



TNS-101 (Ref. 5114)

FTA or MultiCrypt DVB-T → IP Streamer — Common Interface

Configuration and Settings

User Manual



EN

Configuration and Setting of the TNS-101 Streamer Module
User Manual

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Introduction

This Manual

This manual describes the configuration and settings programme for the TNS-101 Streamer Module. It is the second part of the user documentation for said module, the first part of which is the Installation and Access manual supplied in paper format.

Product Description

TNS-101 streamers are DVB-T to IP gateways designed to broadcast in multicast the services (TV and Radio programmes) issued from FTA or encrypted digital terrestrial reception; in case of encrypted signal, a CAM containing the operator's smart card must fit the front panel slot. The IP streams can be viewed using an IPTV set-top box or a software video player.

TNS-101 modules have an IKUSI ClassA mechanical format. As such, they are fixed to BAS-700 / BAS-900 baseplates or to an SMR-601 rack frame, and are +12 VDC powered from a CFP module.

Characteristics

- Input: 1 DVB-T transport stream (MPTS). Output: up to 8 simultaneous, IP-encapsulated services (TV programmes), with individual multicast addresses.
- Information filtering of DVB tables.
- UDP & RTP transmission protocols.
- Web interface for configuration and setting.
- Alarm information SNMP agent.
- SAP & SDP protocols that facilitate automatic service selection on the user's STB and provide information to external servers.

ADVANCED

PID filtering

PSI/SI parsing

Transparent ECM & EMM messaging

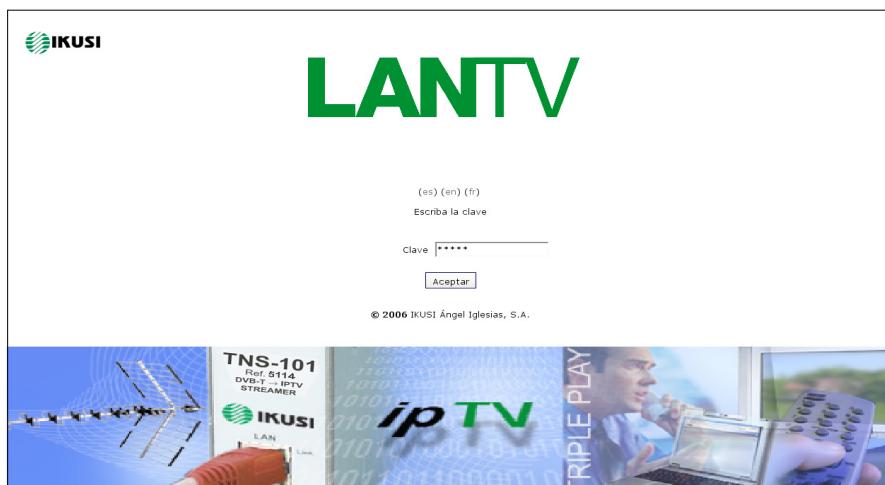
PAT and PMT table regeneration

Routing or blocking for CAT, NIT, SDT, EIT, TDT tables

Configurable QoS marking

Configurable Time To Live

When a connection is established between the TNS-101 streamer and the control PC, the programme access screen will appear:



Program Access Screen

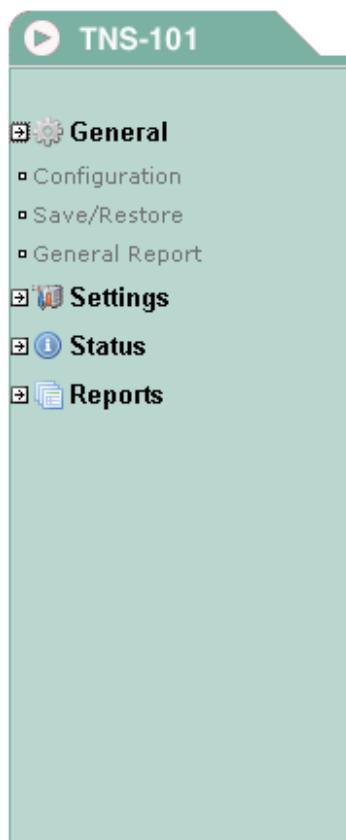
Once the desired programme language has been chosen [Spanish (es), English (en), French (fr)], enter the password and click on *OK*.

Note: The default password — admin — can (and must) be changed as explained on page 9.

Chapter One - Configuration of the TNS-101 Streamer

In this Chapter

- Configuration
- Save/Restore
- General Report



General Configuration

Initial program screen

The first screen that appears when the programme is accessed contains the "Output" window, which gives information on the IP streams that have been created on the module and which may or may not be incorporated into the output data stream.

On the left of this screen are the menus that access all of the programme's functionalities.

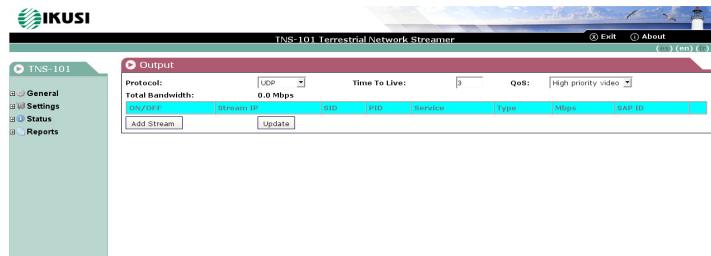


Figure 1.1 - Initial programme screen

Click on the **General** menu on the left of the screen to display a dropdown list containing the 3 options: *Configuration*, *Save/Restore* and *General Report*.

Click on *Configuration*. The Configuration window will appear :

 A screenshot of a configuration window titled 'Configuration'. At the top, there is a red header bar with a play icon and the word 'Configuration'. Below the header is a navigation bar with tabs: 'Identification' (which is highlighted in orange), 'Network', 'Password', 'Shutdown', and 'Update firmware'. The main content area is divided into two columns. The left column contains labels for 'Model', 'Serial Number', 'Firmware version', 'Identifier', 'Location', 'Installer', 'Contact', and 'Installation Date'. The right column contains corresponding values: 'TNS-101', '5102SA', '200704-r1.01', and so on. There is also a date picker for 'Installation Date' with the placeholder 'mm-dd-yyyy'. At the bottom of the window is a 'Save' button.

Figure 1.2 - Identification card of the Configuration window.

Identification

The identification card (Figure 1.2) provides basic data on the TNS-101 streamer. The different card fields are completed as follows:

"Model": TNS-101. This data cannot be changed.

"Serial Number": Informational data which cannot be changed.

"Firmware Version": As above.

"Identifier": Any name that the installer or operator wishes to assign to the streamer module can be entered here.

"Location": Enter the postcode of the installation site if required.

"Installer": The installer's identification details can be entered here.

"Contact": Then enter their contact details (telephone number, email).

"Installation date": The date on which the streamer module was installed can be entered here.

Click on the *Save* button at the bottom of the window to store the information on the streamer module, this information is then shown each time the module is accessed.

Network

Click on the Network tab to configure the streamer's ethernet connection parameters. The following card is displayed:

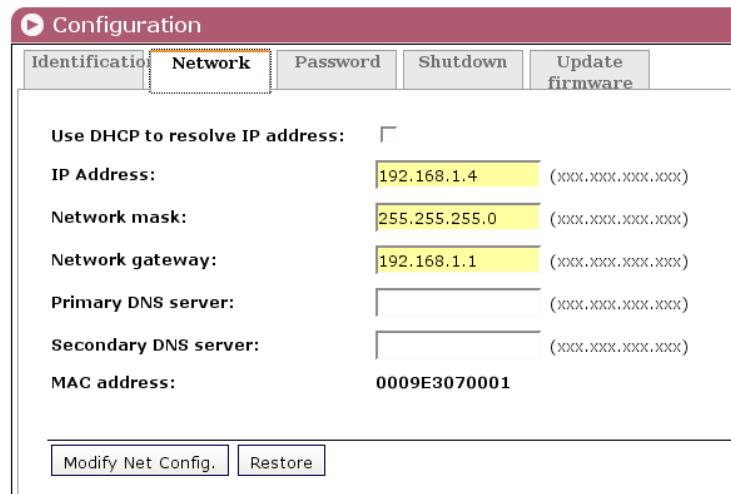


Figure 1.3 - Network card of the Configuration window.

"Use DHCP to get IP address": If this box is checked, the TNS-101 module will use the DHCP protocol for assigning dynamic IP addresses. Consequently, no data needs to be entered in the next five fields on the tab.

If the administrator of the network on which the TNS headend is installed assigns static IP addresses, the box will not be checked and the following fields will need to be filled in.

WARNING: *If this option is activated, the IP address assigned to the streamer can only be known by consulting the DHCP server management system.*

"IP Address": Enter the IP address that you wish to assign to the streamer. This address must fall within the range of local network addresses.

"Network mask": Enter the local network mask.

"Default gateway": Enter the IP address of this gateway. This information is only required if you want the streamer to access Internet.

"Primary DNS server": Enter the primary server's IP address. Equally, this information is only required if you want the streamer to access Internet.

"Secondary DNS server": Enter the same information for the secondary server.

"MAC Address": The physical address of the streamer's ethernet network card is displayed automatically.

Once you have filled in all of the required information, click on *Modify Network Configuration*. If, at the last moment, you decide to keep the current settings, click on *Restore*.

Password

If you want to change the current access password, click on the Password tab. The following card is displayed:

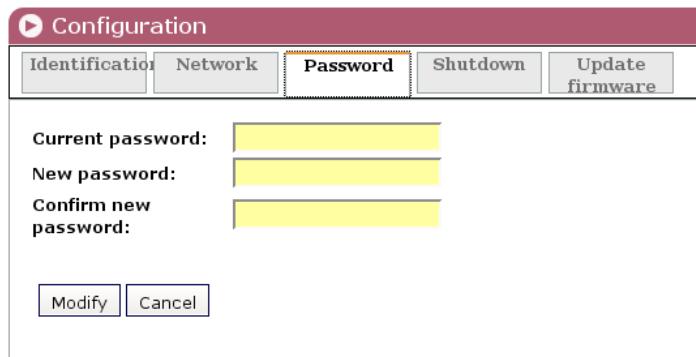


Figure 1.4 - Password card of the Configuration window.

"Current password": Enter the current password.

"New password": Enter the new password which will be required to access the program the next time.

"New password confirm": Re-enter the new password.

Once you have entered the required information, click on *Modify* so that the streamer adopts the new access password. If, at the last moment, you decide to keep the previous password, click on *Cancel*.



Note

If you do not know the old password, i.e. the password used to access the current configuration session, you must perform a Password Reset as explained in the Installation and Access manual. Following this reset, the program password will be the default password: admin.

IMPORTANT: When you perform a password reset, the IP address assigned to the streamer on the Network card (previous page) automatically changes to the default setting: <http://92.168.1.4>.

Shutdown

If you need to reboot the streamer for any reason, click on the Shutdown tab. The following card is displayed:

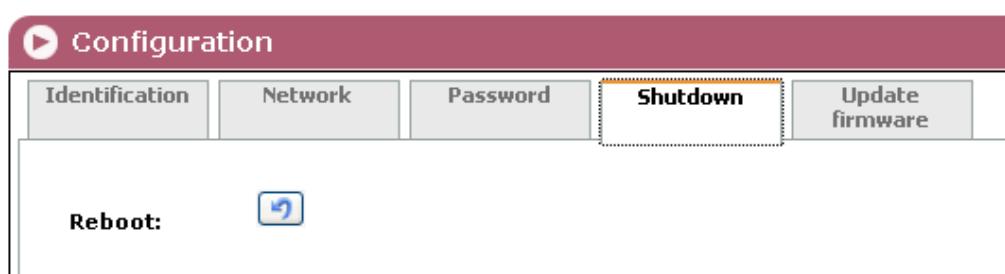


Figure 1.5 - Shutdown card of the Configuration window.

Click on *Reboot*. A reset is then performed after which the Output Streams screen will appear, this is the presentation screen of the program.

Update Firmware

If you wish to update the streamer's firmware, click on the Update Firmware tab. The card displayed (Figure 1.6) shows the firmware version that the streamer has at the present time.

(The firmware is software stored in the module which is responsible for its basic operation).



Figure 1.6 - Update Firmware card of the Configuration window.

WARNING: The firmware update file will have been previously stored on the PC hard drive. (You can download it from <http://www.ikusi.com>).

Click on *Browse...* and select the firmware update file from the hard drive. When the file name is in the box, click on *Start*. The new firmware will be installed on the streamer and then its name will appear in the card replacing the one of the file before.

Save/Restore System Settings

All of the data established on the streamer module through the various Configuration window tabs can be saved onto a backup file. Inversely, the configuration data saved on an appropriate file can be restored on streamer module.

Click on the **General** menu on the left of the general program screen and click again on the *Save/Restore* option. The Save/Restore window will appear:

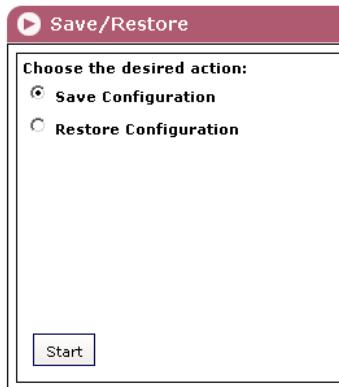


Figure 1.7 - Save/Restore window

Save/Restore Configuration

"Save configuration": Select the option in the window and click on *Start*. A window is displayed which allows you to select the destination folder for the data file for the current streamer configuration.

"Restore Configuration": Select this option in the Save/Restore window (Figure 1.7) and click on *Start*. The Restore Configuration window is displayed (Fig. 1.8) Click on *Browse...* and select the file containing the configuration data that you wish to restore on the streamer module. Once you have selected the file, click on the *Upload File button* at the bottom of the screen. The upload confirmation window will be displayed.



Figure 1.8 - Restore Configuration Window

General Report

Click on the **General** menu on the left of the general program screen and click again on the *General Report* option. The General Report window is displayed:

General Report	
General	
Identification	
Model:	TNS-101
Firmware version:	200705-r1.02
Identifier:	
Location:	
Installer:	
Contact:	
Installation Date (mm-dd-yyyy):	11-30-1999
Network	
Use DHCP to resolve IP address:	No
IP address:	192.168.1.4
Network mask:	255.255.255.0
Gateway:	192.168.1.1
MAC:	00 09 E3 03 XX XX
Settings	
Input	
Input Frequency (MHz):	786
Bandwidth:	8 MHz
Hierarchy:	High priority
Output	
Protocol:	UDP

Figure 1.9 - General Report window

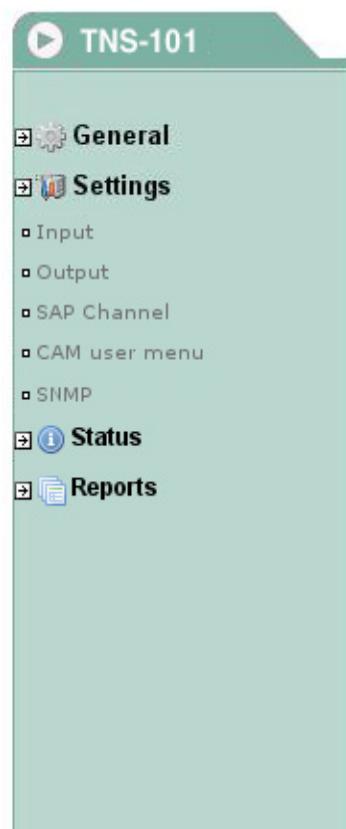
This window provides complete information on the TNS-101 module, not only regarding the configuration described in the previous pages, but also in relation to the current settings parameter values and operational status.

The information contained in this window can be printed by clicking on the *Print page* button at the bottom of the screen.

Chapter Two - TNS-101 Streamer Settings

In this Chapter

- Input Settings
- Output Settings
- SAP Channel Settings
- CAM User Menu
- SNMP Configuration



Input Settings

The TNS-100 module settings are grouped into five sections or categories: Input, Output, SAP Channel, CAM User Menu and SNMP. Click on the **Settings** menu on the left side of the general program screen. A drop down list with the five option for this menu is displayed: *Input*, *Output*, *SAP Channel*, *CAM User Menu* and *SNMP*.

Click on *Input*. The Input window will appear:

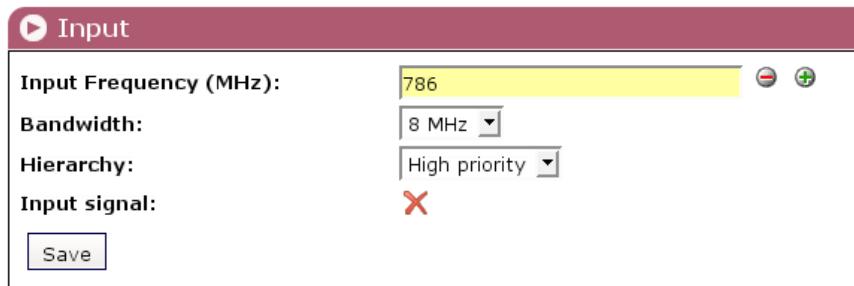


Figure 2.1 - Input window

This window is used to enter the settings values for three parameters: Input Frequency (MHz), Bandwidth (MHz) and Hierarchy. In addition, it informs whether the streamer module has synchronised or not with the input signal.

"Input Frequency (MHz)": Enter the central frequency of the input channel. The operation band is 174-230 MHz and 470-862 MHz.

"Bandwidth" : It is the channel bandwidth. Select 7 or 8 MHz from the drop down list.

"Hierarchy" : This parameter refers to the hierarchy of the bit stream's channel coding and modulation. According to it, select High Priority or Low Priority from the drop down list. In the absence of hierarchy one must select High Priority.

Click on *Save* so that the streamer adjusts to the different data values entered.

"Input signal": This indicates if the streamer module has synchronised (✓) or not (✗) with the input signal. If it has not synchronised, check the setting values that appear in the three boxes.

Output Section Settings

Click on the **Settings** menu on the left of the general programme screen and click again on the *Output* option. The Output window will appear:



Figure 2.2 - Output window

This window is used to select and configure the required services (TV or Radio programmes) from the DVB-T input transport stream as IP streams. The window displays three boxes at the top, and in the centre it displays a table showing the IP streams already configured and which may or may not be transmitted by the streamer module (see NOTE below). For each stream it shows the multicast address and the different parameters such as the PID of the main stream or the total bandwidth in Mbps.

"Protocol": The drop down menu offers two options : UDP and UDP/RTP. UDP is a transport protocol which is not connection oriented and is particularly useful for streaming. UDP/RTP adds extra data fields so that the data flow is served at the correct speed for its projection in real time.

"Time To Live": Is a parameter used to restrict the stream multicasting range. A number between 1 and 255 is entered in this box. Each time that an IP stream passes through a router, the TTL is reduced by one unit. The stream will be rejected by any router when the TTL value is reduced to zero.

"QoS": Quality of Service. The drop down list offers five differentiated service options or *Diffserv*. These options relate to the priority that you wish to assign to the streaming packets on their routes through switches or routers that are QoS management capable:

- 1 Maximum priority
- 2 High priority video
- 3 Low priority video
- 4 Video and voice
- 5 Best effort (best effort made to correctly deliver the video data and the associated audio data)

NOTE: Configured IP Streams are those that have been created in the manner described on the following page. These streams may or may not be incorporated into the data stream depending on whether their corresponding ON/OFF boxes in the first column are checked or not. The number of checked boxes cannot be more than 8.

The Output window allows you to perform three actions:

- **Add Stream:** This adds a new IP stream to the display table.
- **Edit Stream:** Allows you to change the parameters of the IP stream on the display table.
- **Delete Stream:** Deletes an IP stream from the display table.

Add Stream

Click on the *Add Stream* button at the bottom of the Output window (see Figure 2.2 on the previous page). The Add Stream window is displayed:

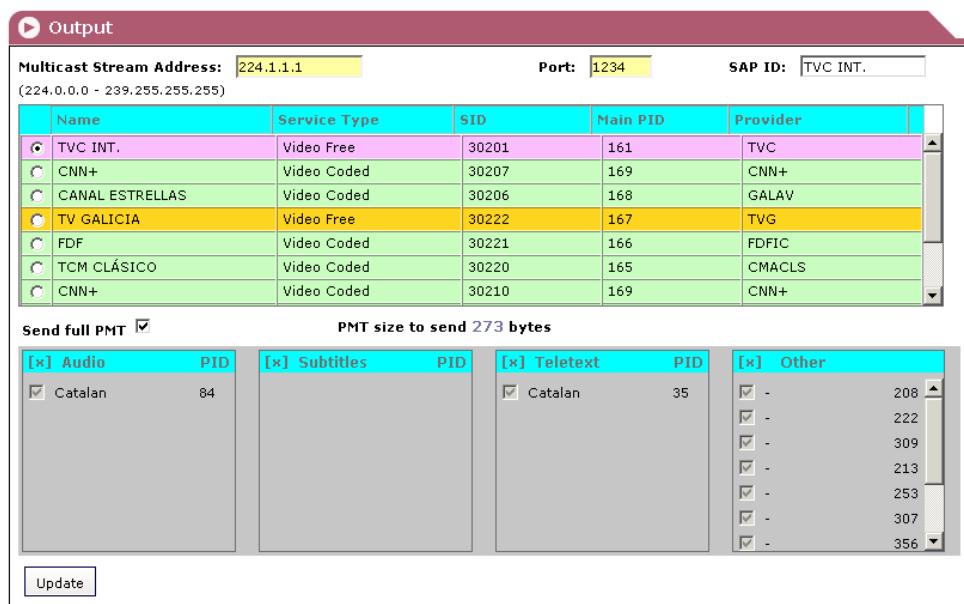


Figure 2.3 - Add Stream window

The window shows all of the input DVB-T transport stream services, including different details (name, type, identifier, main PID, provider). Highlighted in orange are those services which are already configured as IP streams (seen in the display table in the Output window) and highlighted in green are those which are not yet configured.

To add a stream to the display table, select the button for the corresponding service in the first column. The line will be highlighted in pink and at the bottom of the screen a group of boxes will appear which relate to the elemental streams associated with the main stream of the service.

The boxes at the top and middle of the screen will now be completed, and the elemental streams at the bottom will be configured:

Boxes at the top of the screen:

"Multicast Stream Address": Enter the multicast address required for the stream to be added. The available range is from 224.0.0.0 to 239.255.255.255, but it is recommended to reduce it from 224.0.1.0 to 238.255.255.255. See NOTE below.

"Port": The default value is 1234.

"SAP ID": Is the name given to the service on the subscriber's set-top box or reproducer, if the device supports SAP/SDP protocol. The name that the service has on the input transport stream is the default name.

"Channel Number": Enter the order number you want to assign to the service on the subscriber's set-top box or reproducer, if the device supports SAP.

"SAP Group": Select from the drop down menu the SAP group to which you want to link the service. The group will have been previously created through the SAP/SDP Channel window (see next page).

Box in the middle of the screen:

"Send full PMT": Leave this box checked if you wish to send the complete PMT table (Program Map Table) for the service. Otherwise, if you would like to refrain from sending certain PIDs that are not relevant to the elemental streams associated with the main stream (bottom boxes) remove the check from the box.

Bottom boxes:

Only in cases where the "Send full PMT" box is NOT checked can you make the selections that you wish on each of the elemental streams associated with the main stream: audio, subtitles, teletext, etc.

Once all data is entered and the appropriate selections have been made, click on *Update* to add the new IP stream to the display table in the Output window.

Edit Stream:

You can change the parameters of an IP stream displayed in the table on the Output window. Click on the icon  at the end of the line. The previously described Add Stream screen is displayed, where you can change any editable field, from the multicast address to the elemental stream selections in the boxes at the bottom.

Once all changes that you require are made, click on *Update* and the IP stream will be displayed with its new configuration in the display table in the Output window.

Delete Stream:

If you wish, you can delete an IP stream from the display table on the Output window. To do so, click on the icon  at the end of the line.

NOTE : Range 224.0.0.0 through 224.0.0.255 is reserved for local purposes (as administrative and maintenance tasks). Datagrams destined to this use are never forwarded by multicast routers.

Similarly, the range 239.0.0.0 to 239.255.255.255 has been reserved for "administrative scoping" (administratively defined topological regions).

SAP Channel Settings

Click on the **Settings** menu on the left of the general programme screen and click again on the *SAP Channel* option. The SAP Channel window will appear:

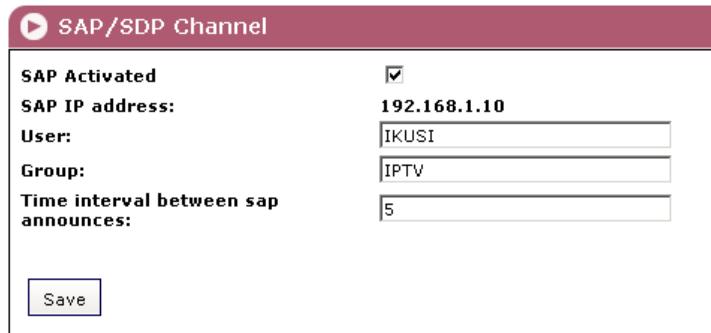


Figure 2.4 - SAP Channel window

This menu option is used to configure the announcement and service description SAP/SDP channel. SAP and SDP are two protocols for creating an EPG type program guide.

"SAP Activated": Check the box if you wish to transmit the program guide.

"SAP IP address": This data cannot be changed. It is the IP address assigned to the streamer module on the Network tab in the Configuration window (page 8).

"Username": The name entered will be transmitted on the SAP/SDP channel.

"Group": As above.

"Time interval between SAP announcements": Introduce the time interval, in seconds, at which the transmitted programmes guide will refresh.

Click on *Save* to save the SAP/SDP channel configuration data.

User Menu of the Conditional Access Module (CAM)

Click on the **Settings** menu on the left of the general programme screen and click again on the *CAM User Menu*. The CAM User Menu window will appear :

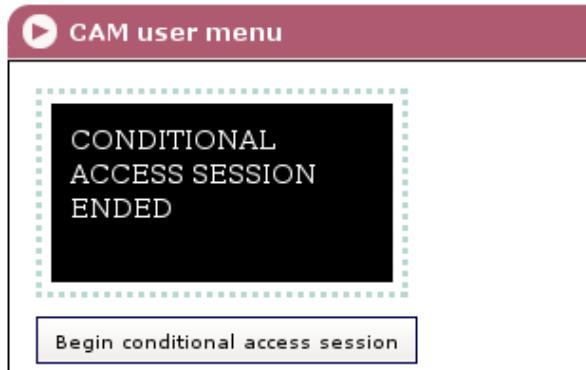


Figure 2.5 - CAM User Menu window

Click on the *Begin Conditional Access Session* button. A window showing a menu whose content depends on the inserted CAM module will appear. Figure 2.6 below shows as an example the menu presented by a particular Mediaguard CAM.

Independently of the CAM type, the different options of the initial menu are always numbered, so that the access to these is accomplished through the PC keyboard. Carrying on with the example, to accede to the *Card* option you must press the key "1" of the keyboard (number 1 will be shown in the lower box, see Figure 2.7) and next you must click on the *Send* button. The window of Figure 2.8 appears. This window, besides to inform about the card serial number and the stored maturity level, allows to change this level through the *Change Maturity* option, via keyboard and *Send* button, as explained.

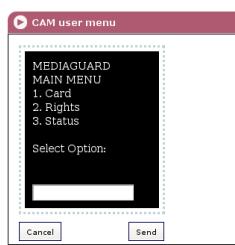


Figure 2.6

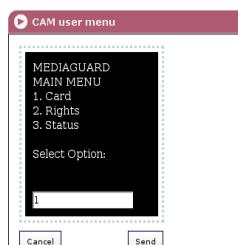


Figure 2.7



Figure 2.8

The way to accede to the different options of the menu has been clear, so it is not necessary to follow with the example. The procedure is, as aforesaid, similar for all type of CAM modules. When in doubt, contact the vendor of the module.



Note

The correct programme de-encrypting is guaranteed only with CAMs validated by IKUSI. Consult on www.ikusi.com the operativity of your CAM.

SNMP Configuration

Click on the **Settings** menu on the left of the general programme screen and click again on the **SNMP** option. The SNMP Agent window will appear:

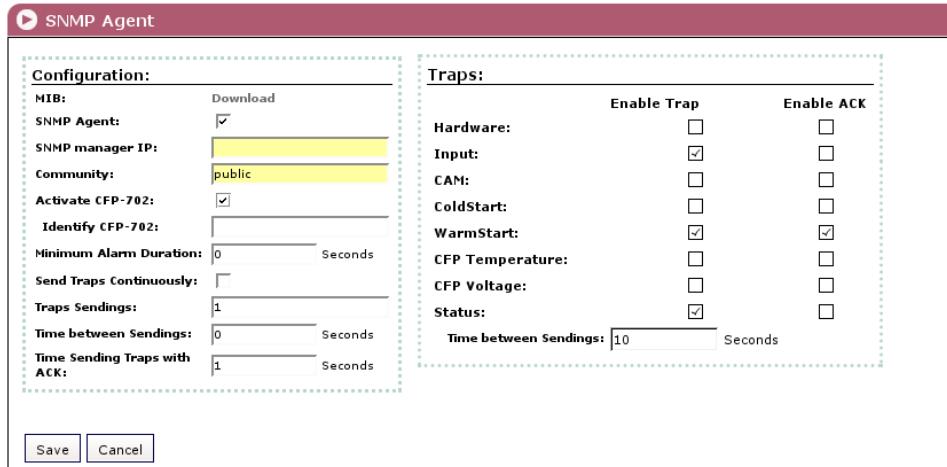


Figure 2.9 - SNMP Agent window

This window is used to configure the notification of determined traps the SNMP manager (management station). It has two sections: **Configuration** and **Traps**.

Configuration Section :

"MIB" : Click on *Download* to download the MIB of the TNS-101 streamer.

"SNMP Agent" : Tick the box if you want to activate the SNMP agent implemented in the streamer module.

"SNMP Manager IP" : Enter the IP address of the manager.

"Community" : Enter the desired name for the group formed by the streamers and power supplies of the present TNS headend, and by the manager.

"Activate CFP-702" : Tick the box in the case the streamer module is linked to a CFP-702 power supply and you want to integrate this into the management system. (See Fig. 2.10 on next page).

"Identify CFP-702" : Enter a name for the CFP-702 linked to the present streamer module.

"Minimum Alarm Duration" : Enter the minimum duration in seconds of an alarm event so that it be considered as such by the SNMP manager.

"Send Traps Continuously" : Tick the box if you want that to an alarm event the related trap be sent repeatedly to the manager. If this box is ticked, the two next ones are disabled.

"Trap Sendings" : Enter the times to an alarm event you want to send the corresponding trap to the manager.

"Time between Sendings" : It is related to the box before. Enter the time in seconds between the trap sendings.

"Time Sending Traps with ACK" : It is applicable to traps with ACK enabled. Enter the maximum time in seconds to an alarm event the trap will be being sent continuously until having an acknowledgement from the manager.

Traps Section :

You select here the streamer parameters whose alarm status generate traps, either with or without acknowledgement.

"Hardware" : Tick the box for sending an alarm trap when there be an anomaly in the streamer's circuitry. If you want to receive an acknowledgement from the SNMP manager, tick also the Enable ACK box at right.

"Input" : Idem when there be no synchronisation with the input signal.

"CAM" : Idem when the CAM module doesn't work properly or is not installed.

"ColdStart" : Idem when there be a Cold Start (the power is turned off then back on).

"WarmStart" : Idem when the module is rebooted (through the Shutdown card of the Configuration window, see page 9).

"CFP Temperature" : It is applicable only if the streamer module is linked to a CFP-702 power supply, with the object of incorporating this to the SNMP system. It is related to the internal temperature of the power supply. Tick the box so that the alarm trap be transmitted when this temperature exceeds the established limits.

"CFP Voltage" : Idem in relation to the +12V output voltage of the power supply.

"Status" : Tick the box for sending a "summary" trap with the current status of the most outstanding parameters.

"Time between Sendings" : This box is enabled only if you ticked the previous one. Enter the desired time in seconds to pass between "summary" trap sendings.

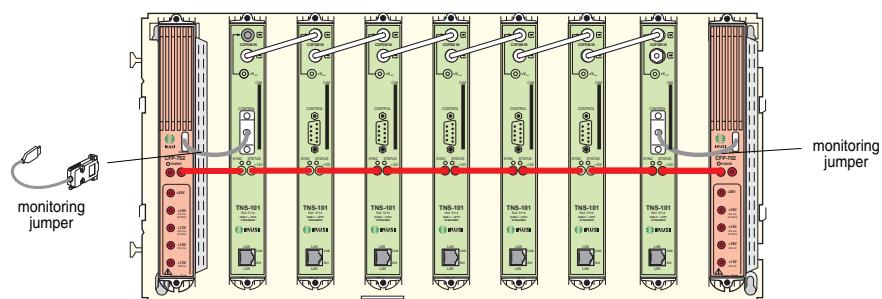


Figure 2.10 - Example of TNS Headend with monitor redundant power system. Contains 7 TNS-101 streamers and 2 CFP-702 power supplies.

Chapter Three - TNS-101 Streamer Status Information

In this Chapter

- Status Information



Status Information

Click on the **Status** menu on the left of the general program screen and click again on the *Status Information* option. The Status Information window appears:

Status information	
Hardware alarm:	✓
Input	✓
CAM:	✗
BER:	2.4E-5
C/N(dB):	12.7
Number of streams:	0
Output Rate (Mbps):	0.0
Information sent (MB):	6.3553E+2
Information received (MB):	2.0607E+1

Figure 3.1 - Status Information window

This window gives you information on the existence of alarms for module operations and on the importance reception and transmission parameters:

"Hardware Alarm": Indicates whether there is an anomaly in the modules circuitry. A ✓ mark indicates correct status or operations and a cross ✗ warns of an alarm situation.

"Input": Indicates whether there is (✓) synchronisation or not (✗) with the input signal. In cases where there is not synchronisation, check the settings made in the Input Settings (page 14).

"CAM": Indicates whether the CAM module works properly (✓) or either it doesn't work properly or no CAM is installed (✗).

"BER": Expresses in scientific notation the channel BER value for the input signal.

"C/N (dB)": The value in dB of the carrier/noise ratio of the input signal.

"Number of Streams": Number of IP streams currently transmitted by the TNS-101 module.

«Bandwidth»: Value in Mbps.

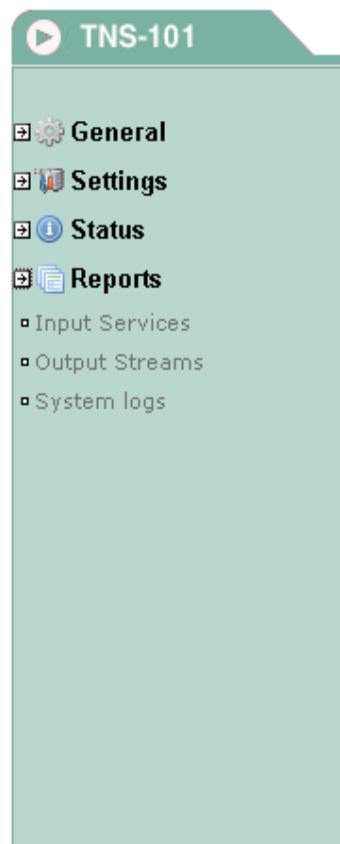
"Information Sent (MB)": Expresses in scientific notation, the amount of information (in megabytes) which has been transmitted by the internal web server since the last module reset.

"Information Received (MB)": The same for information received.

Chapter Four - TNS-101 Streamer Reports

In this Chapter

- Input Services
- Output Streams
- System Logs



Input Services

Click on the **Reports** menu on the left of the general program screen and click again on the *Input Services* option. The Input Services window appears:

Input Services				
Name	Service Type	SID	Main PID	Provider
TVC INT.	Video Free	30201	1025	TVC
PID	Type			Language
161	ITU-T Rec. H.262 ISO/IEC 13818-2 Video			-
84	ISO/IEC 13818-3 Audio			Catalan
35	ITU-T Rec. H.222.0 ISO/IEC 13818-1 PES packets containing private data			Catalan
208	unknown code = 192			-
222	unknown code = 192			-
309	unknown code = 192			-
213	User Private			-
253	User Private			-
307	User Private			-
356	User Private			-
148	User Private			-
151	User Private			-
888	User Private			-

Name	Service Type	SID	Main PID	Provider
CNN+	Video Coded	30207	1029	CNN+
PID	Type			Language
169	ITU-T Rec. H.262 ISO/IEC 13818-2 Video			-
116	ISO/IEC 13818-3 Audio			Spanish
59	ITU-T Rec. H.222.0 ISO/IEC 13818-1 PES packets containing private data			Spanish

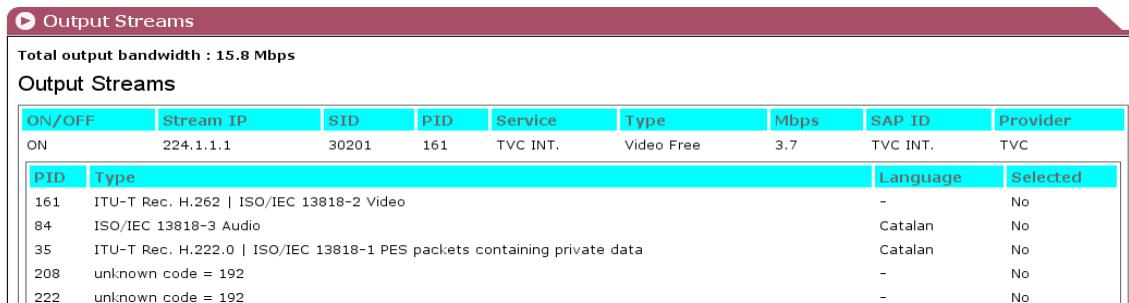
Figure 4.1 - Input Services Window

The Input Services window shows the full information on each of the services contained in the DVB-T input transport stream. In particular, it specifies the values of the following parameters for each service:

- Name of the service
- Type
- SID (service identifier)
- PID of the main stream
- Service Provider
- PID, Type and Language of each one of the elemental streams associated with the main stream

Output Streams

Click on the **Reports** menu on the left of the general program screen and click again on the *Output Streams* option. The Output Streams window will appear:



The screenshot shows a software interface titled "Output Streams". At the top, it displays "Total output bandwidth : 15.8 Mbps". Below this is a table with the following columns: ON/OFF, Stream IP, SID, PID, Service, Type, Mbps, SAP ID, and Provider. There is one row with data: ON, 224.1.1.1, 30201, 161, TVC INT., Video Free, 3.7, TVC INT., TVC. Below this table is another table with columns: PID, Type, Language, and Selected. It contains five rows of data:

PID	Type	Language	Selected
161	ITU-T Rec. H.262 ISO/IEC 13818-2 Video	-	No
84	ISO/IEC 13818-3 Audio	Catalan	No
35	ITU-T Rec. H.222.0 ISO/IEC 13818-1 PES packets containing private data	Catalan	No
208	unknown code = 192	-	No
222	unknown code = 192	-	No

Figure 4.2 - Output Streams window

The Output Streams window shows all IP streams that have been created for this module. These streams may or may not be incorporated in the output data stream.

For each IP it shows the following details:

- ON/OFF (whether the stream is incorporated or not in the output data stream)
- IP Stream (multicast address)
- SID (service identifier)
- PID of the main stream
- Name of the service
- Type
- Total output bandwidth in Mbps
- SAP ID (name with which the service is announced on the subscriber's receiver)
- Service Provider
- PID, Type and Language of each one of the elemental streams associated with the main stream, indicating whether they are incorporated into the main IP output stream or not.

System Logs

Click on the **Reports** menu on the left of the general program screen and click again on the *System Logs* option. The System Logs window will appear:

System Logs				
Date	Time	Log Level	Process	Message
Current Date and time: 15:07 05-08-2007(HH:MM mm-dd-yyyy)				
May 8	15:05:26	info	filter[1923]	decodeCAT: private data = 3,224,146,65,1,224,147,64,1,224,196,0,100, ascii =^CÀ'À@^AàÀ
May 8	15:05:26	info	filter[1923]	decodeCAT: Descriptor tag = 9,length = 4
May 8	15:05:26	info	filter[1923]	decodeCAT: CA_system_ID = 6145, CA_PID = 197, private length = 0
May 8	15:05:26	info	filter[1923]	decodeCAT: private data = ascii =
May 8	15:05:26	info	filter[1923]	decodeCAT: Descriptor tag = 9,length = 4
May 8	15:05:26	info	filter[1923]	decodeCAT: CA_system_ID = 6273, CA_PID = 145, private length = 0
May 8	15:05:26	info	filter[1923]	decodeCAT: private data = ascii =
May 8	15:05:26	info	filter[1923]	decodeCAT: Descriptor tag = 9,length = 4
May 8	15:05:26	info	filter[1923]	decodeCAT: CA_system_ID = 6274, CA_PID = 198, private length = 0
May 8	15:05:26	info	filter[1923]	decodeCAT: private data = ascii =
May 8	15:05:38	info	filter[1923]	decodeCAT: CAT version =^D
May 8	15:05:38	info	filter[1923]	decodeCAT: Descriptor tag = 9,length = 17
May 8	15:05:38	info	filter[1923]	decodeCAT: CA_system_ID = 256, CA_PID = 193, private length = 13
May 8	15:05:38	info	filter[1923]	decodeCAT: private data = 3,224,146,65,1,224,147,64,1,224,196,0,100, ascii =^CÀ'À@^AàÀ
May 8	15:05:38	info	filter[1923]	decodeCAT: Descriptor tag = 9,length = 4
May 8	15:05:38	info	filter[1923]	decodeCAT: CA_system_ID = 6145, CA_PID = 197, private length = 0
May 8	15:05:38	info	filter[1923]	decodeCAT: private data = ascii =
May 8	15:05:38	info	filter[1923]	decodeCAT: Descriptor tag = 9,length = 4

Figure 4.3 - System Logs window

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