



MAC-HD

REF. 4493

High Definition Standalone Modulator
DVB-T / DVB-C / IP Outputs
2xCVBS . HDMI . HD-SDI Inputs



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Introduction

About this Manual

This manual describes the configuration environment of the MAC-HD modulator based on web interface via Ethernet connection.

The Manual covers all configuration options: from start-up and operation, to adjusting the settings and troubleshooting for the MAC-HD.

The description consist of the connection procedure and access to the configuration settings, description of the environment and its contents, configuration options and interpretation of the information on the screen.



NOTE

This configuration manual is a practical reference guide. For the correct use and installation of the MAC-HD, it is essential to read the corresponding user manual (please see www.ikusi.tv for the manual).

Product Description

The MAC-HD is a standalone modulator that can process different Video and Audio formats, to create a high-definition COFDM/QAM channel.

This product offers a solution to video signal distribution requirements in residential installations, hotels, special buildings or security video monitoring installations with COFDM/QAM digital TV modulation. Likewise, the MAC-HD comes with a USB Interface which can incorporate new functions thanks to the equipment's evolvable software, such as: video playback from USB for digital signage and other possible future functions

Features

The unit has various inputs:

- Two analogue audio and video channels, through 6 RCA connectors.
- One digital video and audio channel in HDMI format, through an HDMI connector.
- One digital video and audio channel in HD-SDI format, through a BNC connector.

Possible combinations:

- | | | |
|---------------------------------|----------------------------|--------------------|
| • SD CVBS/Audio + SD CVBS/Audio | 2 simultaneous SD channels | |
| • SD HDMI + SD CVBS/Audio | | 1 channel SD + USB |
| • SD SDI + SD CVBS/Audio | | |
| • SD + USB | | |
| • HD HDMI | 1 channel HD | |
| • HD SDI | | 1 channel HD + USB |
| • HD + USB | | |

- Output:
- Digital DVB-T TV signal over an RF carrier in VHF/UHF
 - IP signal (configurable only through web interface, no by SPI-300)

Means of configuration:

- Web interface via Ethernet Connection (compatible con aplicación IKUSI HEADEND DISCOVERY).
- LCD screen with control button.

Web Interface Connection

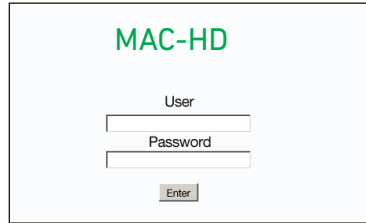
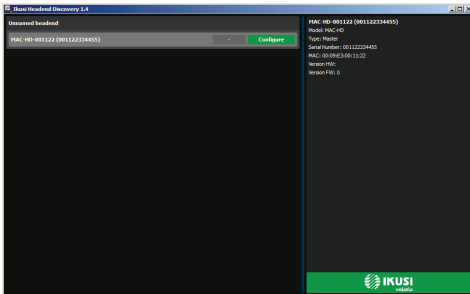
Ethernet Connection

The web user interface can be used to configure all the MAC-HD unit's settings, using an Ethernet connection and a web browser.

Ethernet configuration by application:



Download the IKUSI HEADEND DISCOVERY application available on the website (www.ikusi.tv/en/headends/modulators/mac-series/mac-hd). In the window we will find the model, the MAC number, serial number and manufacturing firmware version to access the interface of this module simply click on the SET button. In the home page the USERNAME AND PASSWORD fields appear, enter "admin" in both, click on the ENTER button.



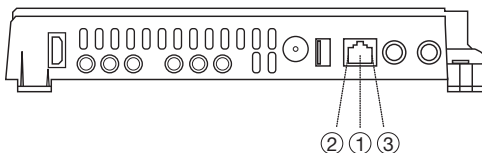
NOTE

To view the graphics provided in the unit's configuration programme correctly, we recommend installing Mozilla Firefox 1.5 or later (www.mozilla.com) on the controlling PC.

Use a PC with an Ethernet network card and a CAT-5E Ethernet cable.

Ethernet manually configuration:

- 1) Access the PC'S TCP/IP Settings and configure the following parameters:
 - * PC'S /IP Address: 192.168.1.1
 - * Subnet Mask: 255.255.255.0
- 2) Connect the PC to the LAN port (RJ-45) of the MAC-HD unit (position 1 in the diagram below).



KEY

- 1 - Ethernet Connector (LAN port, RJ-45)
- 2 - Link LED
- 3 - Activity LED



NOTE

The MAC HD Ethernet Connector (position 1 in the diagram above), has two light indicators:

- The link LED (position 2 in the diagram above), remains continuously lit without blinking to indicate that the link is working correctly.
- The activity LED (position 3 in the diagram above), blinks to indicate that the link is active.



NOTE

The configuration process must be carried out in local mode, even though the unit can be accessed from any PC on the LAN.

- 3) Start the web browser and enter the MAC-HD unit's IP address:
 - INITIAL IP ADDRESS: 192.168.1.6



NOTE

You may change this initial IP address later if you wish to.



NOTE

The unit is also assigned the default IP address 10.0.0.22
This IP address cannot be modified.

- 4) Click on ENTER to access the home page.
- 5) Enter the user name "admin" and the password "admin".



NOTE

The unit connected to the PC will automatically disconnect if 15 minutes pass without any interaction.

MAC-HD

User

Password

Enter

General Configuration

Main menu

The screenshot shows the IKUSI MAC-HD configuration page. At the top left is the IKUSI logo. The page title is 'MAC-HD'. In the top right corner, there is a language selection dropdown menu with 'en' selected, and a 'logout' link. Below the title bar is a main menu with tabs: 'General', 'Settings', 'Status', and 'Reports'. Underneath is a sub-menu with tabs: 'Settings', 'Change password', 'Save-restore', 'Upgrade', and 'Reboot'. The main content area is divided into four sections: 'Identification', 'Local settings', 'Network settings', and 'LCD joystick'. The 'Identification' section contains fields for Model, Serial number, MAC, Identifier, Location, Installer, and Contact. The 'Local settings' section contains fields for Country, Timezone, Date, and Hour (hh:mm). The 'Network settings' section contains fields for IP, Netmask, and Gateway. The 'LCD joystick' section contains a checkbox for 'Block' and a text field for 'Unblock code'. At the bottom right, there is a 'Save settings' button.

1-Main menu 2-Submenus 3-Work area 4-Language selection 5-Save configuration

To explore the different menus, select each option in the menu area (position 1 in the diagram above). Depending on the options available in each menu, there will be one or various submenus (position 2 in the diagram above). In turn, each submenu may have one or more configuration tabs.

- To change the interface's language settings, click on the option corresponding to your preferred language (position 4 in the diagram above): ES= Spanish; EN= English; FR= French.
- To save the settings you have changed, click on the **SAVE CONFIGURATION** option, (position 5 in the diagram above).

Identification

- 1) Select the GENERAL menu and then the CONFIGURATION submenu.
- 2) Access the LCD+JOYSTICK menu.

The LCD+JOYSTICK configuration tab allows you to block the unit, so that it is impossible to make any modifications using the control button or display.

General	Settings	Status	Reports
Settings	Change password	Save-restore	Upgrade Reboot

Identification

Model	MAC-HD	Identifier	<input type="text"/>
Serial number	00112233+455	Location	<input type="text"/>
MAC	00:09:E3:00:11:22	Installer	<input type="text"/>
		Contact	<input type="text"/>

- MODEL: Displays the name of the unit. This information cannot be modified.
 - SERIAL NUMBER: Displays the manufacturers' serial number identifying the unit. This information cannot be modified.
 - MAC ADDRESS: Automatically displays the MAC address of the unit for connection to the network. This information cannot be modified.
 - IDENTIFIER: Identifying name assigned to the unit by the installer or operator.
 - LOCATION: Name of the location where the unit is installed (for example: a post code).
 - INSTALLER: Name of the installer or operator.
 - CONTACT: Contact details of the installer or operator (for example: a telephone number).
- 3) Once you have finished configuring the data, you can save the changes by clicking on the SAVE button on the lower part of the tab.

Local configuration

- 1) Select the GENERAL menu and then the CONFIGURATION submenu.
- 2) Access the LOCAL CONFIGURATION tab.

This section is used to set the date, time and standard time zone of the MAC-HD modulator.

General	Settings	Status	Reports
Settings	Change password	Save-restore	Upgrade Reboot

Local settings

Country	Australia	Date	2013-09-11
Timezone	Australia/Perth	Hour (hh:mm)	6:42

- COUNTRY: Select the country in which the unit is operating.
- TIME ZONE: Set the time zone of the country in which the unit is operating.

- **CURRENT DATE AND TIME:** Shows the hour, date and format (Date: YYYY-MM-DD; Time: HH:MM).
- 3) Once you have configured the data, you can save the changes by clicking on **SAVE** on the bottom part of the tab.

Network configuration

- 1) Select the **GENERAL** menu and then the **CONFIGURATION** submenu.
- 2) Access the **NETWORK CONFIGURATION** tab.

General		Settings	Status	Reports
Settings	Change password	Save-restore	Upgrade	Reboot

Network settings

IP	<input type="text" value="192.168.1.6"/>
Netmask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="192.168.1.1"/>

- **IP ADDRESS:** Enter a static IP address within the range valid for the local network to which the unit is connected.
- **NETWORK MASK:** Enter the local network mask.
- **DEFAULT GATEWAY:** Enter the default gateway IP address in the local network to which the unit is connected.

LCD+Joystick

- 1) Select the GENERAL menu and then the CONFIGURATION submenu.
- 2) Access the LCD+JOYSTICK menu.

The LCD+JOYSTICK configuration tab allows you to block the unit, so that it is impossible to make any modifications using the control button or display.

The screenshot shows the 'LCD joystick' configuration page. At the top, there is a green navigation bar with 'General', 'Settings', 'Status', and 'Reports'. Below it is a grey bar with 'Settings', 'Change password', 'Save-restore', 'Upgrade', and 'Reboot'. The main content area has the title 'LCD joystick' and a 'Block' section with an 'enable' checkbox. Below that is an 'Unblock code' field with the value '0000'.

- LCD+JOYSTICK INTERFACE BLOCK: Select the “enable” box to establish the password lock in the unit.
- BLOCK CODE: Enter the code that will unlock the unit using the LCD and control button.

Web access password

- 1) Select the GENERAL menu and then the CONFIGURATION submenu.
- 2) Access the PASSWORD tab.

The PASSWORD configuration tab allows you to change the current password for accessing the web interface of the MAC-HD unit (see web interface connection section).

The screenshot shows the 'Web access password' configuration page. At the top, there is a green navigation bar with 'General', 'Settings', 'Status', and 'Reports'. Below it is a grey bar with 'Settings', 'Change password', 'Save-restore', 'Upgrade', and 'Reboot'. The main content area has the title 'Web access password' and three input fields for 'Old password', 'New password', and 'Confirm new password'. At the bottom, there is a 'Save settings' button.

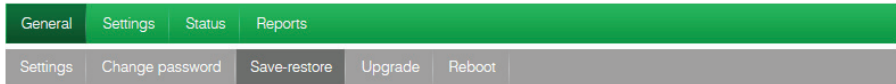
- OLD PASSWORD: Enter the current password.
 - NEW PASSWORD: Enter the new password.
 - CONFIRM NEW PASSWORD: Re-enter the new password.
- 3) Once you have configured the data, you can save your changes by clicking on SAVE in the lower part of the tab.

Save/Restore configuration

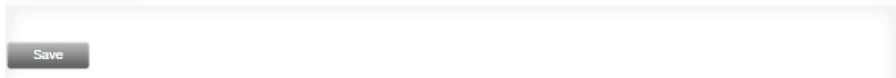
- 1) Select the GENERAL menu and then the SAVE/RESTORE menu.

All the configuration data established in the unit and accessible through the menus, submenus and web interface tabs can be stored in a backup file.

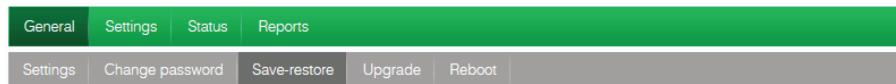
Likewise, all the unit's settings can be restored using a previously existing backup image.



Save settings



- 2) Access the SAVE CONFIGURATION section and click on the SAVE button to save a backup copy file. A window will open allowing you to select the location and filename of the security copy.
- 3) Access the RESTORE CONFIGURATION FROM BACKUP section and click on the SELECT BACKUP COPY button to load a backup copy. A window will open allowing you to select the location and backup file name. Click on the RESTORE button.



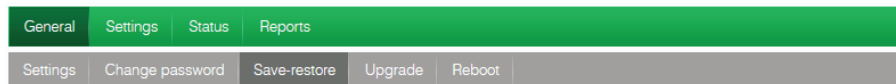
Restore settings from file

Select the restore file:

Examinar... Not selected any file

Restore

- 4) Access the RESTORE FACTORY SETTINGS tab and click on the FACTORY RESET button to reset the unit's factory settings.



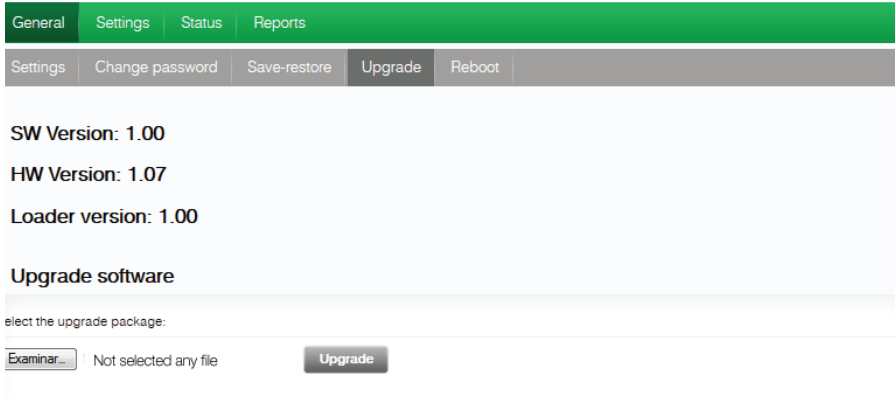
Restore factory default settings

Warning!! This will delete all the current settings

Reset factory

Upgrade

Select the GENERAL menu and then the UPDATE submenu. The unit will automatically display the currently installed firmware version.



- SELECT THE UPDATE PACKAGE by clicking on the FILE SELECT button, to select the firmware update file used by the unit.
- To execute and load the new firmware click on the UPDATE button.



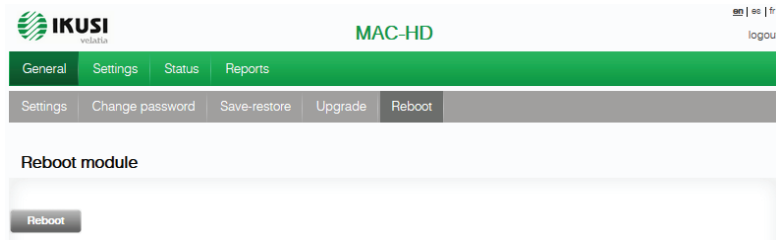
NOTE

The firmware update file has to be stored on the PC's hard drive (it can be downloaded from <http://www.ikus.com>).

Resart

- 1) Select the GENERAL menu and then the RESTART submenu.
- 2) Click on the RESTART button.

The RESTART configuration file can now be used to restart the MAC-HD unit.



- 3) Once you have restarted the unit, the home page will appear again.

Signal adjustment

Services

Select the **SETTINGS** menu and then the **SERVICES** submenu. Specify the parameters inside the **SELECTION** submenu:

The screenshot shows the 'Settings' application with the 'Services' submenu selected. The 'Selection' section contains two dropdown menus: 'Input type' set to '1 HD (HD/SD HDMI)' and 'Output type' set to 'DVB-T'. Below these, there is an input field for 'IP'.

- **INPUT TYPE:** Specify one of the five possible combinations.
- **OUTPUT TYPE:** DVB-T or IP.

Specify the parameters within the **INPUT SETTINGS** submenu:

The screenshot shows the 'Settings' application with the 'Input settings' submenu selected. The 'Input 1' section contains a dropdown menu for 'Input ratio' set to '16/9'.

- **INPUT ASPECT RATIO:** 16/9 or 4/3

The **INPUT 1** tab reports on the status of the analogue AV TV input connected to the AV1 input, allowing you to modify how the audio and video components are processed.

To configure the AV2 input, select the **INPUT 2** tab. The information, configuration options and meanings are identical to those stated for **INPUT 1**.

Within the OUTPUT SETTINGS submenu, specify the following parameters:

General				Settings				Status				Reports			
Services				DVB-T output				USB player							
Output settings															
Service 1								Service 2							
Brightness	(0-255)	128		Brightness	(0-255)	128									
Contrast	(0-255)	128		Contrast	(0-255)	128									
Saturation	(0-255)	128		Saturation	(0-255)	128									
Intensity		Strong		Intensity		Strong									
Codification		MPEG 2		Codification		MPEG 2									
Video bitrate	(4000-8000)	8000 Kbps		Video bitrate	(4000-8000)	8000 Kbps									
Audio bitrate		384 Kbps		Audio bitrate		384 Kbps									
Audio format		MPEG2 L1/L2		Audio format		MPEG2 L1/L2									
Low latency		<input type="checkbox"/>		Low latency		<input type="checkbox"/>									
PID blockage				PID blockage											
		Audio <input type="checkbox"/> Video <input type="checkbox"/>				Audio <input type="checkbox"/> Video <input type="checkbox"/>									
Name	MOD SERV 1			Name	MOD SERV 2										
SID	+2			SID	+3										
LCN	1			LCN	2										
EIT name	MOD SERV 1			EIT name	MOD SERV 2										

- **BRIGHTNESS (1-255):** Allows you to set the image's brightness within a 1 to 255 range of values. You can enter a value or raise or lower the value unit-by-unit using the buttons on the right of the value field.
- **CONTRAST (1-255):** Allows you to set the image's contrast within a 1 to 255 range of values. You can enter a value or raise or lower the value unit-by-unit using the buttons on the right of the value field.
- **SATURATION (1-255):** Allows you to set the image's saturation within a 1 to 255 range of values. You can enter a value or raise or lower the value unit-by-unit using the buttons on the right of the value field.
- **INTENSITY:** Allows you to set the video image's sharpness, by selecting one of various preset values.
- **CODIFICATION:** Allows you to select the encoding standard for the digital audio and video signal, from among the following options: MPEG2, MPEG4 and DEFAULT (if the input signal is SD, the default encoding standard will be MPEG2; if the input signal is HD, the encoding standard will be H.264 (1080p resolution only permits MPEG4)).
- **VIDEO BITRATE (4-10 Mbits/s):** The unit can be configured for an input data encoding rate of between 4 and 10 Mbits/s. When selecting the encoding bitrate, the COFDM output bitrate must be taken into account, as it must be sufficient to support the encoding bitrate. Otherwise, an overflow error warning will appear.
- **AUDIO BITRATE:** The unit can be configured for an input data encoding rate of 96; 128; 160; 192; 224; 256; 320 or 384 Kbits/s.
- **AUDIO FORMAT:** Allows you to select the three types of audio coding: MPEG2 L1/L2, LC-AAC ó HE-AAC
- **LOW LATENCY:** It reduces the codification time for those applications where the reaction time is important (i.e. cameras). The selection of the mode low latency, has a significant decrease in terms of codification efficiency and images (with much movement) quality.

- **PIDs BLOCKING:** To block any of the PIDs of each service, click to tick the corresponding selection box.
- **NAME:** Tells you the name of each service
- **SID:** Allows you to modify the SID value (can be modified).

**NOTE**

The SID value is important for detecting the channels in some receivers.

All SID values should be different for the set of services processed by one or more units that contribute to a shared RF output.

- **LCN:** Tells you the logical channel number.
- **EIT NAME:** Allows you to name an event.
- **EIT DESCRIPTION:** Allows you to add an explanation of an event.

To save the selected configuration, click on the **SAVE SETTINGS** button in the lower part of the tab.

AV1 input signal status information:

- **VIDEO:** Tells you whether or not a valid video signal is being received at the AV1 input.
- **AUDIO:** Tells you whether or not a valid audio signal is being received at the AV1 input.
- **TV SYSTEM:** States the colour system of the signal received at the AV1 input, which may be: 480i ; 576i ; 480p ; 576p ; 720p 50Hz ; 720p 60Hz ; 1080i 50Hz ; 1080i 60Hz ; 1080p 25Hz ; 1080p 50Hz ; 1080p 60Hz ; 1080p 25Hz.

DVB-T Output

Select the **SETTINGS** menu and then the **DVB-T OUTPUT** submenu. Specify the following parameters in the **DVB-T** submenu:

The screenshot shows the IKUSI MAC-HD web interface. At the top, there is a navigation bar with 'General', 'Settings', 'Status', and 'Reports'. Below this, there is a secondary navigation bar with 'Services', 'DVB-T output', and 'USB player'. The main content area is titled 'DVB-T Configuration' and contains several input fields and dropdown menus for configuring the output channel and modulation parameters.

DVB-T Configuration

Channel	21 - 478750Hz	OFDM mode	8K
Frequency	+74000	Bandwidth	7 - MHz
Attenuation (dB)	0	Guard interval	1/16
		Constellation	8+ QAM
		Code rate	3/4

- **CHANNEL:** Allows you to select and modify the output channel.
- **FREQUENCY:** States the output frequency of the current radiofrequency carrier and allows you to modify its value. The frequency value must fall within the range valid for bands VHF or UHF.
- **ATENUATION:** Allows you to set the attenuation for the radiofrequency carrier signal at the output, within a range of 0 dB to 25 dB.
- **OFDM MODE:** Allows you to set the OFDM mode selecting between the values of 2K and 8K.
- **BANDWIDTH:** Allows you to set the bandwidth, selecting between the values of 6, 7 or 8 MHz.
- **GUARD INTERVAL:** Allows you to set the guard interval, by selecting between the values 1/4, 1/8, 1/16 or 1/32, as fractions of a symbol period.
- **CONSTELLATION:** Allows you to set the output modulation constellation, by selecting the 16QAM or 64QAM options.
- **CODE RATE:** Allows you to set the redundant encoding rate, by selecting from the values 1/2, 2/3, 3/4, 5/6 or 7/8.

The screenshot shows the IKUSI MAC-HD web interface with the 'Network settings' section active. It features a form with several input fields for network configuration and a 'Save settings' button at the bottom.

- NETWORK NAME: Allows you to assign a name to the network.
- PROVIDER: Allows you to specify the name of the service provider.
- NID: Allows you to assign a value to the network identifier.
- TSID: Allows you to assign a value to the transport stream (or TS) identifier.

**NOTE**

When configuring a headend with 2 or more units, the TSID value must be different in each unit.

- ONID: Allows you to assign a value to the original network identifier.
- NIT LCN MODE: Allows you to select the NIT LCN mode.
 - OFF: No LCN descriptor will be entered in the NIT.
 - EUROPE MODE: Enters the descriptor for Europe.
 - INDEPENDENT TELEVISION COMMISSION: Enters the descriptor for the UK.
 - NORDIG MODE V1: Enters the descriptor as per the Nordig V1 specification.
 - NORDIG MODE V2: Enters the descriptor as per the Nordig V2 specification.
 - GENERIC MODE: Generic LCN Descriptor.
- INSERT TDT-TOT: Allows you to choose whether or not to insert the date and time information.

To save the selected configuration, click on the SAVE CONFIGURATION button on the lower part of the tab.

DVB-T output data			
Status			
Service number	1	Min free	100%
Output bitrate	31.888 Mbps	Current free	100%

- OUTPUT STATUS: Tells you the status of the output services.
- SERVICES NUMBER: Tells you the services number.
- MIN NULL: Tells you the minimum percentage of binary data at output.
- CURRENT NULL: Tells you the current percentage of binary data at output.
- OUTPUT BITRATE: Tells you the speed of the binary data at the unit's output.

IP Output

1) Select the **SETTINGS** menu and then the **IP OUTPUT** submenu.

Specify the following parameters in the **IP** submenu:

- **PROTOCOL:** The drop down menu offers two options : UDP and UDP/RTP. UDP is a transport protocol.
- **Time To Live:** Is a parameter used to restrict the multicasting range.
- **QoS:** Quality of Service.
- **SOURCE IP:** It shows the IP that is marked as issuer.
- **SOURCE PORT:** Identifying number of the port that is marked as issuer.
- **ACTIVATE VLAN:** Allows you to Enable/Disable virtual LAN
- **VLAN ID (0-4095):** Identifying number of the virtual network.
- **IP OUTPUT FORMAT:** Selects between formats bit rate variable VBR or CBR constant.

- **ENABLE SAP:** Check the box if you wish to transmit the program guide.
- **IP:** This data cannot be changed. It is the IP address assigned to the streamer module on the Network tab in the Configuration window.
- **USER:** The name entered will be transmitted on the SAP/SDP channel.
- **SECONDA:** Introduce the time interval, in seconds, at which the transmitted programmes guide will refresh.

The screenshot shows the 'Settings' menu with 'Status' selected. Under 'IP output data', the status is 'OK' (green checkmark), the number of services is '1', and the output bitrate is '10.5 Mbps'.

Item	Value
Status	OK
Number of services	1
Output bitrate	10.5 Mbps

- **STATUS:** Tells you the status of the output services
- **NUMBER OF SERVICES:** Reports the number of services.
- **OUTPUT BITRATE:** Tells you the speed of the binary data at the unit's output.

USB Player

Select the **SETTINGS** menu and then the **USB PLAYER** submenu. Within the **FILE PLAYBACK** submenu, the **Status** section provides the following information:

The screenshot shows the 'Settings' menu with 'USB player' selected. Under 'file playing', the status is 'Error' (red X), 'File available' (red X), and 'Player status' (red X). The Actions section contains 'Play' and 'Stop' buttons.

Item	Status	Actions
USB inserted	Error (Red X)	Play (Play button) / Stop (Red Stop button)
file available	Error (Red X)	
Player status	Error (Red X)	

- **USB INSERTED:** Tells you whether or not there is a pen drive connected to the unit.
- **FILE AVAILABLE:** Tells you the whether a file is available and can be played back
- **PLAYER STATUS:** Tells you whether the file is being played back or not.

Within the **FILE PLAYBACK** submenus, the **Actions** section allows you to choose whether to play or stop playing the file, using two available buttons.

NOTE



The modulator generates a signal for 2 services even though we have one input selected. This allows the TV to memorize the 2nd service which is destined to a future employment of the USB flash drive.

With this we would avoid TV rescanning if the first installation was made without using the USB flash drive.

NOTE



In case of connecting only the USB flash drive, the input mode must be "2xCVBS".

Status

- 1) Select the STATUS menu.

The STATUS tabs provide all the information on the statuses of the inputs and outputs, and the other general parameters of the unit (alarms, temperature, services, etc).

- 2) Access the INPUT tab.

The screenshot shows the IKUSI web interface. At the top left is the IKUSI logo with 'voblasta' underneath. To the right is 'MAC-HD' and a 'logout' link. Below this is a green navigation bar with 'General', 'Settings', 'Status', and 'Reports' tabs. The 'Status' tab is active. Below the navigation bar is the 'Input' section. It contains a table with the following data:

	Input 1
Audio	
Video	
TV system	

■ INPUT 1 AND INPUT 2:

- VIDEO: shows whether there is a valid video signal at the input.
- AUDIO: shows whether there is a valid audio signal at the input.
- TV SYSTEM: shows the colour system at the input.

- 3) Access the OUTPUT tab.

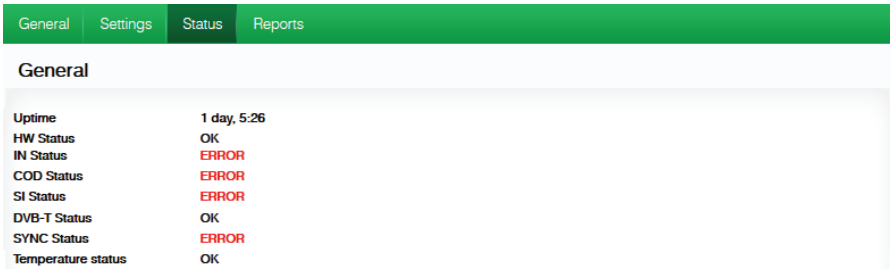
The screenshot shows the IKUSI web interface with the 'Status' tab active. Below the navigation bar is the 'Output' section. It contains a table with the following data:

	DVB-T
Bitrate	0 Mbps
Max bitrate	31.668 Mbps
Current nulls	100%
Minimum nulls	100%

■ OUTPUT BITRATE:

- MAX BITRATE: Displays the maximum binary data rate supported by the unit.
- CURRENT NULL: Displays the current binary data percentage at the output not containing any information.
- MIN NULL: Displays the minimum binary data percentage at the output not containing any information.

4) Access the GENERAL tab.



■ GENERAL:

AVAILABLE VALUES: OK/ERROR

- TIME WORKING: Displays an error message if a hardware problem has been detected.
- HW STATUS: Displays an error message if an HD input has been inserted in the SD input.
- IN STATUS: Displays an error message if there is any problem at the DVB-T output, such as an overflow.
- COD STATUS: Displays the status of the MPEG encoder.
- SI STATUS: Displays the status of the DVB signal.
- DVB-T STATUS: Displays an error message if there is any synchronisation problem.
- IP STATUS: Displays an error message if there is any problem.
- SYNC STATUS: Muestra error si hay algún problema de sincronización
- TEMPERATURE STATUS: Displays an error message if the unit's temperature goes beyond the established thresholds.

Reports

Configuration

- 1) Select the REPORTS menu and then the CONFIGURATION submenu.

The general report provides information on the general configuration of the unit, as performed in the following submenu tabs:

The screenshot shows the IKUSI MAC-HD configuration interface. At the top, there is a navigation bar with the IKUSI logo and the unit name 'MAC-HD'. Below this is a menu bar with tabs for 'General', 'Settings', 'Status', and 'Reports'. The 'Reports' tab is currently selected. Underneath, there are sub-tabs for 'Settings' and 'Logs'. The main content area is divided into several sections:

- Identification:** A table with three columns: Model, Serial number, and MAC. The values are: Model: MAC-HD, Serial number: 001122334455, MAC: 00:09:E3:00:11:22. There are also labels for Identifier, Location, Installer, and Contact.
- Local settings:** Fields for Country (Australia), Timezone (Australia/Perth), Date (2013-09-11), and Hour (12:25).
- Network settings:** Fields for IP (192.168.1.8), Netmask (255.255.255.0), and Gateway (192.168.1.1).
- LCD joystick:** A 'Block' checkbox (unchecked) and an 'Unblock code' field with the value '0000'.
- Selection:** Two dropdown menus: 'Input type' set to '1 HD (HD/SD HDMI)' and 'Output type' set to 'DVB-T'.

Input settings

Input 1

Input ratio

Output settings

Service 1

Intensity

Codification

Video bitrate (+4000-10000)

Audio bitrate

PID blockage Audio Video

Name MOD SERV 1

SID 21

LCN 1

EIT name MOD SERV 1

EIT description

DVB-T Configuration

Channel	21	OFDM mode	<input type="text" value="8K"/>
Frequency	474000	Bandwidth	<input type="text" value="8 MHz"/>
Attenuation (dB)	0	Guard interval	<input type="text" value="1/32"/>
		Constellation	<input type="text" value="64 QAM"/>
		Code rate	<input type="text" value="7/8"/>

Network settings

Name	Standard	NIT LCN mode	<input type="text" value="OFF"/>
Provider	IKUSI	Insert TDT-TOT	<input checked="" type="checkbox"/>
NID	1		
TSID	21		
ONID	8442		

Logs

Select the REPORTS menu and then the SYSTEM LOGS submenu.
 The historical system report will display the most recent events.
 The entries shown in this report can be filtered by level or process:

The screenshot shows the IKUSI web interface for a device named 'MAC-HD'. The 'Reports' tab is selected, and the 'Logs' submenu is active. The log entries are filtered by 'Process' (All) and 'Error level' (Debug). The log table contains the following data:

Date	Level	Process	PID	Message
Sep 11 12:39:54	err	NIM_AV0	333	SERVICIO:1
Sep 11 12:39:54	err	NIM_AV0	333	ID_HARDWARE
Sep 11 12:39:55	err	NIM_AV0	333	SERVICIO:1
Sep 11 12:39:55	err	NIM_AV0	333	INIT_DIGITALIZADOR_AV
Sep 11 12:39:55	info	NIM_AV0	333	INIT DIGITALIZADOR
Sep 11 12:39:55	info	NIM_AV0	333	//===== Load EDID into SPI EEPROM =====
Sep 11 12:39:55	info	NIM_AV0	333	//=== Has detected reset command has to wait for 300 Millisecond.
Sep 11 12:39:56	info	NIM_AV0	333	//===== Load EDID into SPI EEPROM =====
Sep 11 12:39:57	info	NIM_AV0	333	//=== Has detected reset command has to wait for 300 Millisecond.
Sep 11 12:39:59	info	NIM_AV0	333	//===== XC_INPUT_HDMI_TO_HDMI =====
Sep 11 12:40:01	err	NIM_AV0	333	SERVICIO:1
Sep 11 12:40:01	err	NIM_AV0	333	ID_HARDWARE
Sep 11 12:40:02	err	NIM_AV0	333	SERVICIO:1
Sep 11 12:40:02	err	NIM_AV0	333	INIT_DIGITALIZADOR_AV
Sep 11 12:40:02	info	NIM_AV0	333	INIT DIGITALIZADOR
Sep 11 12:40:02	info	NIM_AV0	333	//===== Load EDID into SPI EEPROM =====
Sep 11 12:40:03	info	NIM_AV0	333	//=== Has detected reset command has to wait for 300 Millisecond.
Sep 11 12:40:03	info	NIM_AV0	333	//===== Load EDID into SPI EEPROM =====
Sep 11 12:40:04	info	NIM_AV0	333	//=== Has detected reset command has to wait for 300 Millisecond.
Sep 11 12:40:06	info	NIM_AV0	333	//===== XC_INPUT_HDMI_TO_HDMI =====
Sep 11 12:40:08	err	NIM_AV0	333	SERVICIO:1
Sep 11 12:40:08	err	NIM_AV0	333	ID_HARDWARE
Sep 11 12:40:09	err	NIM_AV0	333	SERVICIO:1
Sep 11 12:40:09	err	NIM_AV0	333	INIT_DIGITALIZADOR_AV
Sep 11 12:40:09	info	NIM_AV0	333	INIT DIGITALIZADOR
Sep 11 12:40:09	info	NIM_AV0	333	//===== Load EDID into SPI EEPROM =====
Sep 11 12:40:09	info	NIM_AV0	333	//=== Has detected reset command has to wait for 300 Millisecond.
Sep 11 12:40:10	info	NIM_AV0	333	//===== Load EDID into SPI EEPROM =====
Sep 11 12:40:11	info	NIM_AV0	333	//=== Has detected reset command has to wait for 300 Millisecond.
Sep 11 12:40:13	info	NIM_AV0	333	//===== XC_INPUT_HDMI_TO_HDMI =====
Sep 11 12:40:15	err	NIM_AV0	333	SERVICIO:1
Sep 11 12:40:15	err	NIM_AV0	333	ID_HARDWARE
Sep 11 12:40:16	err	NIM_AV0	333	SERVICIO:1
Sep 11 12:40:16	err	NIM_AV0	333	INIT_DIGITALIZADOR_AV
Sep 11 12:40:18	info	NIM_AV0	333	INIT DIGITALIZADOR



Donostia Ibilbidea, 28
20115 Astigarraga, Gipuzkoa · España
Tel.: +34 943 44 88 95
television@ikusi.com · www.ikusi.tv

MAC-HD (EN)