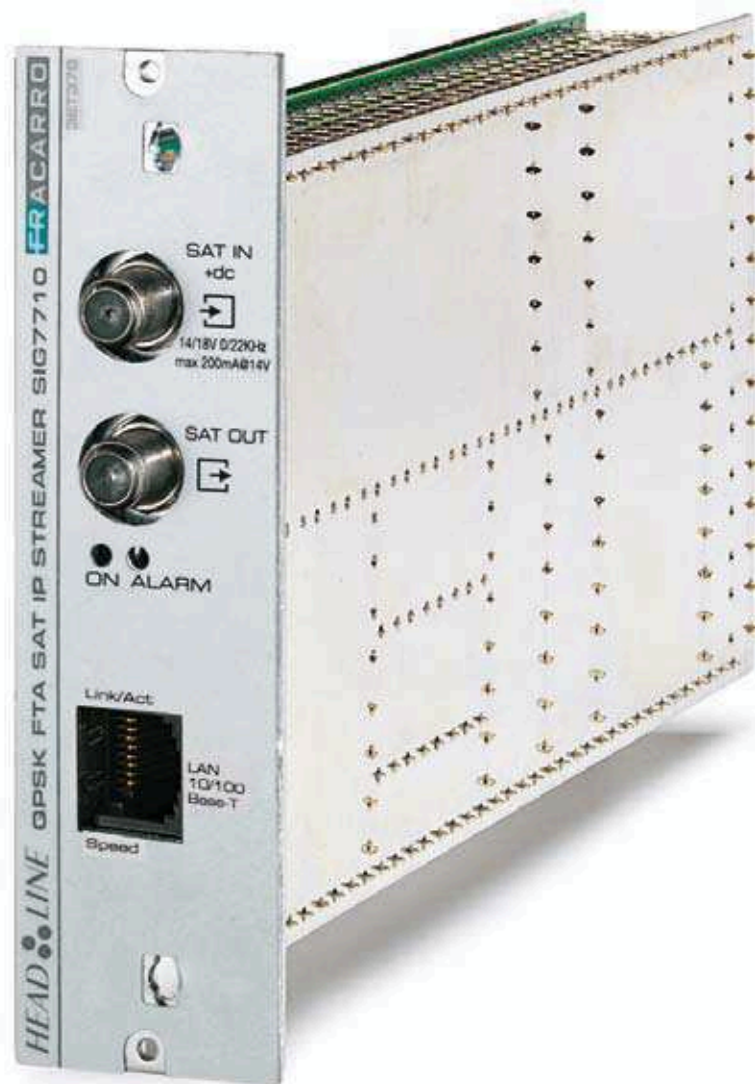


# **SIG7710**

## **QPSK - DVB-IP STREAMER**



**ISTRUZIONI PER L'USO**  
**OPERATING INSTRUCTIONS**  
**INSTRUCTIONS D'EMPLOI**  
**INSTRUCCIONES DE USO**  
**INSTRUÇÕES DE FUNCIONAMENTO**  
**BETRIEBSANLEITUNG**

## 1. SAFETY WARNINGS

The product must be installed only by qualified persons, according to the local safety standards and regulations. It is classified as Class II, in accordance with EN 60065 and, for this reason, it shall not be connect to the protective earth (PE) of the supply mains. The product must be installed in an Headline Sub-rack and it must not be connected directly with an external power cable.

### Installation warnings

- The product must not be exposed to dripping or splashing and thus it shall be installed indoors, in a dry place.
- Humidity and condensation could damage the product. In case of condensation, wait until the product is dry before using it.
- Don't install the product above or close to heat sources, in dusty places or where it might come into contact with corrosive substances.
- Leave enough space around the product housing to ensure sufficient ventilation; an excessive temperature and/or an excessive heating may affect the performance and the life of the product.
- To prevent injury, this product must be securely connected to a Sub-rack, in accordance with the mounting instructions, given in Chapter 3.

In accordance with the European Directive 2004/108/EC (EMC), the product shall be installed using devices, cables and connectors that allow to comply with this directive requirements for fixed installations.

### Earthing of the antenna system

The Sub-rack, where the unit will be installed, must be connected, directly or through the rack, to the earth electrode of the antenna system, in accordance with standard EN 50083-1, section 10. It is recommended to follow the provisions of EN 50083-1 and not to connect the Sub-rack or the rack to the protective earth (PE) of the supply mains.

**IMPORTANT:** Never remove the product cover, parts at hazardous voltage could be accessible when the product case is opened. Only instructed and authorized persons can open the product. In case of failure, do not try to repair the product; otherwise the guarantee will no longer be valid.

## 2. PRODUCT DESCRIPTION

The SIG7710 module receives a digital signal coming from a satellite antenna; it selects a series of programs within the transponder and sends them to the IP network. The resulting IP stream is sent in multicast mode to reduce the global IP traffic on the network because it is sent by the Ethernet switches only to the customers that ask for it.

The signal on the IP is received and displayed by using an IP-Set Top Box or a PC.

Each single SIG7710 module can decode and incapsulate over IP up to 12 video satellite not-crypted programs maximum; each one of them can be assigned to a single multicast IP address.

**IMPORTANT: for the proper functioning of the module is required not to exceed the 20Mbit/s maximum through output for each SIG7710 module (refer to the MEASURE -> TOTAL BIT RATE menù on the TPE or WEB MANAGEMENT -> PROGRAM LIST ->TOTAL BIT RATE on the WEB interface menù).**

The device is equipped with the following:

- 2 input RF connectors (SAT IN – SAT OUT) for SAT IF connection, the SAT signal from the converter LNB will be connected to the first of the 2 connectors;
- Operation and signalization LED (see summarizing table);
- 1 RJ-45 connector (LAN 10/100 Base-T) by which it is possible to configure the module parameters (i.e. Ethernet parameters, INPUT settings, OUTPUT settings) by an integrated web-browser interface. After the configuration it's possible to connect the module the LAN network.

NOTE: For easier headend programming PRESET configurations are available.

ATTENTION: see the last pages of these instructions (the TECHNICAL SPECIFICATIONS paragraph) to know the complete list of technical characteristics.

### 3. PRODUCT INSTALLATION

The SIG7710 module is installed in the sub-rack of the NewHead Line (SIG7901 or SIG7902) series as per the following photos. Take the module out of its packaging and install it in the wanted position. The packing contains the following parts:

- SIG7710 module;
- Fast jumper for the interconnection (KPR41);

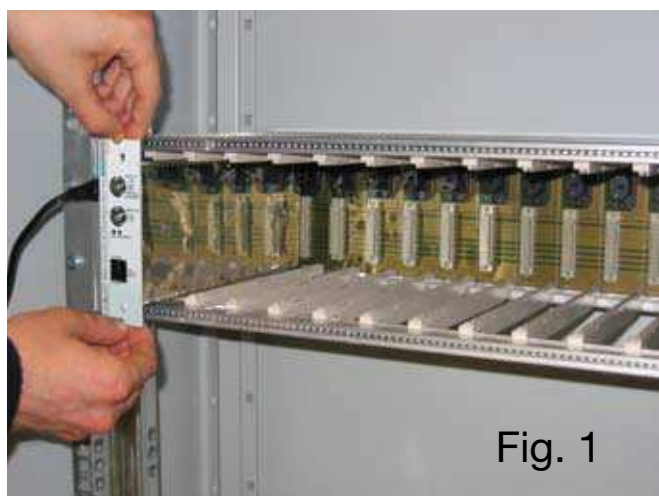


Fig. 1

After the insertion, fix the module using the screws contained in the accessory bag. It's a "plug and play" installation; therefore, the module is ready to operate.

Insert the module in the card guides and gently push back to lock them to the back-panel.



Fig. 2

To remove the module use the handles included in the New Headline 19" sub-rack.

## 4. OPERATION INSTRUCTIONS

Perform the following operations for a proper installation and configuration of the SIG7710 module:

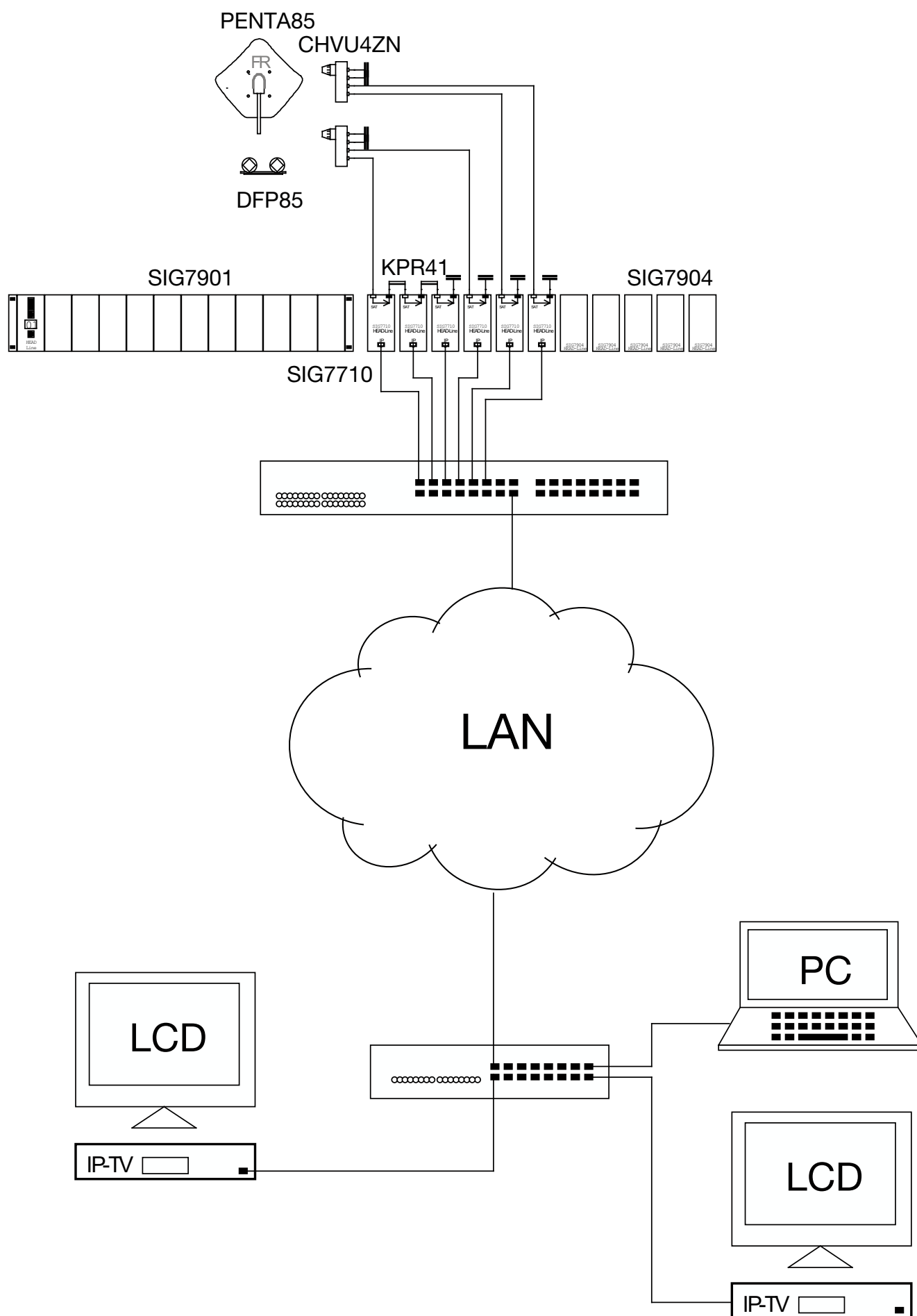
1. Install the module in the sub-rack (SIG7901 or SIG7902);
2. Connect the SAT antenna cable to the SAT IN coaxial connector;
3. Connect the 75 Ohm dummy load to the SAT OUT coaxial connector or use the supplied KPR41 rigid jumper to connect the SAT signal to other New Head Line modules (if available);
4. Connect the main power supply to the sub-rack;
5. Wait for the module initialization (the green LED is fixed ON and the red LED is in OFF status);
6. Connect the TPE to the interconnection module of the sub-rack and carry out the preliminary programming operations that are described in the next paragraphs (see the paragraph PROGRAMMING INSTRUCTIONS – INITIAL PROGRAMMING THROUGH TPE).

LEDs status summarizing table:

Green LED	Red LED	Meaning
OFF	/	Receiver off
Flashing	ON	Receiver boot
ON	Flashing	The receiver is supplied properly, but it is not locked
ON	OFF	The receiver is supplied properly and is locked
ON	ON	The receiver is supplied properly but there is an internal fault
Flashing	ON if a fault is present OFF if it is locked Flashing if it is not locked	Receiver interrogation
Green LINK Ethernet LED on		Ethernet link activated
Green LINK Ethernet LED off		Ethernet link not activated
ACTIVITY Ethernet LED flashing		Ethernet activity in progress
ACTIVITY Ethernet LED off		Ethernet activity lacking

7. Disconnect the TPE and enter the SIG7710 module WEB interface through a PC connection. That way, the configuration of all operational parameters can be completed (see the paragraph of PROGRAMMING INSTRUCTIONS – SIG7710 WEB MANAGEMENT PROCEDURE);
8. Disconnect the configuration PC and connect the streamer to the local network (see the paragraph **CONNECTION OF THE SIG7710 MODULE TO THE LOCAL NETWORK**);

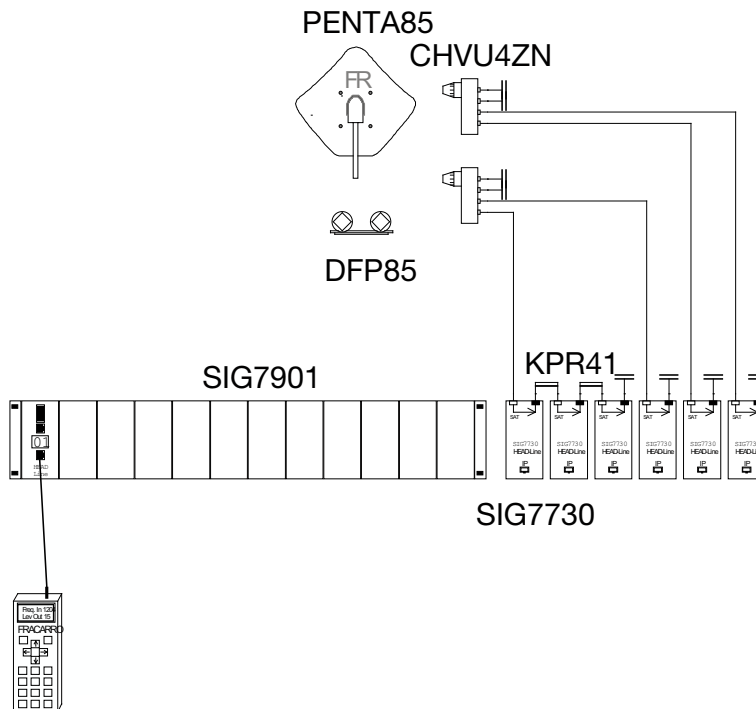
## 4.1 TYPICAL INSTALLATION EXAMPLE



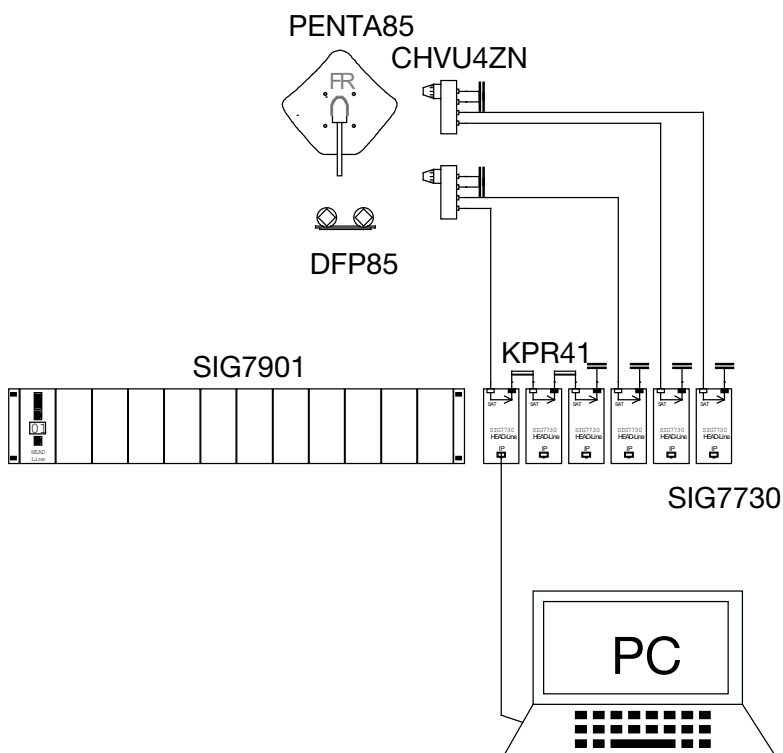
## 5. PROGRAMMING INSTRUCTIONS

The SIG7710 module programming is carried out in 2 consecutive steps:

1. **using the universal TPE programmer**, select the IP address of the module and set the main operation parameters, such as the selection of the satellite transponder and the selection of the digital programs, to be converted (refer to the user's instructions of the universal programmer and the SIG7710 GENERAL MENU);



2. **though the local connection between the module and PC.** To carry out the local connection to the module and enter all the configurations through the integrated web-browser interface, use a PC with a network adapter (Ethernet card) and an Ethernet CAT-5E crossover cable – refer to the PROGRAMMING INSTRUCTIONS – SIG7710 WEB MANAGEMENT PROCEDURE).



## 5.1 DEFAULT PARAMETERS

The SIG7710 module can be restored to the original factory settings (default parameters). To set these parameters, refer to the TPE GENERAL MENU (HEADEND SETUP --> FACTORY SETUP --> SIG7710).


## 5.2 INITIAL PROGRAMMING THROUGH THE TPE






Connect the universal TPE programmer to the interconnection module of the sub-rack. The TPE

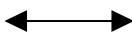



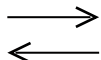








1. switches on automatically,
2. carries out the headend scanning,
3. the modules contained in the headend are recognized automatically.

Continue with the headend navigation and select the position occupied by the SIG7710 module (refer to the HEADEND SETUP AND KTP EMULATION MENU).

**NOTE:** the menu language can be changed. To modify this setting, refer to the **GENERAL MENU OF THE TPE (TPE SETUP --> LANGUAGE)**. Moreover, it is essential to verify that the set timeout is equal to 30. To verify this setting, refer to the **TPE GENERAL MENU (TPE SETUP --> TIMEOUT COM)**.

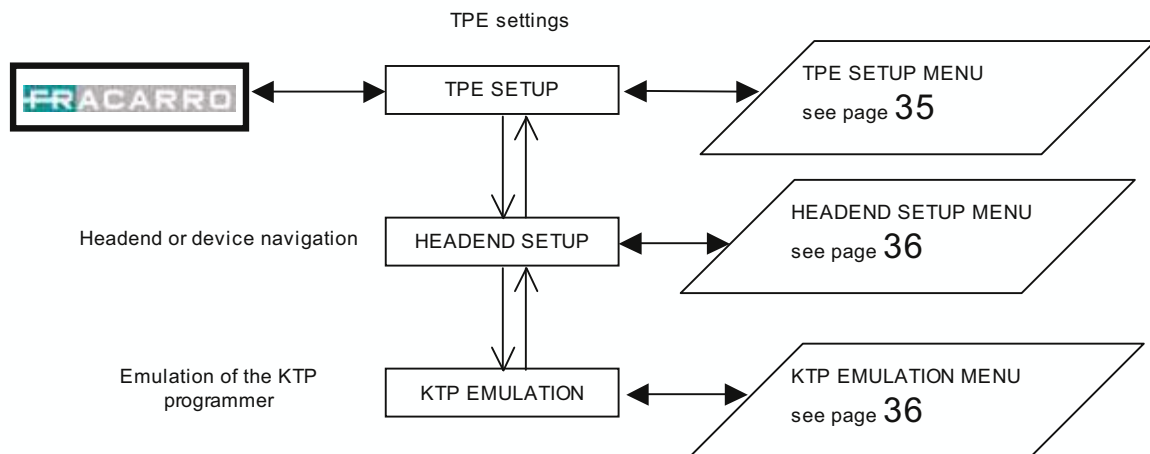
**IMPORTANT:** Press the  key of the TPE to save the set parameters. If the key is not pressed within 5 minutes from the last modification, the set data will be lost and the previous data will be restored.

TPE keys	Key Function
	To confirm an entered value or to select a menu
	To cancel an entered value or exit a menu
	To scroll through menu items
	To enter values
	To save the modifications

Graphic indications of the menu diagrams	Meaning
	Select the menu by using  or  keys and exit with the  key
	Scroll the menu to the right  or to the left 
	Scroll the menu upwards  or downwards 
	Scroll the value to the right  or to the left 

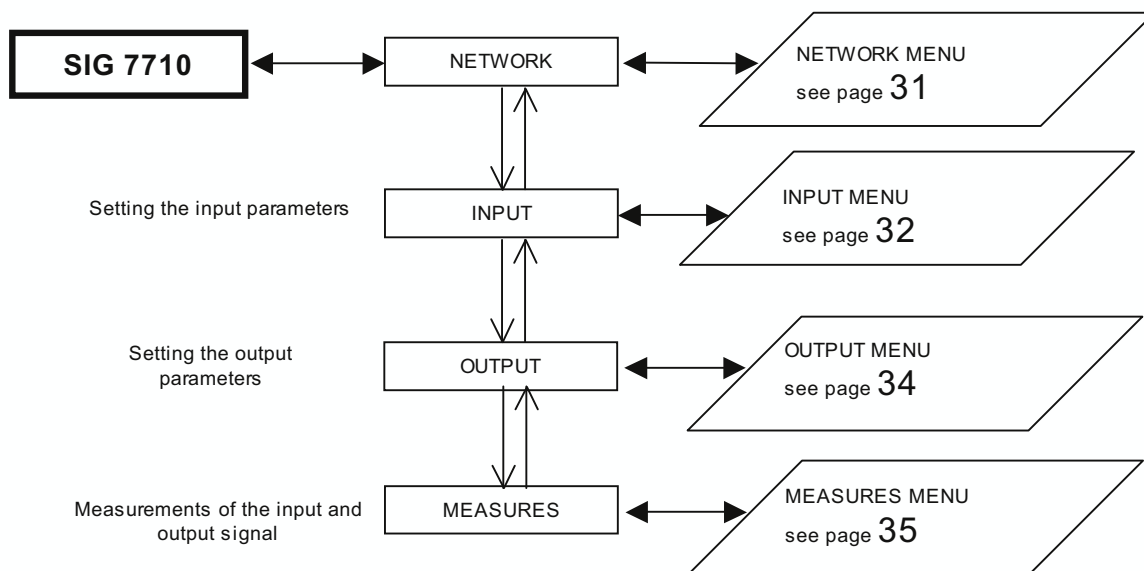


## 5.2.1 TPE GENERAL MENU



Confirm the settings by pressing the ✓ key; save the settings by pressing the S key after the modules programming.

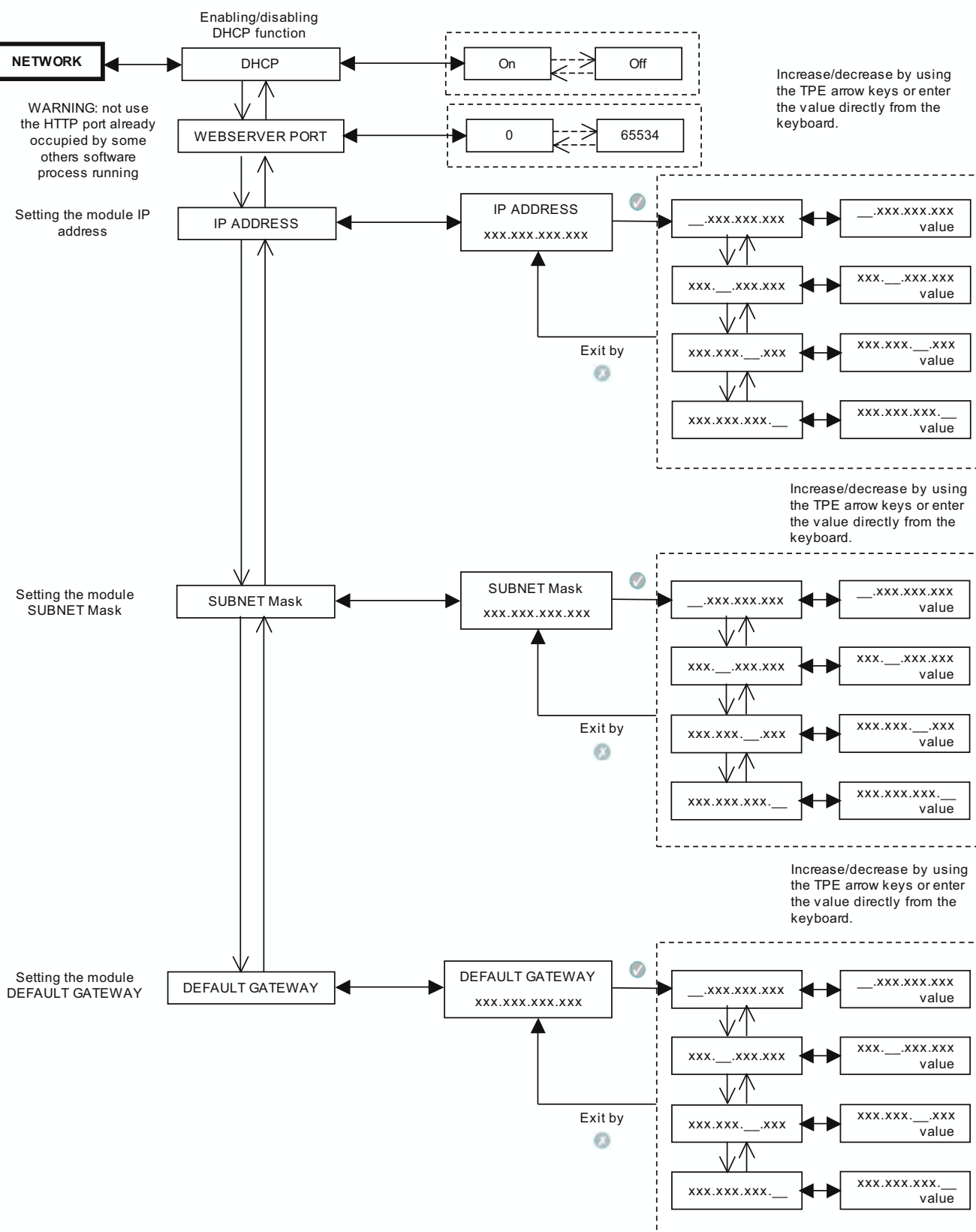
## 5.2.2 SIG7710 GENERAL MENU



Confirm the settings by pressing the ✓ key; save the settings by pressing the S key after the modules programming.

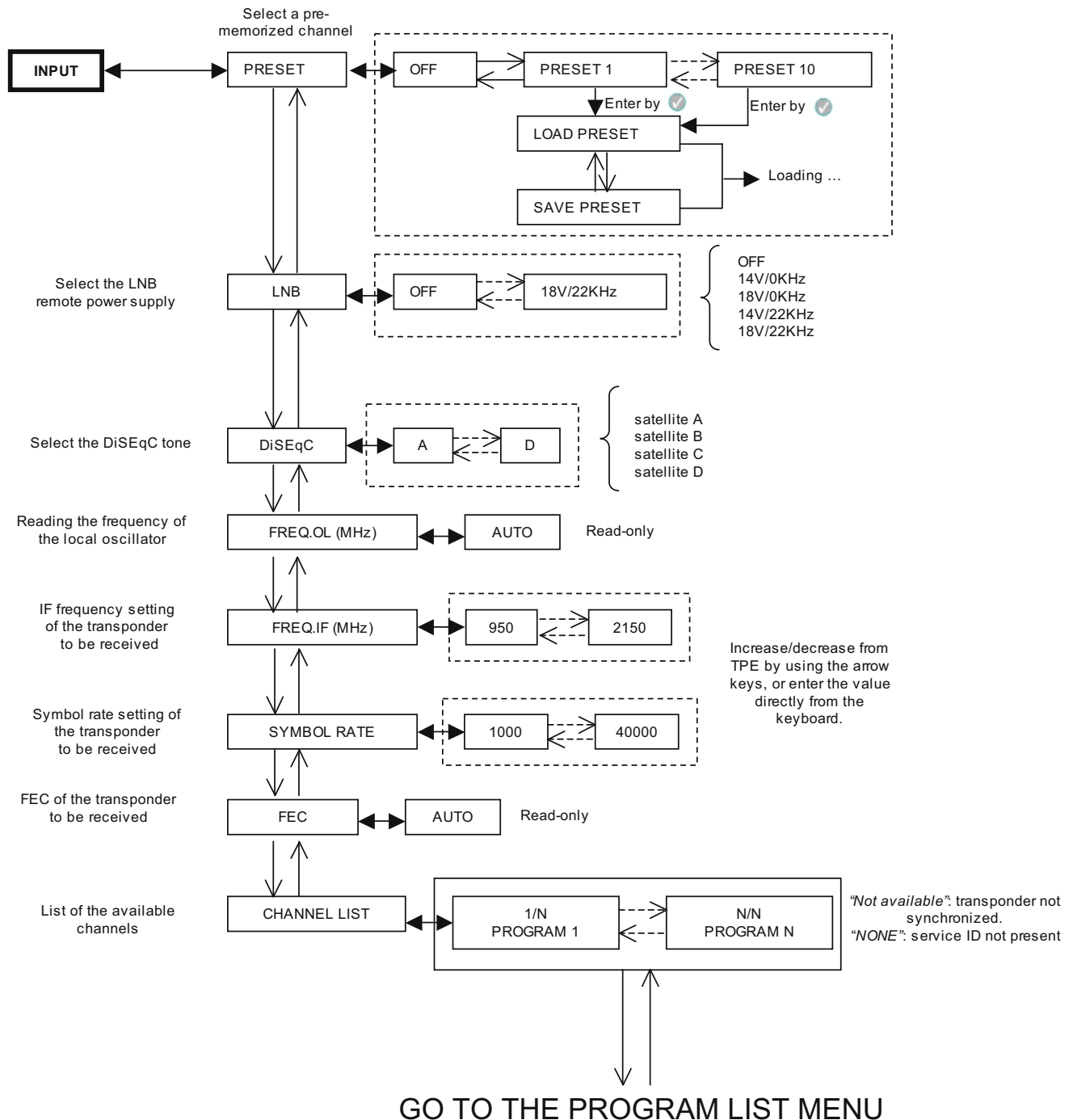


## 5.2.3 NETWORK MENU



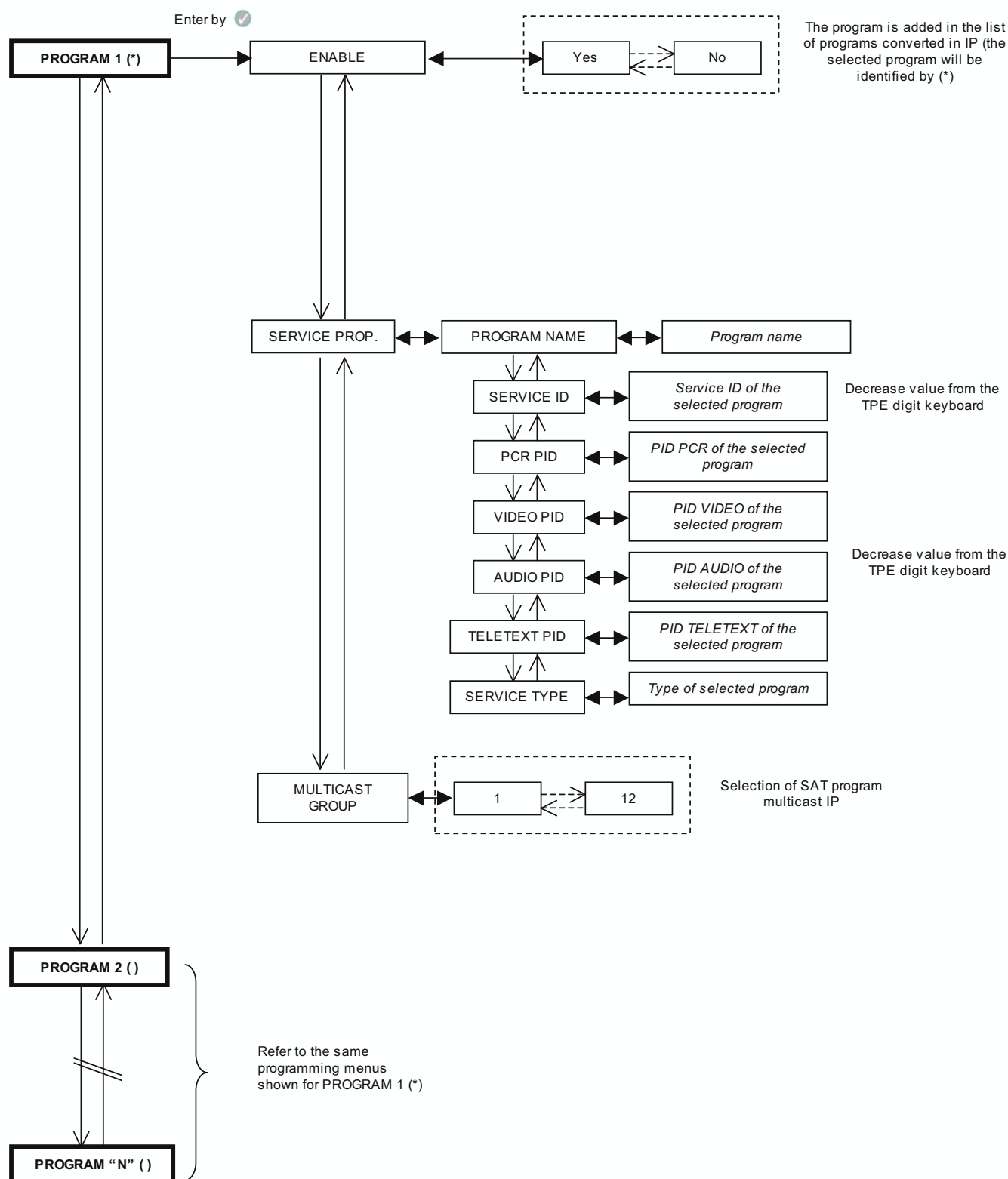
Confirm the settings by pressing the ✓ key; save the settings by pressing the S key after the modules programming.

## 5.2.4 INPUT MENU



Confirm the settings by pressing the ✓ key; save the settings by pressing the S key after the modules programming.

### 5.2.5 PROGRAM LIST MENU

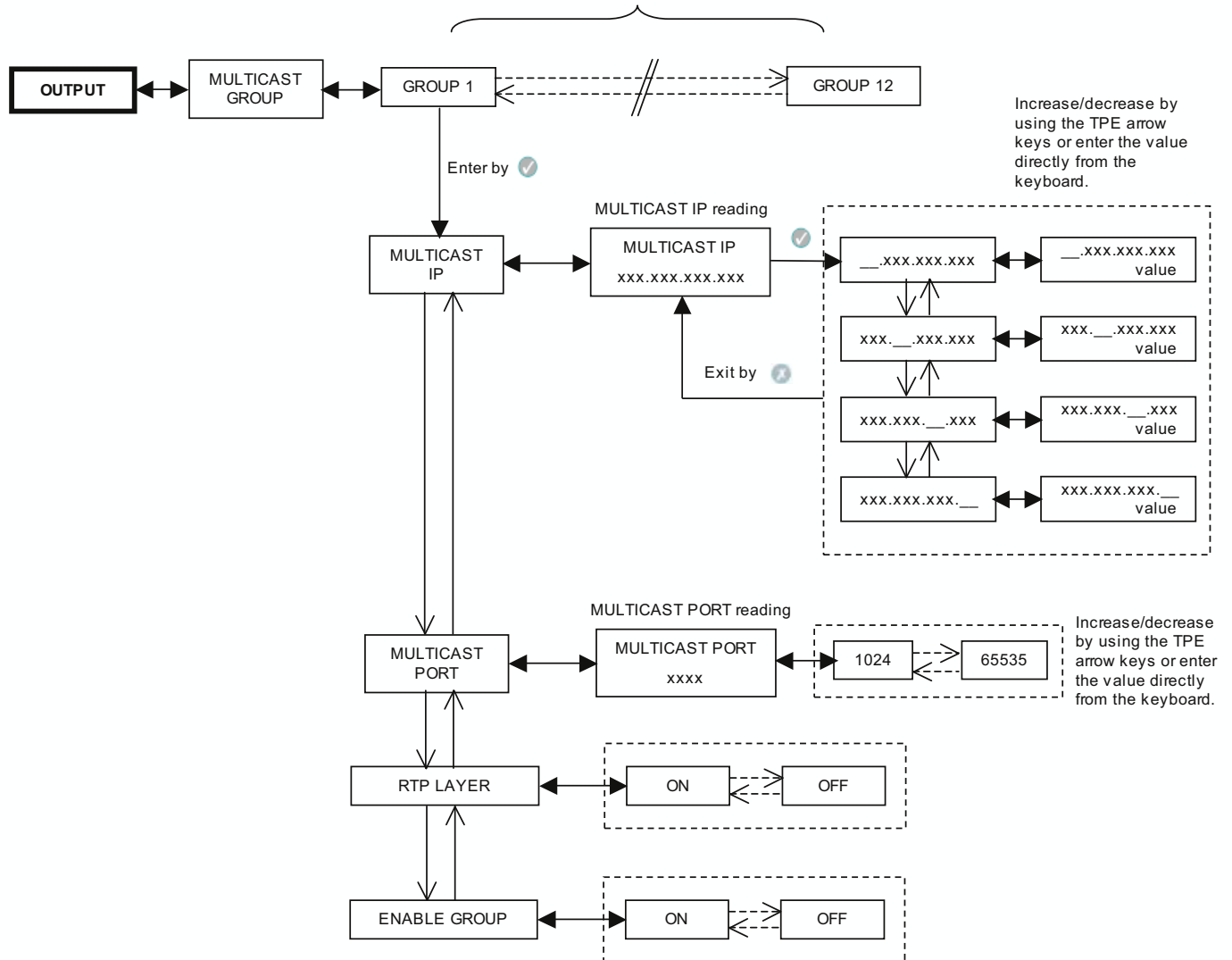


Confirm the settings by pressing the ✓ key; save the settings by pressing the S key after the modules programming.

## 5.2.6 OUTPUT MENU

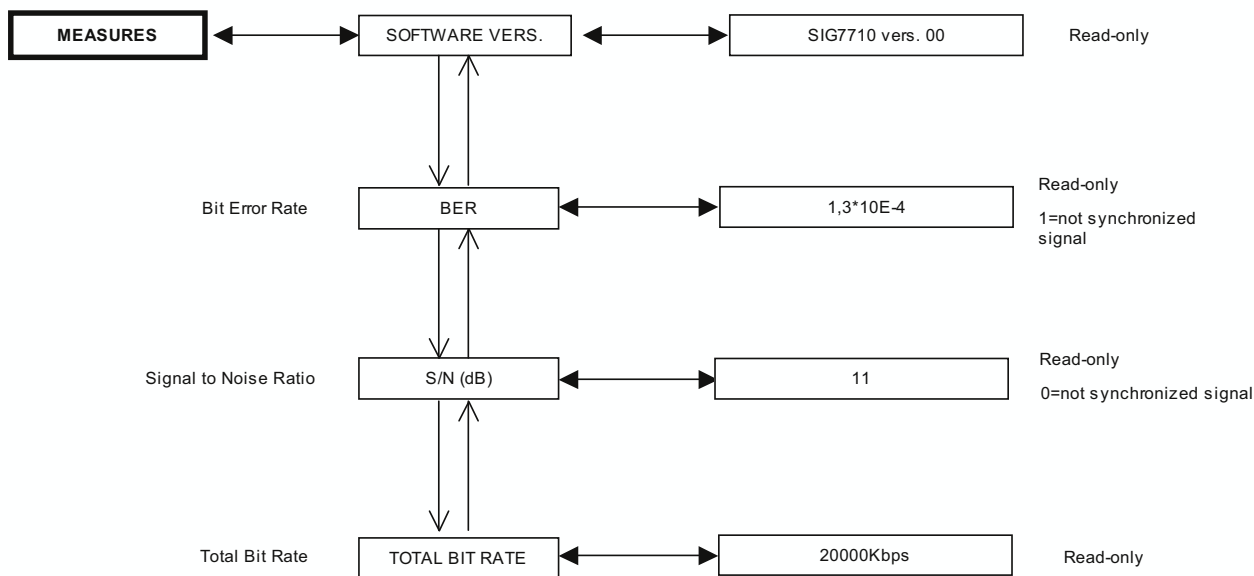
Refer to the same programming menus shown for GROUP 1 setting

(The maximum MULTICAST GROUP available are 12)

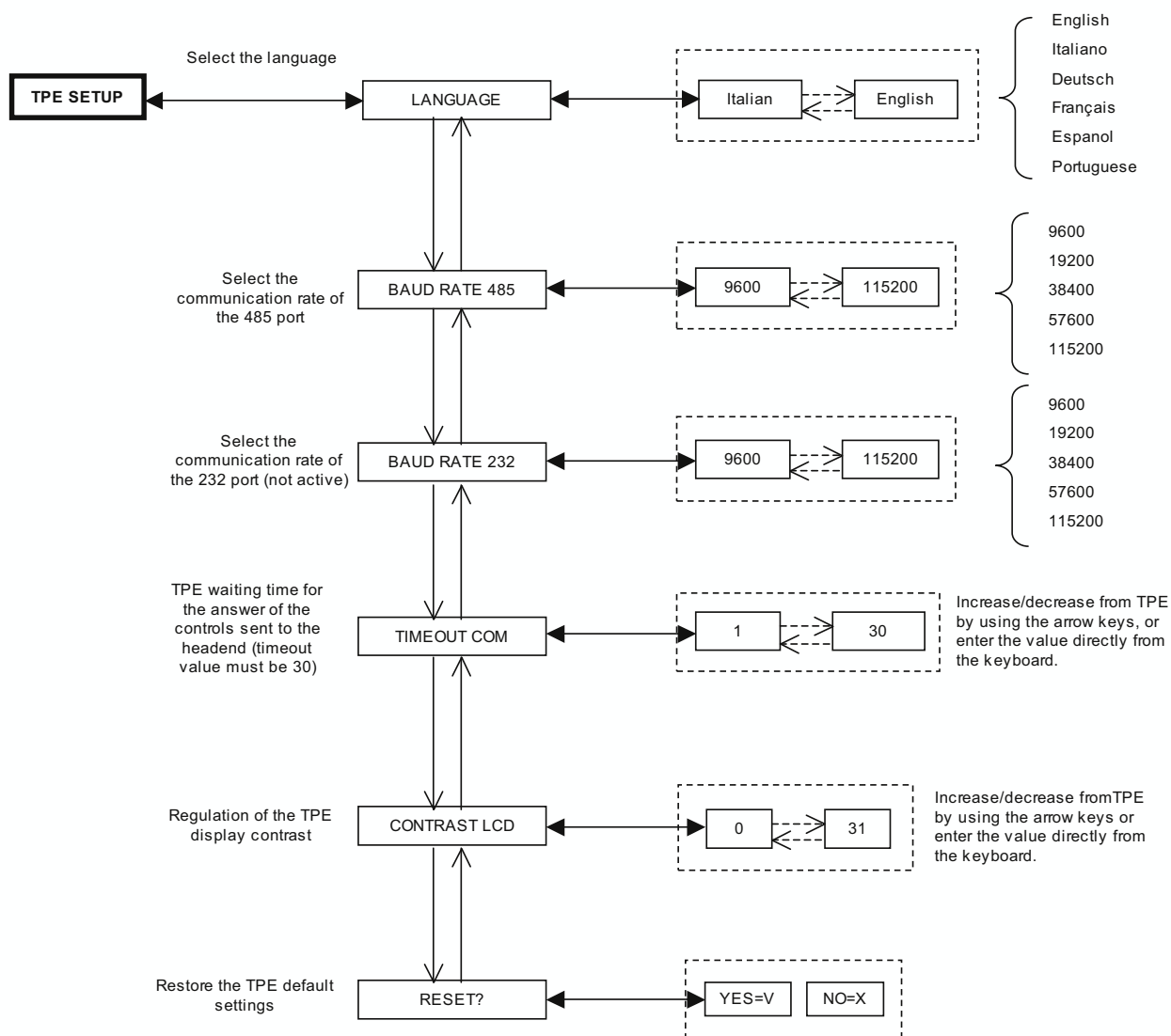


Confirm the settings by pressing the ✓ key; save the settings by pressing the S key after the modules programming.

## 5.2.7 MEASUREMENT MENU



## 5.2.8 TPE SETUP MENU



Confirm the settings by pressing the ✓ key; save the settings by pressing the S key after the modules programming.

# ENGLISH



# ENGLISH

## 5.3 SIG7710 WEB MANAGEMENT PROCEDURE

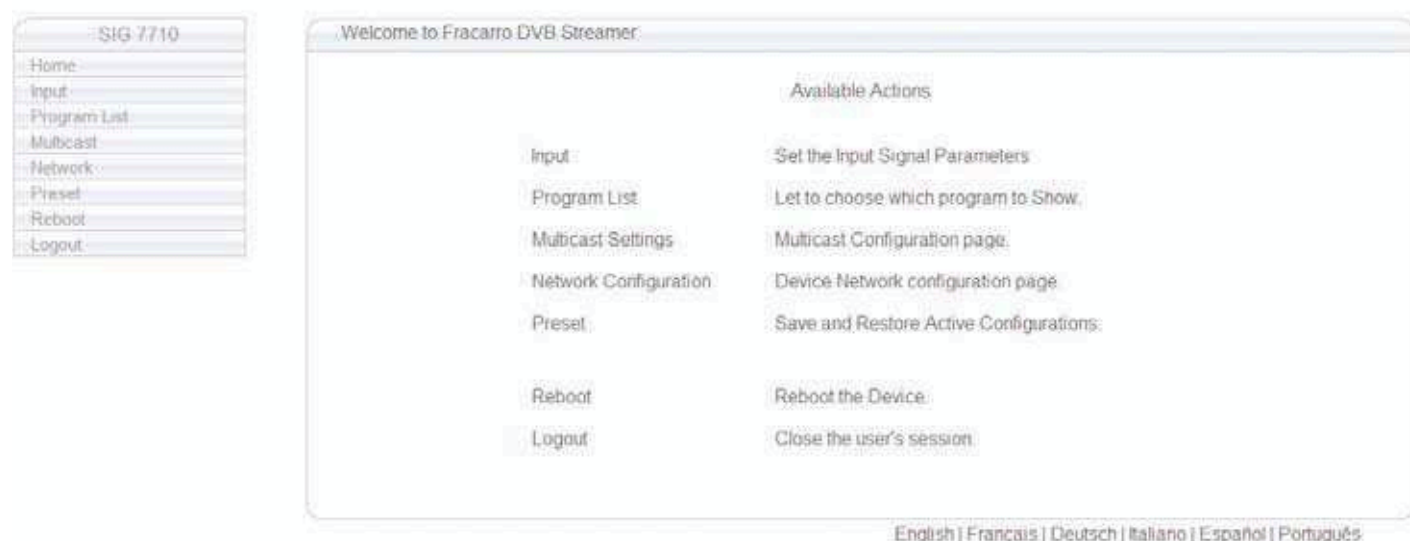
After the preliminary programming by the TPE, the advanced programming will be carried out through the means of the integrated SIG7710 WEB MANAGEMENT interface. **(NOTE: WEB interface could vary depending on the Firmware version loaded in the module).**

The procedure is as follows:

1. From the properties of the PC local network card, modify the IP address, setting a new address belonging to the same sub-network of the SIG7710 module address set. For example:
  - a. Parameter set in the streamer
    - i. IP: 192.168.1.1
    - ii. SUBNET MASK: 255.255.255.0
  - b. Parameters to be set in the properties of the network card
    - i. IP: 192.168.1.2
    - ii. SUBNET MASK: 255.255.255.0
2. Connect the PC to the module by means of a cross RJ-45 cable of CAT-5E;
3. Open the Internet browser (Recommended Browser Internet Explorer);
4. Enter the IP associated to the SIG7710 in the address bar; the following HOME PAGE is displayed. Select the language for the WEB Interface (English, Français, Deutsch, Italiano, Español, Português).

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From this menu, the following options can be selected:

- HOME --> Initial page of the integrated WEB configuration device;
- INPUT --> Input parameters setting and measurement (frequency of the transponder, SAT polarity selection, value of the Symbol rate, C/N and BER values reading, etc.);
- PROGRAM LIST --> Display menu and setting menu for SAT programs sent to the network (program list, definition of IP multicast groups, etc);
- MULTICAST --> Setting of the MULTICAST groups;
- NETWORK --> Setting of the module IP parameters;
- PRESET --> Factory SAT programs settings;
- REBOOT --> SIG7710 module restarting (the operation lasts about 15 seconds; during the restart operations, all the LEDs on the front panel are off).
- LOGOUT --> Command to exit the WEB Interface management interface.



5. Enter the NETWORK menu to set/change the IP address, the SUBNET MASK, the WEB SERVER Port and the DEFAULT GATEWAY previously associated to the streamer (SIG7710). From the module, it is possible to enable or disable the DHCP function (automatic assignment of the IP address from the network). By default, this option is disabled.

**WARNING:** not use the HTTP port already occupied by some others software process running.

**NOTE – For SIG7710 settings it will be necessary to login once by using Username and Password (default setting -->**

**Username --> admin,  
Password --> stream\_77**

After setting all the parameters, confirm them with the SAVE command. Reset an IP address belonging to the same sub-network in the network card of the local PC that is used for programming.

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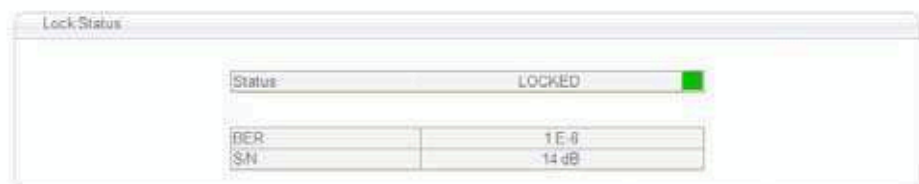
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Network Settings	
DHCP	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
Network IP	10.3.1.50
Netmask	255.255.0.0
Gateway	10.3.1.254
Web Server Port	80
Save	

6. Enter the INPUT menu for the settings relevant to the satellite transponder selections **(to modify the settings for the first time, it is necessary for the user to carry out the authentication by entering**

**Username --> admin,  
Password --> stream\_77**

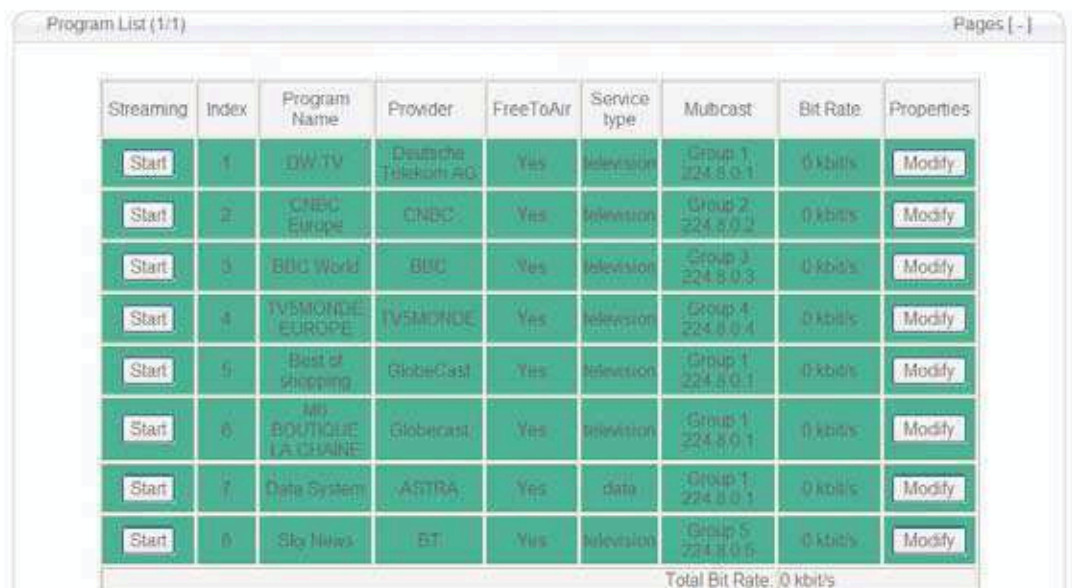
**NOTE:** from this menu, all the parameters relevant to the selection of the satellite transponder can be set. In the same picture is present the Status of the Tuner (locked/unlocked) and are displayed BER and S/N measures.



From this menu, the following options can be selected:

- FREQUENCY IF --> 1.a IF frequency setting of the chosen transponder;
- LNB --> Selection of the polarity/band satellite parameters;
- DiSEqC --> Selection of the orbital position;
- Symbol Rate --> Setting the Symbol Rate of the chosen transponder;

After setting all parameters, confirm them with the SAVE control. After about 10 seconds from the PROGRAM LIST menu, it is possible to display all the programs contained in the selected transponder.



- Enter the MULTICAST menu to define and set all parameters relevant to the MULTICAST groups. After setting the parameters, confirm them with the SAVE control.



Multicast Settings

Group	Multicast IP	Multicast Port	RTP Layer	Enable
1	224.8.0.1	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input checked="" type="checkbox"/>
2	224.8.0.2	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input checked="" type="checkbox"/>
3	224.8.0.3	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input checked="" type="checkbox"/>
4	224.8.0.4	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input checked="" type="checkbox"/>
5	224.8.0.5	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input checked="" type="checkbox"/>
6	224.8.0.6	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input type="checkbox"/>
7	224.8.0.7	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input type="checkbox"/>
8	224.8.0.8	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input type="checkbox"/>
9	224.8.0.9	2150	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	<input type="checkbox"/>

From this menu, the following options can be selected:

Multicast IP --> IP Multicast address settings;

Multicast Port --> setting the port to be used for Multicasting, WARNING: if the RTP option is enabled port Multicast can only assume equal value between 1024 and 65534. If RTP is disabled if the port Multicast can take any value between 1024 and 65534.

RTP Layer --> enabling/disabling the Real Time Protocol used in the distribution of the Audio/Video contents on IP (disable for default);

Enable --> Enabling/disabling the Multicast group;

WARNING: the IP addresses selected for multicasting must be chosen within the 224.0.1.1 --> 239.255.255.255 range. To set addresses and Multicast ports correctly, see the **RFC regulations and the network administrator** where the SIG7710 module will be inserted.

8. Re-enter the PROGRAM LIST menu to “send” the video/audio program to the chosen multicast group according to the following indications:



Program List (1/1)

Streaming	Index	Program Name	Provider	FreeToAir	Service type	Multicast	Bit Rate	Properties
<input type="button" value="Stop"/>	1	DW-TV	Deutsche Telekom AG	Yes	television	Group 1 224.8.0.1	3599 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Stop"/>	2	CNBC Europe	CNBC	Yes	television	Group 2 224.8.0.2	3356 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Stop"/>	3	BBC World	BBC	Yes	television	Group 3 224.8.0.3	4168 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Stop"/>	4	TV5MONDE EUROPE	TV5MONDE	Yes	television	Group 4 224.8.0.4	3360 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Start"/>	5	Best of shopping	GlobeCast	Yes	television	Group 1 224.8.0.1	0 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Start"/>	6	LES BOUTIQUE LA CHAÎNE	GlobeCast	Yes	television	Group 1 224.8.0.1	0 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Start"/>	7	Data System	ASTRA	Yes	data	Group 1 224.8.0.1	0 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Stop"/>	8	Sky News	BT	Yes	television	Group 5 224.8.0.5	3652 kbit/s	<input type="button" value="Modify"/>

Total Bit Rate: 18337 kbit/s

- From the “Properties” column, select the “Modify” control to associate the program to the chosen Multicast group (by default, all programs are associated to the same Multicast group – Group 1); after setting all parameters, confirm them with the SAVE control.

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**Program Properties**

Program Name	BBC World
Channel Type	FTA
Service ID	10050
PCR PID	163
Video PID	163
Teletext PID	41

Choose Multicast Group: **Group 3 (224.8.0.3)**

Choose PID Audio: **Group 3 (224.8.0.3)**

Save

- Repeat the operation for each program to be sent to the network, making sure to associate a different multicast group for each program;
- To activate the program in Multicasting transmission, select the “send” control (the program status will turn from “send” into “stop” and the bit/rate associated to the program will change from 0Kbit/s to the typical bit/rate value associated to the program – see the following image):

**IMPORTANT:** for the proper functioning of the module is required not to exceed the 20Mbit/s maximum through output for each SIG7710 module (refer to the MEASURE -> TOTAL BIT RATE menù on the TPE or WEB MANAGEMENT -> PROGRAM LIST ->TOTAL BIT RATE on the WEB interface menù).

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**Program List (1/1)**

Streaming	Index	Program Name	Provider	FreeToAir	Service type	Multicast	Bit Rate	Properties
<input type="button" value="Stop"/>	1	DW-TV	Deutsche Telekom AG	Yes	television	Group 1 224.8.0.1	3599 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Stop"/>	2	CNBC Europe	CNBC	Yes	television	Group 2 224.8.0.2	3358 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Stop"/>	3	BBC World	BBC	Yes	television	Group 3 224.8.0.3	4168 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Stop"/>	4	TV5MONDE EUROPE	TV5MONDE	Yes	television	Group 4 224.8.0.4	3360 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Start"/>	5	Best of shopping	GlobeCast	Yes	television	Group 1 224.8.0.1	0 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Start"/>	6	MS BOUTIQUE LA CHAÎNE	GlobeCast	Yes	television	Group 1 224.8.0.1	0 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Start"/>	7	Data System	ASTRA	Yes	data	Group 1 224.8.0.1	0 kbit/s	<input type="button" value="Modify"/>
<input type="button" value="Stop"/>	8	Sky News	BT	Yes	television	Group 5 224.8.0.5	3852 kbit/s	<input type="button" value="Modify"/>

Total Bit Rate: 18337 kbit/s



- d. Repeat the operation for each program that you want to activate on the network.
9. Repeat all the programming operations for all the SIG7710 modules that will make up the headend.  
After programming, all streamers can be connected to the main network (refer to the following CONNECTION OF THE SIG7710 MODULE TO THE LOCAL NETWORK paragraph).

**NOTE: Presets are available for easy and quick SIG7710 settings (see follow menù).**

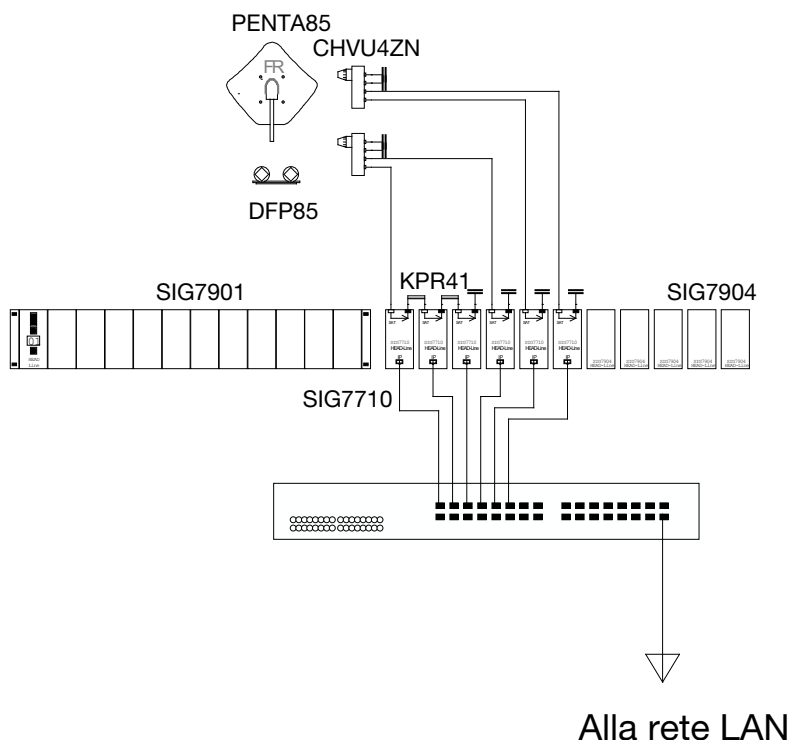
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## 6. CONNECTION OF THE SIG7710 MODULE TO THE LOCAL NETWORK

After programming, the module can be connected to the local LAN network by the CAT-5E patch cord.



**IMPORTANT:** the installation must be prepared and scaled to support a flow rate equal to at least 100Mbit/s; moreover, so as not to jam the available traffic, all the active devices that will make up the network will have to be able to support **MULTICASTING** features. This verification will be carried out by the administrator of the network where the encoder will be installed.

The following network devices has been verified and correctly manage the IP multicast traffic:

- HP 28xx Series switches;
- 3COM switch 4400 Superstack ® 3

(Note: the list above could vary depending on the hardware or software versions of network devices used. Please, for further information refers to the producer user's manual or to the support web site section).

It is possible to enter the module from any PC connected to the network by opening the browser (Internet Explorer or Mozilla Firefox) with the IP address that was set initially.

## 6.1 SIG7710 REMOTE WEB MANAGEMENT

**WARNING:** To be able to manage the SIG7710 streamer from a remote location (via Internet), you must know exactly the structure of the network which is inserted. Any devices such as network switch, fire-wall and proxy servers (hardware or software), configurations or rules addressing and routing tables could prevent the proper management from the remote location.

**These settings will be carried out by the administrator of the network where the encoder will be installed.**

It is possible to manage via-WEB all the SIG7710 included in the headend:

- to verify the proper functioning;
- to carry out the reprogramming remotely.

Such operations are possible only after the module configurations as indicated in previous chapters and after the correct insertertion into the LAN.

In order to manage remotely the SIG7710 module follows these steps:

1. create the proper re-addressing and the appropriate rules NAT / PAT in the router for each module SIG7710 you need to manage from the WEB;
2. through Internet browser (eg. Internet Explorer, Mozilla Firefox, etc.) digit on the address bar the public IP static address associated to the router followed by the port number associated with the module to manage. **NOTE: If the IP address of the router is dynamic, it can be combined with a dynamic DNS authority to a host of service (for example <http://www.dyndns.com/>).**
3. after the SIG7710's login procedure carry out the verification or the new settings.

**IMPORTANT:** For the security reasons (cybersecurity) all precautions for SIG7710 web remote control shall be in charge of the administrator of the network (eg. Restricted access PC configurations privileges, etc.).

## 7. FIRMWARE UPDATING INSTRUCTIONS

To update the firmware of the SIG7710 modules, refer to the download section of our Internet web site [www.fracarro.it](http://www.fracarro.it).

## 8. TROUBLESHOOTING

The following is a summarizing table of a few useful suggestions for the diagnosis and solution of possible module problems.

Problem	Explanation	Solution
<b>Red Led ON</b>	General malfunction	Contact FRACARRO Technical Support
<b>No output signal</b>	The antenna is disconnected	Check the connection of the antenna
<b>No Audio/Video output incapsulated signal</b>	Excedancees PID availability	Verify the selected SAT programs you want to put over IP
<b>All the streaming programs are freezing</b>	One or more ethernet switch could not properly manage the IP multicast traffic generated by several SIG7710 modules connected to the LAN	Please referring to the network administrator of the LAN
<b>LAN services blocked</b>		
<b>Slow response during the programming by using the TPE</b>	Multicast Traffic on the LAN too high	<ol style="list-style-type: none"> <li>1. Turn off one or more streaming programs;</li> <li>2. Proceed with the SIG7710 module settings;</li> <li>3. Re-enable the programs again</li> </ol>
<b>Impossible IP address changing with TPE</b>	High Multicast traffic generated by the module present on the LAN	<ol style="list-style-type: none"> <li>1. Unplug the network interconnection patch cable;</li> <li>2. make changes;</li> <li>3. Restore the link</li> </ol>
<b>The selection audio-program instead of video-program has a slight freezing picture showed in the IP Set-top-box</b>	The trouble is related to the management of buffer memory of the IP Set-top-box	Refer to the instructions of the IP Set-top-box manufacturer
<b>The program does not start streaming on the IP Set-top-box after a mains interruption</b>	The trouble is related to the managements of programs in the IP Set-top-box	Refer to the instructions of the IP Set-top-box manufacturer
<b>The “scan headend” performed with TPE does not detect any module</b>	Temporary absence of communication between the streamer and the sub-rack	<ol style="list-style-type: none"> <li>1. Unplug and re-plug the TPE;</li> <li>2. make a new “scan headend”</li> </ol>



## 9. TECHNICAL SPECIFICATIONS

CONNECTORS	
Input connectors	2 F (RF IN, RF OUT) connectors
Impedance	75Ω
IP output connector and programming	1 RJ45 connector
INPUT SIGNALS	
Input frequency	950 to 2150MHz
Input level	40 to 84dBμV
Input return loss	> 11 on single module > 9 with 2 modules
Tuning step	1 MHz
AFC	± 3MHz (a 27,5Msym/s, -60dBm, C/N=10dB)
Gain of passage of self-demixing input	0,8 - 1.7dB
Max. number of modules to demix at the input	Depends on the frequency and level of the input signal
LNB remote feeding	0/14/18V, 0/22KHz, 200mA 14V – 100mA 18V
DiSEqC	1.0
Symbol rate	1 – 40 Msym/s
FEC	Auto (1/2, 2/3, 3/4, 5/6, 7/8)
OUTPUT SIGNAL	
Output	Up to 12 digital encoded program in IP with single multicast address
MPEG information	Available MPEG2 information
Supported transmission protocols	UDP, RTP, SAP, SDP, PID filtering, PSI/SI parsing, Regeneration of PAT and PMT tables.
GENERAL	
Programming	TPE e PC
Power supply tension	220-240V ~ 50-60 Hz
Max consumption	8W
Operational temperature	-10 to +45°C
Dimensions	35 x 130 x 240mm

GB: Technical data is nominal values and refer to an operating temperature of 25° C