

# SAT-40CI

## 4 ch. QPSK/AM remodulator system VSB A2

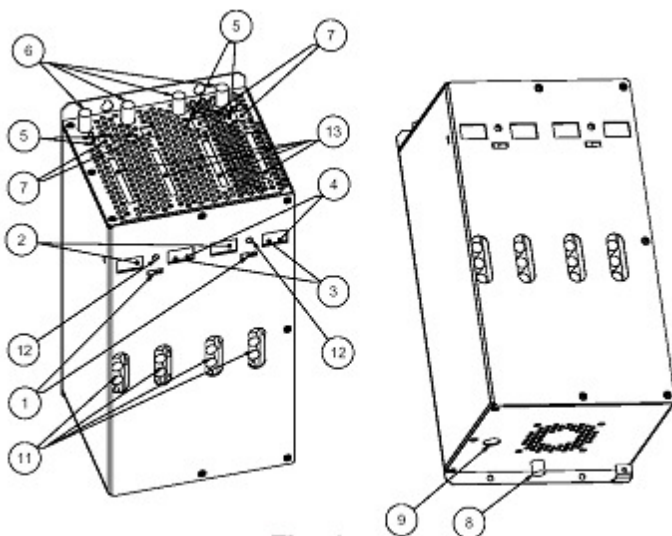
### Quick User Guide

#### 1. Purpose of use

SAT-40CI is designed for a processing four QPSK modulated satellite signals into standard CCIR channels. SAT-40CI is supplied with a A2 stereo/dual/swap dual/multistandard mono modulator, which can be used on the adjacent channels (VSB modulation) from S2 to E69.

#### 2. Installation

The connections and indications are shown in Fig 1.



**Fig. 1.**

**1. Control switch: Channel 1 (3) = left or channel 2 (4) = right. The switch must be set to middle position when programming is ready.**

**2. Channel number (CCIR) or TV standard.**

**3. Cable-TV S channel.**

**4. The signal led shows that the unit is powered or modulator set-up is activated.**

**5. Signal led indicates that receiver is locked to selected transport stream.**

**6. LNB IN**

**7. USB port is for possible software update.**

**8. RF OUT**

**9. DC IN**

**11. VIDEO/AUDIO connectors for monitoring.**

**12. IR detector.**

**13. CAM slot.**

SAT-40CI is mounted directly on the wall. Do not cover the air passage holes.

RF OUT is connected to cable network. Power supply is connected to DC connector at the bottom of unit (9). VIDEO/AUDIO connectors (11) are for monitoring.

NOTE! CA module (13) for smart card must be installed and removed only when power is OFF. Signals from LNB are fed to IF-connectors (6) at the top of unit.

NOTE! LNB supply voltage must be fed only from one receiver to each LNB output. For other receivers must be selected POWER OFF (Configuration menu/LNB control mode) or RFZ-80X splitters must be used (Fig. 2.).

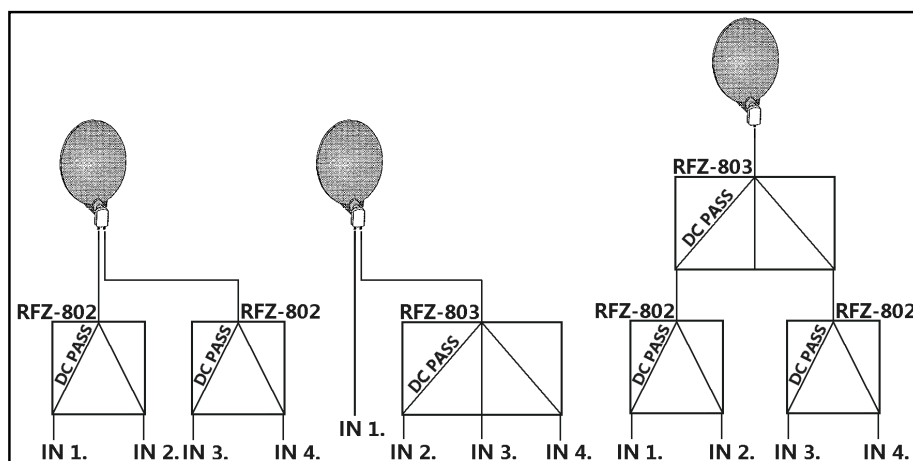


Fig 2.

### 3. Modulators set-up

The factory pre-adjusted channels are E5, E6, E7 and E8.

To control modulator first slide front panel switch to left or right position to control receiver 1 (3) or 2 (4) respectively. Press UHF key (Fig 3. no 14) on the remote. On selected output channel display a dot is lit on right lower corner. Set up selected channel using up and down arrow keys (Fig 3. no 12 or 13). A dot on the middle of the display shows S-channels. To select a channel press OK key (Fig 3. no 3).

To cancel selection, press EXIT key (Fig 3. no 6).

### 4. Channel selection

The most of programs from Astra and Hotbird satellites are saved to SAT-40CI memory places (Table 1.).

NOTE! The pre-programmed memory places are valid only for UNIVERSAL LNB.

First slide front panel switch to left or right position to control receiver 1 (3) or 2 (4) respectively.

Press MENU key (Fig 3. no 1) on the remote and select CHANNEL LIST and press OK.

You can scroll the list using up and down arrow keys (Fig 3. no 12 or 13). To scroll one page at a time, use double arrow keys (Fig 3. no 10 or 11). You can use auto repeat by keeping a key pressed.

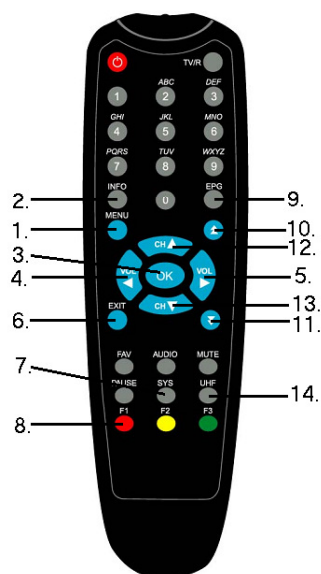
Info shows memory number, satellite indication (A=Astra, B=Hotbird) transponder frequency, band information, program name and is the channel CA\* or FTA\*.

\* CA stands for Conditional Access channel. To view a CA channel an appropriate Conditional Access Module and a viewing card will be needed.

\* FTA stands for free channel available without a Conditional Access module or a viewing card.

To confirm selection press OK key.

NOTE! WHEN PROGRAMMING IS READY, THE FRONT PANEL SWITCH MUST BE SLIDED TO CENTER POSITION.



- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. MENU</li> <li>2. INFO</li> <li>3. OK</li> <li>4. VOL &lt;</li> <li>5. VOL &gt;</li> <li>6. EXIT</li> <li>7. SYS</li> <li>8. F1</li> <li>9. EPG</li> <li>10. ^</li> <li>11. v</li> <li>12. CH ^</li> <li>13. CH v</li> <li>14. UHF</li> </ol> | <ul style="list-style-type: none"> <li>Main OSD menu</li> <li>Channel information</li> <li>Confirm selection exit from menu</li> <li>Audio volume, select left</li> <li>Audio volume, select right</li> <li>Exit from menu</li> <li>UHF + SYS = set TV standard BER</li> <li>Channel list</li> <li>Scroll channel list one page at a time</li> <li>Scroll channel list one page at a time</li> <li>Change a channel, select up</li> <li>Change a channel, select down</li> <li>UHF + ^/v = set output channel</li> </ul> |
|--|--|

Fig 3.

Memory place	Satellite	Transponder	Symbol rate	Polarisation	Program
24	Astra	11,837	27500	H	Das Erste
33	Astra	11,954	27500	H	ZDF
93	Astra	12,188	27500	H	RTL Television
96	Astra	12,188	27500	H	VOX
108	Astra	12,227	27500	H	Eurosport
109	Astra	12,227	27500	H	Euronews
321	Astra	11,538	22000	V	Russia today
327	Astra	11,568	22000	V	TVEi
331	Astra	11,568	22000	V	TV5MONDE
333	Astra	11,568	22000	V	RAI 1
340	Astra	11,597	22000	V	CNBC Europe
341	Astra	11,597	22000	V	BBC World
360	Astra	11,778	27500	V	CNN Int.
396	Astra	11,973	27500	V	MTV Germany

Table 1.

## 5. Output level adjustment

Select from main menu MODULATOR /OUTPUT LEVEL to adjust the output level. Output level is adjusted with the right/left arrows. The attenuator value 0 dB refers to minimum output level and 20 dB refer to maximum output level.

## 6. Adjustments without OSD

When not using the menu system you can adjust audio volume by pressing left and right VOL keys (Fig 3. no 4 or 5) and change channels using up and down CH keys.

To open the Channel List press EPG key (Fig 3. no 9). To see current channel info press INFO key (Fig 3. no 2).

You can also monitor satellite signal quality by pressing F1 key (Fig 3. no 8).

## 7. Technical specification

Number of channels	4
Tuners	4
Input frequency range	950 - 2150 MHz
Input level	-70 ... -25 dBm
Waveform	QPSK (SCPC, MCPC)
Symbol rate	4-45 MS/s
FEC decoder	Automatic
Transport stream	MPEG-2 ISO/IEC 13818
Teletext	Through VBI
Subtitling	DVB or teletext
CI slot	4
Output frequency range	112,25 MHz - 855,25 MHz
Modulation	AM, VSB, A2 stereo, swap dual
Transmission standard	B/G, D/K, I, L, M/N
Output level	80 - 100 dBuV
Spurious products	< 60 dBc
S/N weighted	55 dB
Data interface	4* USB 1
Input connectors	F-female 75 ohm
Output connectors	F-male 75 ohm
Power consumption	16VDC/3,5A
Dimensions	W*H*D 143mm*285mm*134mm



This symbol on the product or on its packing means that within the European Union the product must be taken to separate collection at the product-end-of life.

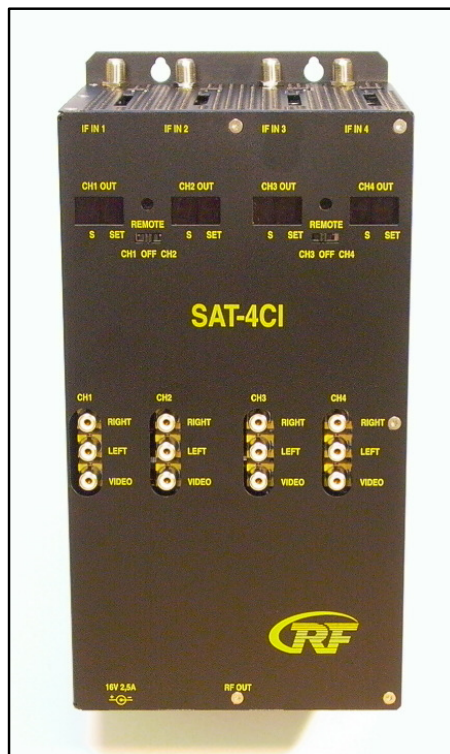
Do not dispose of these products as unsorted municipal waste.

For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your house disposal service or the shop where you purchased the product.

# SAT-4CI

## 4 ch. QPSK/AM remodulator system VSB A2

### User Manual

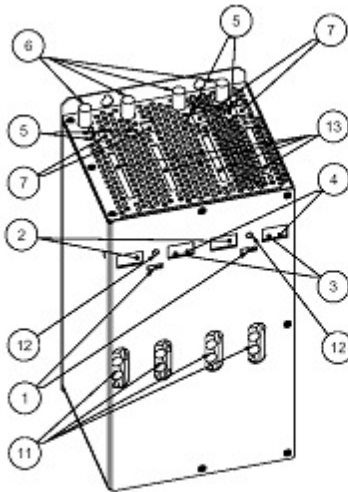


## 1. Purpose of use

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## 2. Installation

The connections and indications are shown in Fig 1.



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**1. Control switch: Channel 1 (3) = left or channel 2 (4) = right. The switch must be set to middle position when programming is ready.**

**2. Channel number (CCIR) or TV standard.**

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**6. LNB IN**

**7. USB port is for possible software update.**

**8. RF OUT**

**9. DC IN**

**11. VIDEO/AUDIO connectors for monitoring.**

**12. IR detector.**

**13. CAM slot.**

SAT-40CI is mounted directly on the wall . Do not cover the air passage holes.

Power supply is connected to DC connector at the bottom of unit (9).

RF OUT (8) is connected to cable network.

VIDEO/AUDIO connectors (11) are for monitoring the unit.

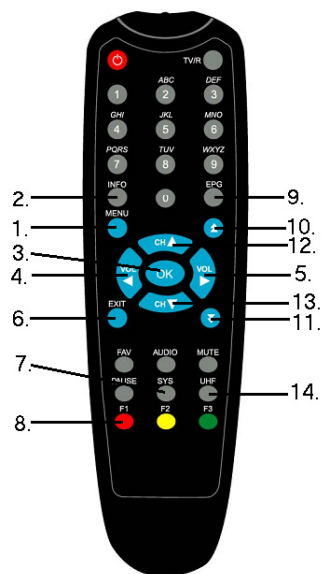
**NOTE!** CA module (13) for smart card must be installed and removed only when power is OFF. It is highly recommended to use recently updated smart card.

Signals from LNB are fed to IF-connectors (6) at the top of unit.

**NOTE!** LNB supply voltage must be fed only from one receiver to each LNB output. For other receivers must be selected POWER OFF (Configuration menu/LNB control mode) or RFZ-80X splitters must be used.

## 3. Programming

The receivers and modulators are simple to program with the remote control unit (RCU). The main functions of RCU are shown in Fig 2.



**Fig 2.**

- |  |   |
|--|---|
| <p><b>15. MENU</b><br/> <b>16. INFO</b><br/> <b>17. OK</b><br/> <b>18. VOL &lt;</b><br/> <b>19. VOL &gt;</b><br/> <b>20. EXIT</b><br/> <b>21. SYS</b><br/> <b>22. F1</b><br/> <b>23. EPG</b><br/> <b>24. ^^</b><br/> <b>25. vv</b><br/> <b>26. CH ^</b><br/> <b>27. CH v</b><br/> <b>28. UHF</b></p> | <p>Main OSD menu<br/> Channel information<br/> Confirm selection<br/> Audio volume, select left<br/> Audio volume, select right<br/> Exit from menu<br/> UHF + SYS = set TV standard<br/> BER<br/> Channel list<br/> Scroll channel list one page at a time<br/> Scroll channel list one page at a time<br/> Change a channel, select up<br/> Change a channel, select down<br/> UHF + ^/v = set output channel</p> |
|--|---|

**NOTE! When programming is ready the switch must be set to center position.**

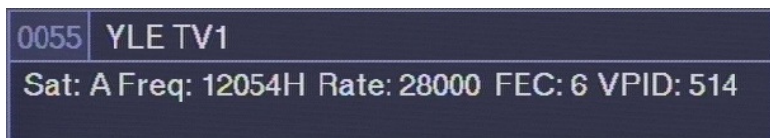
### 3.1 Power-up



At power-up this welcome screen is displayed. Receiver and user interface version numbers plus unit serial number are shown.

When the unit is powered the display lights up showing selected output channels (Fig 1. no 2 ). The factory set channels are E5, E6, E7 and E8.

The display is switched off after 3 minutes. The signal leds (Fig. 1. no 4) indicate that the unit is powered. The display lights up again by pressing any button of remote controller unit.



Next program info for channel previously selected is displayed and the channel opened, if possible. Info shows satellite number i.e. DiSEqC switch control, transponder frequency, data rate, FEC and channel video PID number. Please note that opening a channel will take longer time when a conditional access module is inserted. It is recommended to use updated smart card. If the channel list is empty, welcome screen will remain displayed.





### 3.2 First time set-up

When using the unit for the first time, you must first set the modulator output to required channel. After this you can continue set-up using on-screen menus.

To control modulator first slide front panel switch to left or right position to control receiver 1 (3) or 2 (4) respectively. Press UHF key (Fig 2. no 14) on the remote. On selected output channel display a dot is lit on right lower corner (Fig 1. no 4). This indicates that modulator set-up is activated. Test pattern and test sound are switched on.

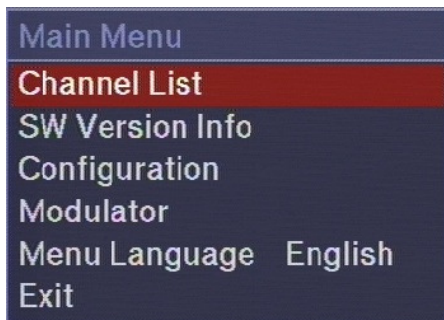
To change output channel press up or down CH keys (Fig 2. no 12 or 13) to scroll through available channels. Cable TV S-channels are indicated with a dot between digits (Fig 1. no 3). The selectable channels are S02 - S10, 5 - 12, S11 - S41 and 21 - 70 (CCIR).

To change TV standard press SYS key (Fig 2. no 7) repeatedly until required standard name (BG, I, DK, L or MN) is displayed.

To save modulator settings press OK key (Fig 2. no 3). To cancel selection, press EXIT key (Fig 2. no 6). Modulator set-up will be exited and test pattern and test sound will be switched off in both cases.

### 3.3 Set-up

To start set-up, press Menu key (Fig 2. no 1). Main Menu will be displayed.



If channels are already stored, select "Channel List" and press OK.



Sequence	Satellite	Channel Name	Status
0051	A:11823HHi	Party TV	FTA
0052	A:12054HHi	Nelonen	CA
0053	A:12054HHi	MTV3	CA
0054	A:12054HHi	TV Finland	CA
0055	A:12054HHi	YLE TV1	CA
0056	A:12054HHi	YLE TV2	CA
0057	A:12054HHi	YLE FST	CA
0058	A:12054HHi	YLE Extra	CA
0059	A:12054HHi	YLE Teema	CA

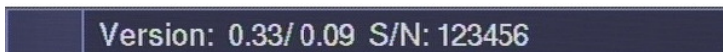
On channel list all stored channels are listed with sequence number, satellite indication (see Configuration/Menu/Add Default Channels), transponder frequency and band information. After channel program name on right column channel status is shown. "FTA" stands for free channel available without a Conditional Access module or a viewing card. "CA" stands for Conditional Access channel. To view a CA channel an appropriate Conditional Access Module and a viewing card will be needed. This information is only normative and can be missing in some cases.

You can scroll the list using up and down arrow keys (Fig 2. no 12 or 13). To scroll one page at a time, use double arrow keys (Fig 2. no 10 or 11). You can use auto repeat by keeping a key pressed.

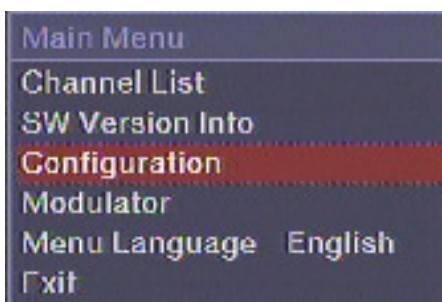
To select a channel press OK key. Menu will be closed and channel opened, if possible. To exit without selecting any channel press EXIT key.



In main menu, select “SW Version Info” and press OK to display receiver and user interface version numbers plus unit serial number info.



Most of the system set-up is done in Configuration Menu. Select “Configuration” and press OK to enter.



You can select the audio language in two ways. Firstly you can select from preset languages selecting “Audio Language” and using left and right arrow keys ( Fig 2. no 4 or 5) to select the language name. Secondly if your language is not among the preset languages you can freely write any 3-character language name. Use double arrow keys (Fig 2. no 10 or 11) to select character position, which will be underlined, and select needed character using up and down keys (Fig 2. no 12 or 13). Use double arrow keys to exit edit with no character underlined.



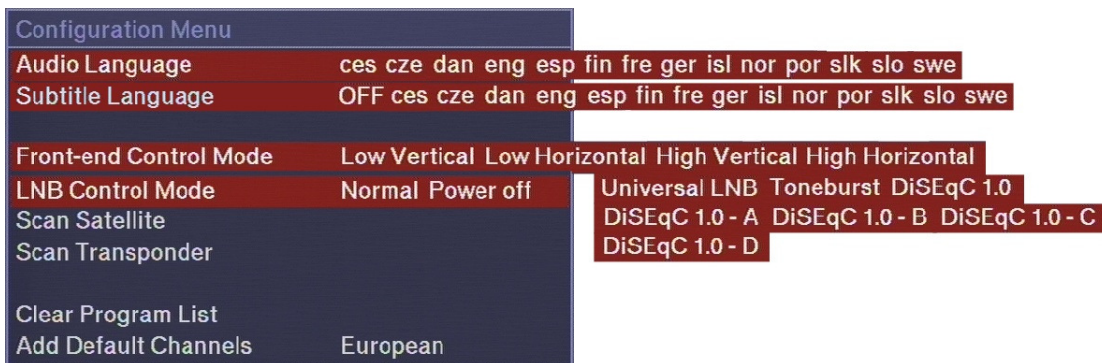
You can also select subtitle language in a similar manner or you can select OFF to turn off subtitling.



Front-end control can be adjusted by selecting “Front-end Control Mode” and using left and right arrow keys to select appropriate mode. This mode is used in “Scan Satellite” task as well as in normal operation.

In “LNB Control Mode” you can select normal or fixed control using left and right arrow keys.

All selectable options in Configuration Menu are shown below.



To scan satellites select “Scan Satellite” and press OK key.



If any of the one band front-end control modes is selected, only that band will be scanned. For low band, frequencies from 10700 to 11700 MHz will be scanned. For high band, frequencies from 11700 to 12700 will be scanned. If “LNB Control Mode” is set to “Normal”, appropriate control voltage and 22 kHz control is output to LNB. If “Power Off” is selected there is no voltage at output. This is useful when splitters are used to feed LNB signal to several receivers.

When “Universal LNB” is selected then all four bands of a universal LNB will be scanned automatically using voltage and 22 kHz control. When “Toneburst” is selected then two universal LNBS will be scanned using toneburst switch control. When “DiSEqC 1.0” is selected then four universal LNBS will be scanned using DiSEqC switch control.

You can monitor the search at lower part of the display.

As satellite search will take considerable amount of time, you can to scan only one transponder if you know the parameters. To do this, select “Scan Transponder” and press OK key.

Scan Transponder	
Frequency	12054
Symbol Rate	28000
FEC	Auto
Polarization	Horizontal
Sat ID	0
Low LNB Frequency	9750
High LNB Frequency	10600
Scan	

You can adjust transponder frequency using numeric keys, left and right keys or double arrow keys.

You can select Symbol Rate from preset values using left and right arrow keys or select “Auto” to try all these preset values. You can also enter any symbol rate using numeric keys or double arrow keys.

FEC can be set to “Auto” or any fixed value using left and right keys. Polarization is also selected using left and right keys. Sat ID will be used in channel information and to control DiSEqC switch.

When using non-universal LNBS, you can adjust the local oscillator frequency values accordingly.

All selectable options in Scan Transponder Menu are shown below.

Scan Transponder	
Frequency	12054
Symbol Rate	Auto 22000 24500 25540 26000 27500 27800 28000
FEC	Auto 1/2 2/3 3/4 5/6 7/8
Polarization	Horizontal Vertical
Sat ID	A B C D
Low LNB Frequency	9750
High LNB Frequency	10600
Scan	





To scan the transponder select “Scan” and press OK key.

Scan Transponder	
Frequency	12054
Symbol Rate	Auto
FEC	Auto
Polarization	Horizontal
Sat ID	1
Low LNB Frequency	9750
High LNB Frequency	10600
Scan	

Please wait.

Press EXIT key, if you want to exit without scanning transponder. In this case settings are stored even you do not scan transponder.

In configuration menu, to clear all channels from channel list select “Clear Program List” and press OK Key. “Program list cleared” appears on the display after channels are removed.

Configuration Menu	
Audio Language	fin
Subtitle Language	fin
Front-end Control Mode	Universal LNB
LNB Control Mode	Normal
Scan Satellite	
Scan Transponder	
Clear Program List	
Add Default Channels	
Program List Cleared.	

In “Add Default Channels” menu you can add channel lists of different satellites according to region (European, Nordic or British). Select region with the left or right arrow key and press OK key to confirm region. In the channel list the satellite is indicated as following. European A=Astra, B=Hotbird, Nordig: A=Thorn, B=Sirius.



Configuration Menu	
Audio Language	fin
Subtitle Language	fin
Front-end Control Mode	Low Vertical
LNB Control Mode	Normal
Scan Satellite	
Scan Transponder	
Clear Program List	
<b>Add Default Channels</b>	<b>European</b>
Channels Added.	

To exit menu press EXIT key. The settings you made will be saved and “User settings saved” appears on the display.

User settings saved.

In main menu, to adjust modulator, select “Modulator” and press OK.

Modulator Menu	
<b>Output Channel (CCIR)</b>	<b>24</b>
TV Standard	BG
Audio	Stereo
Output Attenuation	0
Fine Tune	0.00 (495.25)

You can select output channel using left and right arrow keys. The channel number will be displayed simultaneously on front panel display. The selectable channels are S02 - S10, 5 - 12, S11 - S41 and 21 – 69 (CCIR).

You can select the TV standard using left and right keys and audio output for BG standard. “Mono” is standard audio. “Stereo” and “Dual” use dual tone coding system to transmit two audio channels. “Dual Swap” reverses the main and secondary audio. For standards other than BG only mono can be used.



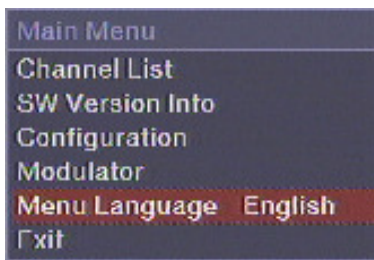
All selectable options in Modulator Menu are shown below.



To adjust modulator output attenuation use left and right arrow keys. You can fine tune output frequency when using different channel grid than CCIR. Adjustment is done using left and right arrow keys in steps of 250 kHz. Adjustment range is  $\pm 4$  MHz. You can monitor the adjusted frequency in parenthesis on the same line.

Press EXIT key to exit menu. The settings you made will be saved.

To select menu language, select "Menu Language" and press OK. You can select the menu language using left and right keys.



Press EXIT key to exit menu. The settings you made will be saved.

### 3.4 Normal operation

When not using the menu system you can adjust audio volume by pressing left and right VOL keys (Fig 2. no 4 or 5) and change channels using up and down CH keys.

To open the Channel List press EPG key (Fig 2. no 9). To see current channel info press INFO key (Fig 2. no 2). You can also monitor satellite signal quality by pressing F1 key (Fig 2. no 8).



Press EXIT key to close this display. When programming is ready, the front panel switch must be slided to center position. This will prevent accidental changes to be made while controlling other units. The display, except two leds, are switched off in 6 minutes after programming is finished.

#### 4. Technical specification

Number of channels	4
Tuners	4
Input frequency range	950 - 2150 MHz
Input level	-70 ... -25 dBm
Waveform	QPSK (SCPC, MCPC)
Symbol rate	4-45 MS/s
FEC decoder	Automatic
Transport stream	MPEG-2 ISO/IEC 13818
Teletext	Through VBI
Subtitling	DVB or teletext
CI slot	4
Output frequency range	112,25 MHz - 855,25 MHz
Modulation	AM, VSB, A2 stereo, swap dual
Transmission standard	B/G, D/K, I, L, M/N
Output level	80 - 100 dBuV
Spurious products	< 60 dBc
S/N weighted	55 dB
Data interface	4* USB 1
Input connectors	F-female 75 ohm
Output connectors	F-male 75 ohm
Power consumption	16VDC/3,5A
Dimensions	W*H*D 143mm*285mm*134mm







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Do not dispose of these products as unsorted municipal waste.

For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your house disposal service or the shop where you purchased the product.