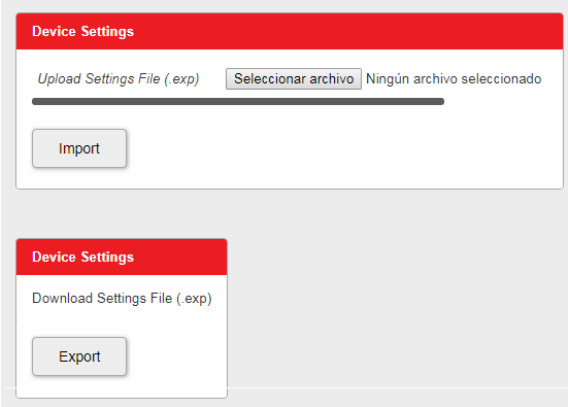
6.1.6. Configuration

Choose in the list *Active Configuration* the type of the output modulation between DVB-T and DVB-C. Press the button *Apply* to confirm. The device will be rebooting, and the devices settings will be cleared.



6.1.7. Device Settings

This menu allows save and load a configuration in the device.

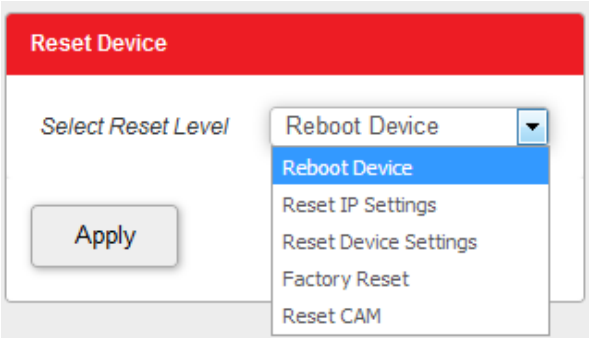


In the section *Upload Setting File (exp)* press the button Select file. A dialog is showing and it must be used to choose the settings file with extension exp. After confirming the file in the dialog window, press the button import to upload the new configuration to the device. Wait until the process finish.

Press the button *Export,* to save the current devices settings in a file.

6.1.8. Reset Device

In this option, it is possible choose the type of reset. In the list *Select reset level* choose an option and press the button *Apply* to confirm.



Options available:
Reboot device: Restart the device.
Reset IP settings: Load the factory settings for IP configuration
Reset Device Settings: Delete all device settings except the IP configuration, password and the device configuration.
Factory Reset: Load the factory default. The device configuration is not changed after the factory default
Reset CAM: Force a reset to the CAM

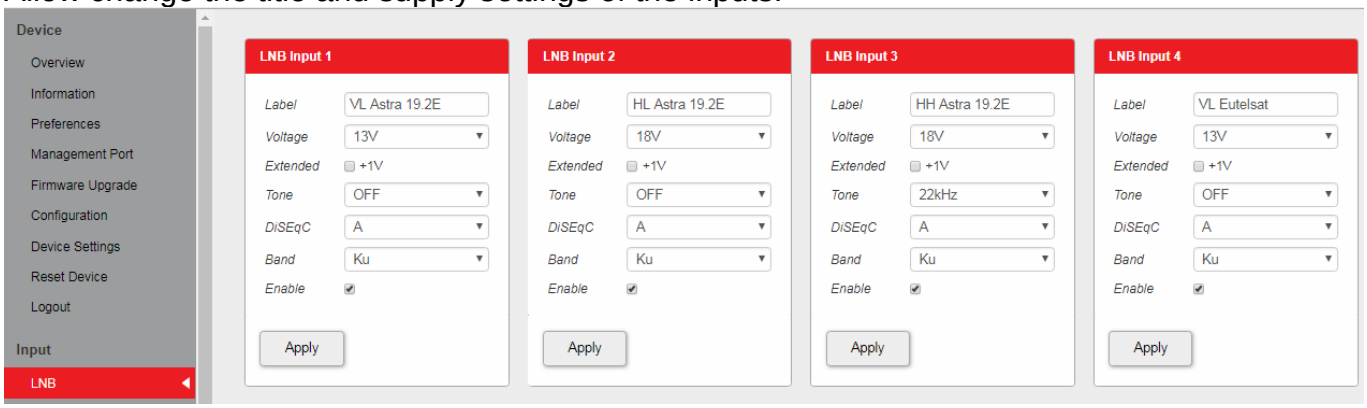
6.1.9. Logout

Close the current session.

6.2.Menú Input

6.2.1. LNB

Allow change the title and supply settings of the inputs.



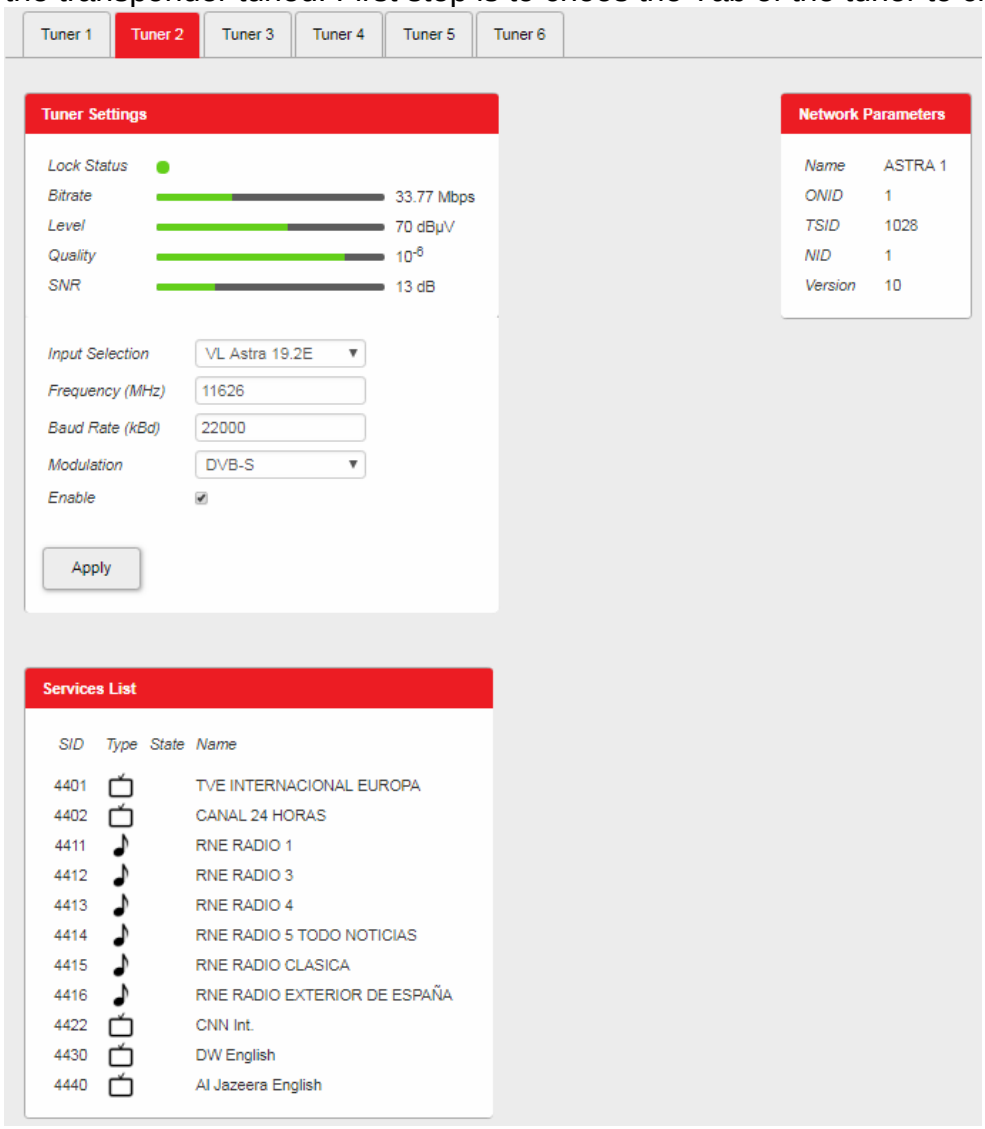
Label: Edit the text to do a friendly identification of the input.
Voltage: Choose between OFF, 13V and 18V.

Extended: Mark the checkbox *+1V* to increase the supply voltage 1 volt. Use this option when the input voltage in the remote device is low for example for a high value of electrical resistance in long cables.
Tone: Select between OFF and 22 KHz.
DiSEqC: Choose between A, B, C and D.
Band: In this option select between Ku (Universal 9750/10600MHz) and C band.
Enable: If the option is checked the input is enabled.

Press the button *Apply* to update the change in the device.

6.2.2. Tuner

This section allows change the settings of the 6 tuners of the headend and show information of the transponder tuned. First step is to choos the Tab of the tuner to change the settings.



Input Selection: Select in the list the RF between the 4 available inputs.
Frequency (MHz): Enter the frequency in MHz.
Baud Rate (KBd): Type the value of the Symbol rate.
Modulation: Choose in the list between DVB-S and DVB-S2.
Enable: Check this option to enable the tuner.

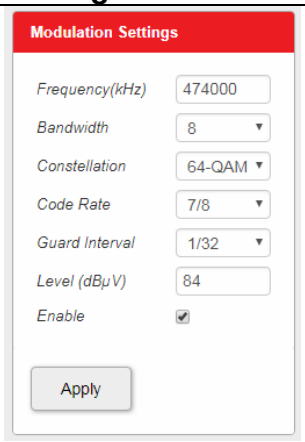
Press *Apply* to confirm. After tune the signal of the transponder in the screen appears the information of the input level, the quality, the input network information and the service list.

6.3.Menú Output

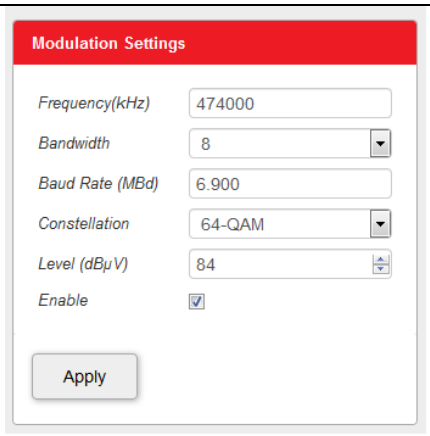
6.3.1. MUX

In this section can be change the settings of the output modulation, Transport stream settings and can be choose the output services of each mux.

Modulation Settings



DVB-T Settings



DVB-C Settings

Frequency (KHz)[1]: Type the centre frequency of the mux in KHz. For example the channel 21 will be 474000. See the Annex 1 in the page 15 for details.

Bandwidth[1]: Select in the list the bandwidth. The options available are 6, 7 and 8 MHz.

Constellation: Depending of the output modulation it is possible choose one option in the list.

DVB-T: QPSK, 16 QAM and 64-QAM.

DVB-C: 16-QAM, 32-QAM, 64–QAM, 128-QAM and 256-QAM.

Baud Rate (MBd)[1] (Option only for DVB-C): Choose the value of the baud rate (symbol rate). Select between 1.000 until 7.000[2].

Code rate (Option only for DVB-T): The values available are: 1/2, 2/3, 3/4, 5/6 and 7/8.

Guard Interval (Option only for DVB-T): The values can select in the list are: 1/4, 1/8, 1/16 and 1/32.

Level[1]: Select a value between 69 dBuV and 84 dBuV (-40 dBm to -25 dBm).

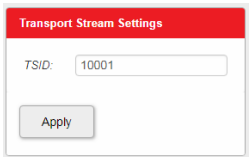
Press the button *Apply* to confirm the new adjustment.

Remark

[1]: The setting only can be changing in the Mux 1.

[2] The higher value could be under 7.000, if the bandwidth is lower than 8 MHz

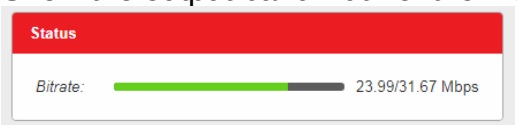
Transport Stream Settings



Here can type the transport stream ID. The value is between 0-65535. Press the button *Apply* to confirm.

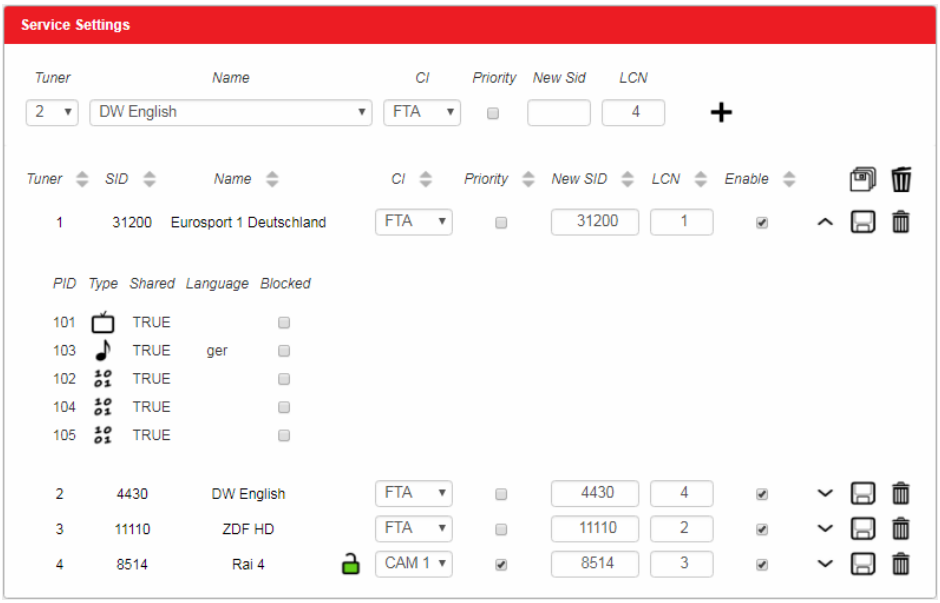
Status

Show the output bandwidth of the mux.



Service Settings

Allow choose the output services in the outputs mux and their settings.



Add an output service.

Use the next settings to add an output service.

Tuner: Select in the list the number of tuner where it is received the service to add in the output.
Name: Choose in the list the name of service.
CI: Select the routing of the service. Choose between the next values: FTA, CAM1 and CAM2.
Priority: Allows prioritize some services to ensure the best quality on your TV, in the case of overflow in the output, because the bandwidth in the output is limited. It is advisable not to exceed 30% the total number of services to be prioritized in each multiplex.
New SID: In this option is possible change the service ID. If leave in blank keep the original service ID after was added.
LCN: Type here the logical channel number to sort the channels in the compatible receivers with this option.
Finally do a click in the image + to add the service. If the service was added in this mux or another mux appear a warning message and it can be not added again.

After add a service, it is possible edit the value of the *CI, New SID* and *LCN*. The option ***Enable*** must be checked to permit the service in the output.

PID filtering

Click in the image V in the right side of the Enable. With that show the list of PID of the service. If check the option Blocked in the same row of the PID, the PID will be not in the output. This option could be permit save bandwidth removing for example teletext or other PID not used.

Click in the image to update the new settings of the service.

Do clock in the image to update the new settings in several services in the same time.

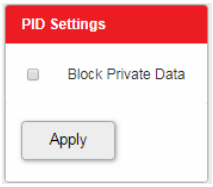
Delete services

To delete a service do click in the image .

To delete all service do click in the image .

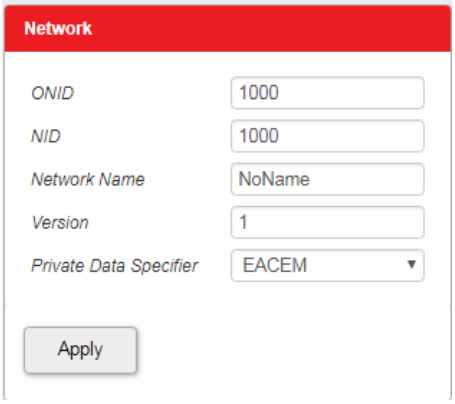
Pid Settings

When check the option *Block Private Data,* the headend block with irrelevant PID information. Only allow in the output the PID as video, audios, CAS….



6.3.2. Network

In the network setting several settings of the Network could be modified as the ONID, NID, the name, the version and Private Data Specifier.



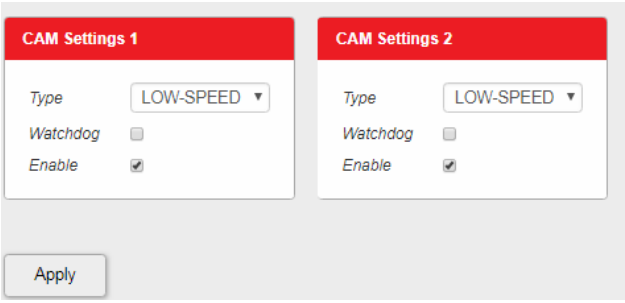
ONID: In this option enter the value of original network ID. The allowed values are between 1 and 65535.
NID: Type here the value of the Network ID. The allowed values are between 1 and 65535.
Network Name: Type here the name of the network.
Version: Type the value of the network version. The allowed values are between 1 and 31.
Private data Specifier: Select between the next values: *EACEM*, *ITC* and *Nordig*.

Press *Apply* to confirm the new settings.

6.4.Menu CAM

6.4.1. Settings

Use this menu to change the settings of the CAM.



Type: Select the type of the CAM.

- Choose **LOW-SPEED** (option by default) for first generation CAM. Theses models only support 50 Mbps.
- Choose **HIGH-SPEED** for second generation CAM. These models support until 100 Mbps.

Watchdog: The watchdog monitoring the CAM and check all the services pass through the CAM are decrypting. If one or several services are not decrypting the watchdog do a reset in the CAM to try to decrypt again the services

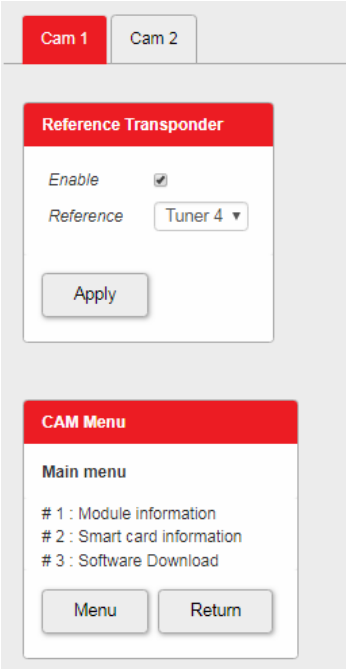
Remark: The watchdog must be enabled only when all services are decrypting correctly by the CAM.

Enable: When this option is checked the CAM is enabled (default value).

Click the button *Apply* to confirm the new values.

6.4.2. Configuration

This menu allows associate the Reference Transponder and CAM menu.



Reference Transponder

It is needed check the enable option and selects the correct reference tuner to decrypt services by the CAM. The reference tuner must be one tuner where is received services any Pay TV compatible with the CAM. Select enable and in the list reference choose one of the six tuners of the device

Press the button Apply to confirm the new settings.

CAM Menu

Allow show and navigate in the CAM menu. To enter in one option do click with the mouse. To return to the previous menu press the button *Return*. To return directly to the main menu press *Menu*.

7. Technical specification

Technical specification		
Reference	**ATLAS 64**	
Code	2008604	
Description	Compact transmodulator headend 6 x DVB-S/S2 to 4 x DVB-T/ DVB-C	
RF Input		
Number of connectors	4	
Number of tuners	6	
Standard	DVB-S/S2	
Frequency range	950-2150 MHz	
Level	44 dBµV - 84 dBµV / (-65 dBm to -25 dBm)	
Bandwidth	36 MHz	
LNB (remote power supply)	0V / 13V/ 18V/ 0-22kHz	
Maximum current/ input	350 mA	
DiseqC support 1.0	yes	
Integrated multiswitch	Yes, allow routing from any input service to any output mux	
CI Slot	2	
RF Output		
Number of connectors	1	
Number of output mux	4	
Standards	DVB-T / DVB-C	
DVB-T	**Frequency range** **Mode** **Bandwidth** **Constellation** **Guard interval** **Code rate** **Bitrate**	47-862 MHz 2K 6, 7 and 8 MHz QPSK, 16 QAM and 64 QAM 1/4, 1/8, 1/16 and 1/32 1/2, 2/3, .3/4. 5/6 and 7/8 Up to 31.667 Mbps / MUX
DVB-C	**Frequency rage** **Bandwidth** **Constellation** **Baud rate** **Bitrate**	47-1002 MHz 6, 7 and 8 MHz 16QAM, 32QAM, 64QAM, 128QAM and 256QAM 1.000-7.000 Mbd Up to 51.6 Mbps/ MUX
Output level	84 dBµV / (-25 dBm)	
regulation	15 dB (in step 1 dB)	
MER	≥ 43 dB	
MIX RF connector	1	
Insertion loss MIX RF - RF OUT	≤ 2 dB	
LAN (Only for programming)		
Programming	Using Web interface	
Type of connector	RJ 45	
Interface speed	100 Mbits	
Standard	IEEE 802.3 10/100 Base-T	
GENERAL		
Input power supply	100-240 Vac / 50-60Hz	
Power	45 W	
Dimensions	345 mm x 70 mm x 210 mm	
Operative temperature range	0-50 ºC	

ANNEX I Channel list

7.1.VHF Frequency table

Channel	Center Frequency (KHz)	Frequency (KHz)
2	50500	47000 – 54000
3	57500	54000 – 61000
4	64500	61000 – 68000
5	177500	174000 – 181000
6	184500	181000 – 188000
7	191500	188000 – 195000
8	198500	195000 – 202000
9	205500	202000 – 209000
10	212500	209000 – 216000
11	219500	216000 – 223000
12	562000	223000 – 230000

7.2.UHF Frequency table

Channel	Center Frequency (KHz)	Frequency (KHz)	Channel	Center Frequency (KHz)	Frequency (KHz)
21	474000	470000 – 478000	**41**	634000	630000 – 638000
22	482000	478000 – 486000	**42**	642000	638000 – 646000
23	490000	486000 – 494000	**43**	650000	646000 – 654000
24	498000	494000 – 502000	**44**	658000	654000 – 662000
25	506000	502000 – 510000	**45**	666000	662000 – 670000
26	514000	510000 – 518000	**46**	674000	670000 – 678000
27	522000	518000 – 526000	**47**	682000	678000 – 686000
28	530000	526000 – 534000	**48**	690000	686000 – 694000
29	538000	534000 – 542000	**49**	698000	694000 – 702000
30	546000	542000 – 550000	**50**	706000	702000 – 710000
31	554000	550000 – 558000	**51**	714000	710000 – 718000
32	562000	558000 – 566000	**52**	722000	718000 – 726000
33	570000	566000 – 574000	**53**	730000	726000 – 734000
34	578000	574000 – 582000	**54**	738000	734000 – 742000
35	586000	582000 – 590000	**55**	746000	742000 – 750000
36	594000	590000 – 598000	**56**	754000	750000 – 758000
37	602000	598000 – 606000	**57**	762000	758000 – 766000
38	510000	606000 – 614000	**58**	770000	766000 – 774000
39	618000	614000 – 622000	**59**	778000	744000 – 782000
40	626000	622000 – 630000	**60**	786000	782000 – 790000

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