ANKARO®

HSAR 100
HSAR 100 CI

User's manual (English)

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NOTE: This user's guide is adapted to software version 3.0.33 dated 02/09/2010.
For future software updates, you can download the user's guide from the following website: http://www.ankaro.com/

Chapter 1. Installation.

1.1. Safety Measures

1.- Never place the device next to hot sources.

2.- Never undergo the device to temperatures that exceed its level of operation.

3.- Never expose the device to leakings nor spatterings.

4.- Never place objects that contain liquids over the device.

5.- Respect the ventilation slots of the device, do not cover them with any kind of object.

6.- The space around the device must be free of objects, in a minimum radius of 40cm.

7.- Avoid locations with possibilities of spilling liquids on the inside of the device, and with important changes of temperature.

8.- Never open the device by yourself due to electric risk. In case of problems, go always to qualified technicians

9.- Never, under no circumstances, open the device when connected to the electrical net..

10.- During the handling it is better to disconnect the device from the electrical net.

11.- Obey the electricity security rules during the assembling. Use materials that obey the current law.

12.- The connecting plug must be accessible in a fast and simple way to have a fast disconnection.

13.- Never touch the plug with wet hands. Also, disconnect always the device before handling the connections.

14.- Never put any heavy object over the device, since it could get damaged.

15.- If the device is going to remain some time without use, it is recommendable to disconnect it from the electrical net.

16.- The repairmen and the maintenance of the device must be done by TV and radio specialised technicians

1.2. Box content

| User's Guide | Link – Input Tunner F male – F male | Link – Output modulator F male – F male | DC Cable | Cable 12 cm PIN to PIN RJ45 – RJ45 |

Depending of model selected, the box will has one of these equipments:

HSAR 100   HSAR 100 CI

1.3. Description and connections

HSAR 100 module is used for the reception of free channels and HSAR 100 CI module is used for free channels as well as for codified channels. In both cases, the received channels must follow the DVB-S rule.

Each module allows the reception in QPSK, and the following modulation in PAL/SECAM of a TV or Radio channel.

Main feature of this equipment is its modulator in Vestigial Side Band (or VSB). This modulation can be used to distribute adjacent channels in one distribution without any intermodulation problem.

Each module has one Loop connector to cascade several modules at input and a Mix connector to do same in output channels.The output channel is selectable between C2 and C69.

All the parameters are programmed through HPR 100, and they are monitored in the display of the programmer or in the A/V output in the device.

HSAR 100 CI has a Common Interface slot.

HSAR 100 / HSAR 100 CI
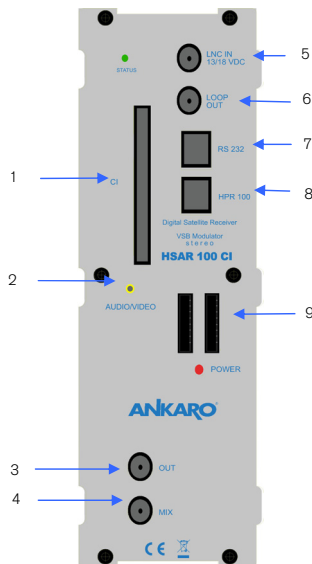
1   CI: Common Interface .*
2   Conector A/V: Through this connector and the A/V cable provided with HPS 100, it is possible to visualize the A/V signal provided by the module.
3   OUT: This connector supplies the modulated channel according to the selected standard in the module and mixes it with all the signals that it receives throught the MIX connector
4   MIX: Input of mixing of the module.
5   LNC IN: To connect to the LNC or to the LOOP OUT output of the previous module
6   LOOP OUT: To connect to the LNC IN input of the next module.
7   RS 232: Ethernet connector to cascade modules with the telecontrol unit through the RJ45/RJ45 cable provided.
8   HPR 100: Ethernet connector to make the programming with the programmer.
9   DC connectors: It has two connectors for input/output.

*Note: Only for HSAR 100 CI model

Programming

HSAR 100 has two ethernet connectors. In order to program a module we have to connect the programmer to the "HPR 100" connector.

Next, we will proceed to recognize the module and to show the main menu. The firmware of the module as well as the different submenus is shown in this menu.
We have to use the "Up" and "Down" buttons of the keyboard in order to move to the different options, and to get into the submenus we have to press "OK" button.

```
     HSAR 100 VSB CI

>Manual<     Tv-Mode
 Auto        V-3.0.33
```

MANUAL

Inside the "manual" menu there are the configuring options of the transponder we want to tune in:

```
      HSAR 100
>TV SYSTEM:PAL B/G <
   Video Level:    1
   Picture:     AUTO
```

In an external monitor, the menu is shown as follows:

General parameters of module programmation.

It provides information about the firmware version of the module.

Programming of the transponder parameter.

This window gives you information about function of OSD selected. How to programm it or which are the options in that moment.

Allows acces to special firmware functions as Updates with newer versions or Reset function.

List of tunned channels and PID's information, allow select channel to view, from TV or Radio lists.

In order to move around the different options we have to use the "Up" and "Down" buttons of the keyboard.
With the buttons "Left" and "Right" we can change the value in most of the options.
To return to the previous menu, press " Cancel" button.
If we monitor the menu of the module through A/V connector, we will see the instructions in the screen all the time.

Options:
- TV System: Format of TV signal. Options: PAL B/G, PAL I, PAL D/K, SECAM
- Video level: Level of the video carrier in A/V output. Options: -8 a 8.
- Picture: Screen format. Options: AUTO, 4:3 Letter Box, 4:3 Pan & Scan, 16:9 Letter Box.
- CI CAS: (*Only available in HSAR 100 CI model). It configures the conditional access system. By pressing "Left" or "Right" a new menu will be opened. After that, we can select through "OK" button or return to the previous menu with the "Cancel" key in order to configure the different options of the Conditional Access.

-RF Channel: Output channel. The configuration can be done through the channel or indicating the frequency directly. In order to insert the frequency, press the "OK" key and the cursor will be placed over the frequency. With the keys of the cursor, we can move through all the digits and change the values. Press "OK" in order to save the value. Options: C2-C69 o 47-862 MHz.
- RF Video level: Level of the video carrier in RF output. Options 8 to -8.
- RF Level: Output signal regulation. Options: 0-15.
- Antenna: Feeding/tone towards the LNC. Options: 0V, 13V, 13V+22kHz, 18V, 18V+22KHz.
- Diseqc: DiseqC Switch. Options: LNB A, LNB B, LNB C, LNB D and None.
- Frec. : Input channel frequency. In order to introduce the frequency, press the "OK" button and the cursor will be placed over the frequency. With the keys of the cursor, we can move through all the digits and change the values. Press "OK" in order to save the value.
- Symbol speed: Transponder symbol speed. In order to introduce the symbol speed, press the "OK" button and the cursor will be placed over the frequency. With the keys of the cursor, we can move through all the digits and change the values. Press "OK" in order to save the value.
- OL Freq.: Local oscillator frequency. In order to introduce the frequency, press the "OK" button and the cursor will be placed over the frequency. With the keys of the cursor, we can move through all the digits and change the values. Press "OK" in order to save the value.
- Only FTA: Free channels tuning only. Options: Yes and No.
- Channel: Selection of the channel inside the transponder. Press the "OK" button in order to get in the channel list. Select the channel with the "Up" and "Down" buttons and after press "OK". Once it is selected, press "Cancel" on order to get out of the list.
- Tv/Radio: It commutes between TV and radio channels by pressing "OK" button.
- Delete: It removes the selected channel in the channel list. Press "OK" in order to remove it. A confirmation or cancellation of the operation will be requested, press "OK" in order to confirm it or "Cancel" in order to cancel it
- Search: It searches for channels in the transponder inserted. By pressing "OK" the module will start the channel searching and it will save them automatically.
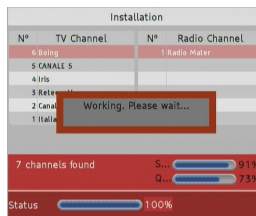

- Update: Updating of the module. By pressing "OK" three options will appear: Download updated SW (Updating of the module with the software version of the programmer) / receiving updated SW (we have to send the application, and then keep the software version of the module in the programmer) / DVBUS mode. In order to return to the previous menu press "Cancel".
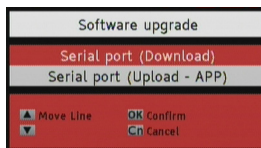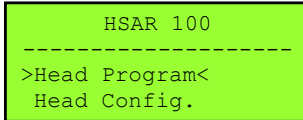

- Reset: It restores the values by default of HSAR. Press "OK" in order to reset the module. A confirmation (press OK) or cancellation (press Cancel) of the operation will be required.

AUTO

We will be able to store and recover complete configurations of the device in the option "Auto" of the main menu.

```
      HSAR 100

  Manual      TV Mode
 >Auto<
```
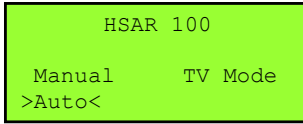
The following options can be found in the "Auto" menu:

```
      HSAR 100
 -------------------
 >Head Program<
  Head Config.
```
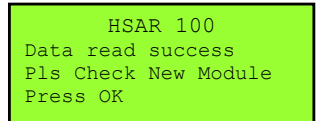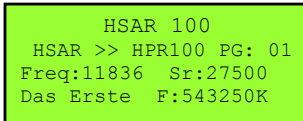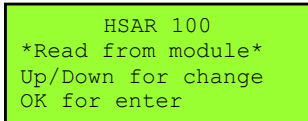
- Head program: Updating of the module with the software version of the programmer. While the device is being updated, the AUDIO/VIDEO output will not show any signal. In the screen of the programmer you will be able to see the progress bar.

```
      HSAR 100
 Head programming
 Please wait
 ████
```
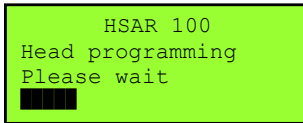
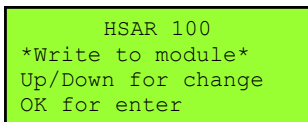Once the process is finished, please boot the device.

- Head configuration: In the case of the usual usage of a fixed configuration of channels, we can store that configuration in the memory of the programmer, so when we want to make the installation it will be enough to dump the stored configuration from the programmer to the device and this way we will achieve a better agility in the programming of the modules.

- Read from module: It allows reading the data of the module and saving it in the programmer. The steps to make a correct reading of the headend are specified below:

```
      HSAR 100
 *Read from module*
 Up/Down for change
 OK for enter
```

```
      HSAR 100
 HSAR >> HPR100 PG: 01
 Freq:11836  Sr:27500
 Das Erste  F:543250K
```

```
      HSAR 100
 Data read success
 Pls Check New Module
 Press OK
```

1. Select the option "Read from module" through Up/Down buttons. Press OK to continue

2. Select the position of "PG" memory where you wish to save the current configuration of the module.

3. A window will appear and it will let you know that the reading made has been correct

- Write to module: It allows writing the data stored in the programmer in the module. The steps to make a correct configuration of the headend are specified below:

```
      HSAR 100
 *Write to module*
 Up/Down for change
 OK for enter
```

```
      HSAR 100
 HPR100 >> HSAR PG: 01
 Freq:11836  Sr:27500
 Das Erste  F:543250K
```

```
      HSAR 100
 Data Write Success
 Pls Check New Module
 Press OK
```
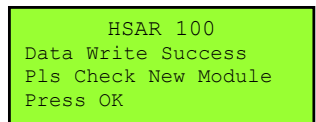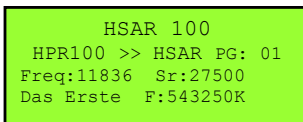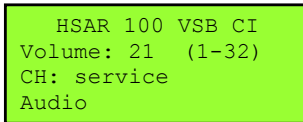
1. Select the option "Write to module" through Up/Down buttons. Press OK to continue

2. Select the position of the "PG" memory that you wish to copy in the module. Please verify that the data of the selected memory correspond to the channel that you wish to copy.

3. A window will appear and it will let you know that the configuration made has been correct

TV MODE

The different output parameters of the module can be configured in the "Tv Mode" option:

```
        HSAR 100

Manual     >TV Mode<
Auto
```
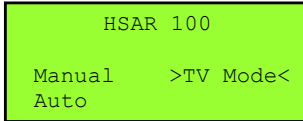
The following options can be found in the "Tv Mode" menu:

```
   HSAR 100 VSB CI
Volume: 21  (1-32)
CH: service
Audio
```

- Volume: It regulates the channel output volume. Use the "Left" and "Right" buttons.
- CH: It changes the channel. Use the "Left" and "Right" buttons.
- Audio: It selects the output audio. Press "Ok" and a new menu will appear. Select with "Up" and "Down" buttons. Confirm with "OK" button.

```
   HSAR 100 VSB CI
   *Select Audio*
       Stereo
  Up/Down to change
```
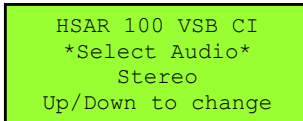
1.4. Accessories and example of installation
Example of installation
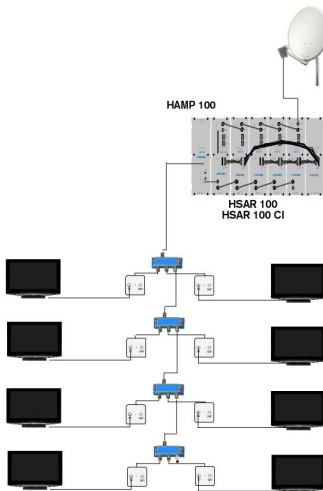
Example of an installation in a dwelling with 4 floors where there are 5 satellite channels distributed freely to all the users of the building.
The headend has 4 HSAR 100, 1HSAR 100 CI, a HPS 100 power supply and an HAMP 100 amplifier that amplifies and equalizes the signal so all users will receive an ideal signal in their outlets
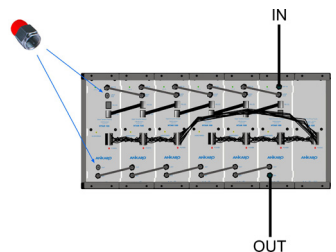
Note: In order to guarantee the right running of the different equipments of the installation, we recommend you to provide the inputs and outputs which are not used with a 75Ω load.

Accessories
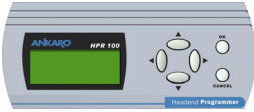
Programmer
Mod. HPR 100   Cod. 20018.11

Wide band amplifier 47-862MHz
Mod. HAMP 100   Cod. 20042.11

Mixer
Mod. HAM 100   Cod. 20012.11

Chapter 2. Technical features

Ref.	HSAR 100	HSAR 100 CI
Code	20000.11	20002.11
Input frequency margin	950-2150 MHz	950-2150 MHz
Input level	-25 a -65 dBm	-25 a -65 dBm
Input impedance	75Ω	75Ω
LNB (feeding/conmutation)	13V-18V / 0-22kHz	13V-18V / 0-22kHz
Input connector	Female F connector	Female F connector
Input LOOP losses	<1 dB	<1 dB
FEC	1/2, 2/3, 3/4, 5/6, 7/8 DVB	1/2, 2/3, 3/4, 5/6, 7/8 DVB
Modulation	QPSK	QPSK
Symbol speed	2-45 MS/s	2-45 MS/s
Transport Stream	MPEG-2 ISO/ IEC 13818	MPEG-2 ISO/ IEC 13818
Video resolution	720X576	720X576
Output connector	Female F connector	Female F connector
Output level	82 +1/-3 dBuV	82 +1/-3 dBuV
Regulation margin	15 dB	15 dB
Channels	C2-C69	C2-C69
Type of modulator	BLV / Stereo	BLV / Stereo
S/N Video Ratio	>54	>54
MIX losses	<1 dB	<1 dB
Modulation standards	B-G, D-K, L, I	B-G, D-K, L, I
Band Spurious	-60 dBc	-60 dBc
Common Interface	-	Yes, 1 Slot
Dimensions	75x265x150 mm	75x265x150 mm
Weight	1,4Kg	1,4Kg

Chapter 3.   Declaration of conformity

CONFORMITY DECLARATION

"WE , ANKARO, DECLARE THAT THE PRODUCTS
HSAR 100 AND HSAR 100 CI
ARE IN CONFORMITY WITH FOLLOWING DIRECTIVES
Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC"

If you wish a copy of the conformity declaration, please contact to the company

ANKARO®