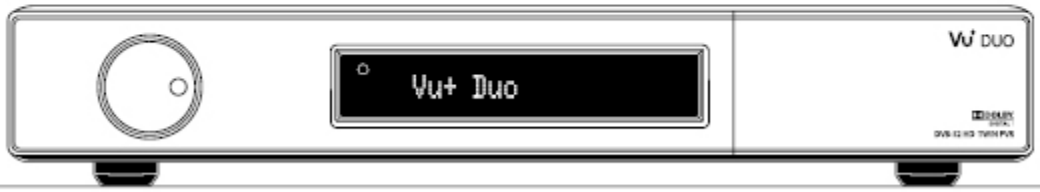
Vu+ DUO

User Manual

*Your **Smart** Linux **TV** Player* — *English*

- Powerful 405 MHz MIPS Processor
- Advanced Linux Operating System
- Twin Tuners Integrated
- 10/100 Ethernet Integrated
- Various Plug-ins Supported



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Contents

(A) PRECAUTION!!! 4
(B) Packaging Contents 6
(C) Product Descriptions 7
(D) Conditional Access 9
(E) Remote Control 11
(F) Main Features 13
(G) Technical Data 14

I. Installation of Vu+

1. Connecting Satellite Cables 15
2. Connecting the TV (and VCR) 16
3. Connecting Power 18
4. Power ON/OFF 18

II. First Time Installation (using Wizard)

Step 1. Language Selection 19
Step 2. Configuring Satellite Connection 19
Step 3. Installing Default Satellite List 23
Step 4. Parental Control Option 23

III. Basic Operations

1. Switching Channel 24
2. Volume Control 24
3. Selecting Audio Track 25
4. Subtitle 25
5. Teletext 26
6. Program Information (Infobar) 27
7. Channel List 28
8. Electronic Program Guide (Event View) 30
9. Timeshift 33
10. Recording 34
11. Recording Play 38
12. Managing Recording Files 39
13. Media Player 40
14. Plug-ins 41
15. Sleep Timer 42

IV. System Configuration

1.Main Menu 43
2.System Setup 44
2-1. Service Searching 44
A. Tuner Configuration 44
B. Loading Default Service Lists 45
C. Automatic Scan of Services 45
D. Manual Scan of Services 46
2-2. System Configuration 48
A. A/V Settings 48
B. Language Selection 50
C. Customization 50
D. Selecting Time 52
E. Hard Disk Set Up 53
F. Front Display Setup 53
G. Network 54
H. Skin Change 56
2-3. Checking CAM 56
2-4. Parental Control 57
2-5. Factory Reset 60
2-6. Checking H/W and S/W Information 61
A. Service Information 61
B. System Information 62
2-7. Remote Control Unit (RCU) Set-up 63

V. Copyright - GNU GPL 65
VI. Menu Structure 69
VII. Troubleshooting 70
VIII. Glossary 71

(A) PRECAUTION!!!

Vu+ has been designed and manufactured in compliance with EU consumer safety requirements (CE). Please read the following safety precautions carefully.

1. Connecting Power

- This product operates only in the range of AC 100V~250V and 50Hz/60Hz. Please check first your power supply to see if it fits this range.
- Please be noted that you need to disconnect from the mains before you start any maintenance or installation procedures.
- Make sure that the power cord is placed in a position where it is easy to unplug it from the mains in an emergency.

2. Overloading

- Do not overload a wall outlet, extension cord or adapter as this may cause electrical fire or shock.

3. Liquid

- This product is not water-proof and should not be exposed to dripping, splashing, or any type of liquid.
- No objects filled with liquid such as base shall be placed on the product.
- Please do not clean the product with wet cloth, which may cause a short circuit.
- No wet objects should be placed near the product.

4. Ventilation

- Allow a sufficient space between the product and other objects to make sure air ventilation of the product.
- Do not block the top or rear of the product with an object, which will close the ventilation holes and lead to a high temperature of the system. This may cause a failure of the product.
- Do not stack other electronic devices on top of the product.
- Do not insert any kind of pointed objects like screw, gimlet, etc. into the ventilation holes of the product. This will damage the product.

5. Connecting the Satellite Cable.

- Disconnect the power of the product before you connect the satellite cable to the product. Otherwise, it may cause damage to the LNB.

6. Grounding

- The LNB must be earthed to the system earth for the satellite dish.

7. Location

- Place the product indoor.
- Do not expose the product to rain, sun or lightening.
- Do not place the product near any heat appliances as a radiator.
- Ensure that there is more than 10 cm distance from any electrical devices and wall.

8. Lightening, Storm or Not In Use.

- Unplug the product and disconnect the antenna cable during a thunderstorm or lightening, especially when left unattended and unused for a long period of time. This will prevent possible damages from power surges or lightening.

9. Replacement of Parts

- Unauthorized part replacements, especially by one who is not a qualified technician may result in damage to the product.
- Ensure that when part replacements are necessary qualified technicians perform the task using the components specified by the manufacturer.

10. Hard Disk Drive

- Do not move the product or turn the power off suddenly while the Hard Disk Drive (HDD) is still running. This may result in damage to the HDD and thus the system.
- The company shall not be liable for any corruption of data on the HDD caused by careless use or misuse of users.

11. Battery

- There is danger of explosion if batteries are incorrectly replaced.
- Replace batteries only with the same or equivalent type.

Dolby Digital :

Manufactured under license from Dolby Laboratories. Dolby and the double - D symbol are trade marks of Dolby laboratories.

- "WEEE" Symbol instructions.

This product should not be disposed with other house hold wastes at the end of its working life. Please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. This will help prevent harm to the environment or human health from un-controlled waste disposal.

(B) Packaging Contents

Please check all package contents before using your product.

- Vu+
- Remote Control
- Batteries
- HDMI cable
- Power cable
- User Manual

(C) Product Descriptions

Front Panel

① Display

Displays the current menu information.
16 character dot matrix VFD

② Dial Switch

Scrolls up and down on the current menu list.
Push confirms the selection.

③ USB Host

Connects to the USB memory stick or external HDD.

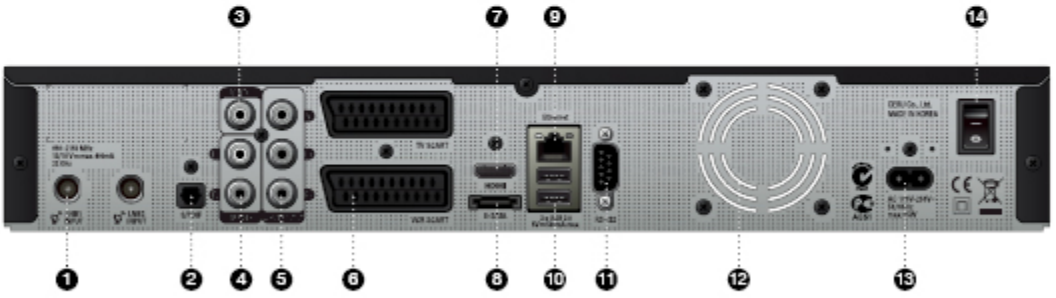
④ Smartcard reader slot

Two Smartcard slots are provided.

⑤ CI Module slot

Two CI module slots are provided.

Rear Panel



① LNB 1 In / LNB 2 In
Two Satellite cables can be connected.

② S/PDIF
Connects to a digital audio system using S/PDIF cable.

③ Video output
Connects to TV using RCA cable.

④ Audio output
Connects to TV using RCA cable.

⑤ Component (YPbPr)
Connects to TV using a component cable

⑥ SCART
Two SCART connectors are provided for TV and/or VCR using SCART cables.

⑦ HDMI
Connects to TV using a HDMI cable for both audio and video signals.

⑧ e-SATA
Connects the external HDD using e-SATA cable.

⑨ Ethernet
Connects the PC or another set top box of Vu+.

⑩ USB
Connects the USB memory stick or external HDD.

⑪ RS232
RS232 data port is provided.

⑫ FAN

⑬ Power Inlet
Connects the detachable power cord.

⑭ On/Off Switch
Powers on/off.

(D) Conditional Access

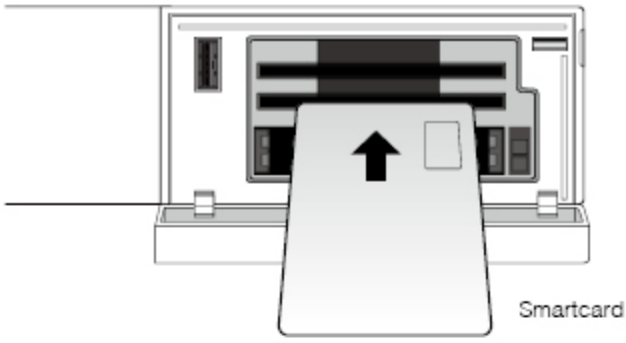
Amongst the channels that are scanned via Vu+, some channels can be properly tuned in only with the corresponding Smartcard and/or CAM (Conditional Access Module). Vu+ provides two Smartcard Reader slots and two Conditional Interface slots and users need to purchase those Smartcards and CAMs that are required for viewing such subscription based services.

Insertion of Smartcard

Vu+ supports Xcript. Users need to buy only these Smartcards without having to buy additional CAMs to watch those channels that are encrypted in Xcrypt.

① Open the door on the right side.
② Insert Xcrypt Smartcard as in the following instruction.
③ Make sure that the Smartcard remains inserted while viewing.

Insertion

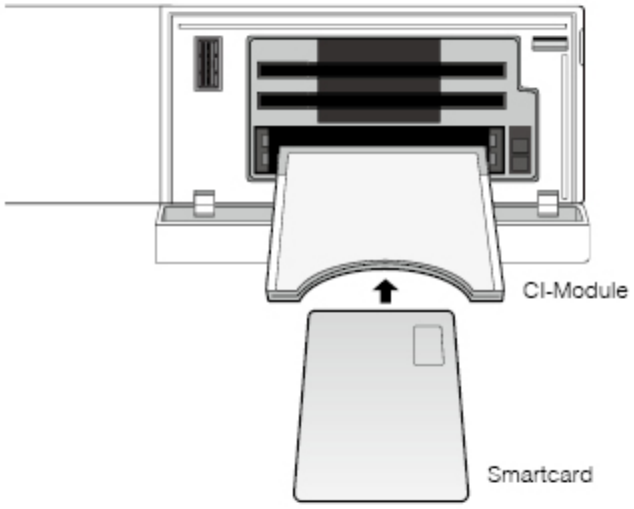


Insertion of CAM (Conditional Access Module)

There are several Conditional Access Systems (CAS), other than Conax and Xcrypt that Vu+ supports. To be able to watch channels that are encrypted in such CAS as Nagravision, NDS, Irdeto, Viaccess, etc, users need to purchase a CAM that is corresponding to each CAS, as well as Smartcard to decrypt those encrypted channels.

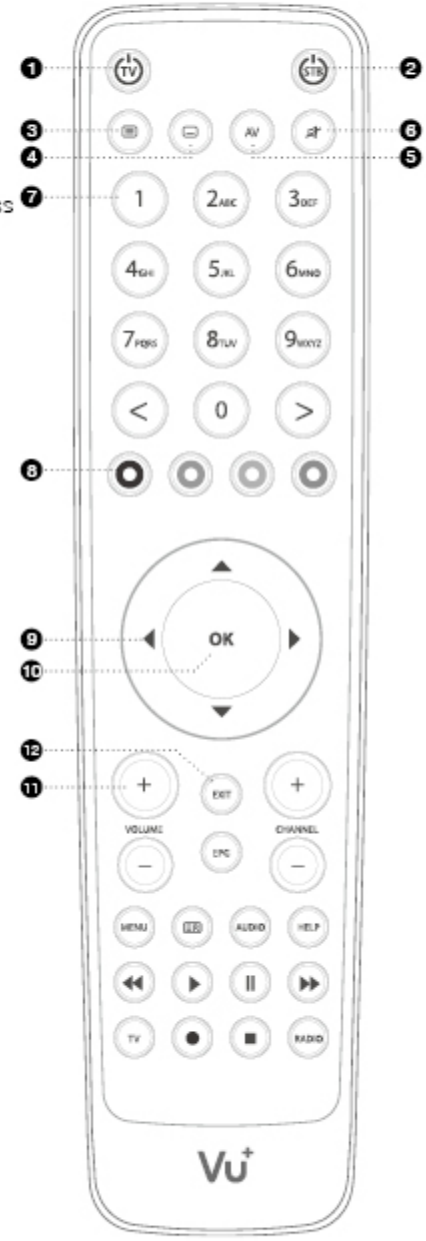
① Insert a Smartcard into the CAM as in the below picture.
② Once the Smartcard inserted into the CAM, insert the CAM into the CI slot.
③ Make sure that the CAM remains inserted while viewing.

Insertion



(E) Remote Control

Vu+ remote control (RCU) is a universal one that can be used for TV and STB both. Please refer to IV. System Configuration 2.7 Remote Control Unit Set-up section for more explanation.



① TV Power
Once configured for TV remote control, this button is for TV power on/off.

② STB Power
When the STB is turned on, normal press of this button puts the STB into Idle Server Mode instantly. When the STB is turned off, normal press of this button turns the STB on instantly.
Long press activates Standby/Restart menu.

③ Teletext
Displays the teletext information of the current channel if the channel provides subtitles.

④ Subtitle
Displays the subtitle of the current channel if the channel provides subtitle.

⑤ AV
This button is used when selecting video source of TV.

⑥ Mute
Silences the audio temporarily.

NOTE : when Teletext is activated, key is also used when toggling between the Teletext page and the live mode.

⑦ Numeric Keys
Enters a channel number or numbers required to be input according to menu options.

⑧ Color Keys
Each key is assigned a specific function that may be different in each menu.

- Red – mainly used for REC, Cancel, etc.
- Green – mainly used for OK
- Yellow
- Blue

⑨ Navigation Keys
Navigates up/down and left/right on the menu options.
Up/down keys are used to call up the channel list.

⑩ OK
Confirms the selected menu option.

⑪ Volume + / -
Adjusts the audio volume.

⑫ EXIT
Exits the current menu option into the live mode, or switches one step back of the menu.

⑬ EPG
Displays the Electronic Program Guide (EPG) information if provided.

⑭ Channel + / -
Navigates through the scanned channel list.

⑮ Menu
Displays the main menu.

⑯ Recording List
Displays the list of recordings stored on the internal HDD if any.

⑰ Audio
Displays the audio track option to choose (e.g. ACS, Stereo).

⑱ Help
Displays major important operation methods of Vu+.
This provides users with a quick guide of using Vu+.

⑲ Fast Rewind
Fast rewinds at up to 128 times faster than the normal speed (x2 / 4 / 8 / 16 / 32 / 64 / 128).

⑳ Play
Plays the selected file (e.g. recording) at the normal speed.

㉑ Pause
Pauses the live program or recording play.

㉒ Fast Forward
Fast forwards at up to 128 times faster than the normal speed (x2 / 4 / 8 / 16 / 32 / 64 / 128).

㉓ TV
Displays the TV Channel list.

㉔ Recording
Displays instantly the recording menu.

㉕ Stop
Stops playing of a recording and goes to the live mode.

㉖ Radio
Displays the Radio channel list.

(F) Main Features

- 405 MHz MIPS Processor
- Linux Operating System
- Media Player
- Downloadable Plug-ins supported
- 2 x Smartcard Readers (Xcrypt)
- 2 x Common Interface
- MPEG2 / H.264 Hardware Decoding
- DVB-S2 Twin Tuners
- 16 character Dot Matrix VFD
- 128MB NAND Flash / 384 MB RAM
- External SATA supported
- 10/100MB Ethernet Interface
- 3 x USB 2.0
- RS232
- HDMI
- YPbPr
- Composite Video (RGB)
- 2 x SCART
- SPDIF for digital bit stream out (optical)
- EPG supported
- Automatic & Manual Service Scan supported
- Multiple LNB control (DiSEqC) supported
- Skin change supported
- Stable SMPS integrated

(G) Technical Data

Vu+ Technical Specifications		
Front Panel	Display	16-digit Dot Matrix VFD display with status icons displaying channel names and program information
	Smart card slot (Conax embeded)	2
	Common Interface	2
	USB 2.0	1
	Key	Multi-functional dial switch
Rear Panel	Power switch	1
	Sat-IF input/output	2 x F-type socket
	Connection TV/VCR	2 x Scart socket
	Video output (analogue)	3 x Cinch socket (YPbPr)/1 x Cinch-socket
	Video/audio output (digital)	1 x HDMI
	Audio output (analogue)	2 x Cinch socket
	Audio output (digital)	Standard optical (SPDIF)
	USB 2.0	2
	eSATA	1
	Ethernet	1
	RS 232	1
Power	Mains voltage	100-240/50-60 V/Hz
	Power consumption (Max./typ. operation/stand-by)	65/30/1 W
RF	RF range	950-2,150 MHz
	Modulation, FEC, de-multiplexer	DVB-S/DVB-S2 standard
Video	Video resolution	CCIR 601 (720 x 576 lines), 576p, 720p, 1080i
	Video decoding	MPEG-2, MPEG-4 compatible
	Input data rate	2-45 MSymb/s
	S/N	> 53 dB
Decoding	Decoding	Dolby Digital, MPEG-4 (AAC-HE), MPEG-1, Layer 1, 2 and 3
	Sampling rate	32/4.1/48 kHz
	S/N	> 65 dB
LNB	LNB supply (horiz./vert.)	14/18; Max. 400 V/mA
	Control signal	22kHz ; ToneBurst ; DiSEqCTM1.0/1.1/1.2
General	Dimensions (W x H x D)	380 x 60 x 280 mm
	Weight (without HDD)	App. 3.2kg

NOTE : ⓘ means Remote control operation order.

I. Installation of Vu+

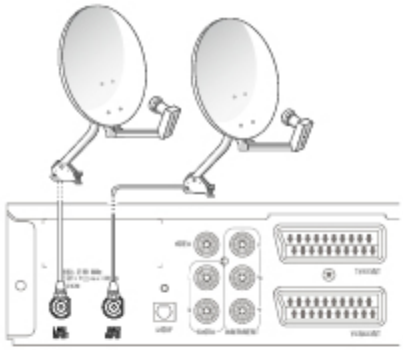
This chapter will guide you through the whole installation process of Vu+. Please read each section carefully to make sure that the system runs properly.

1. Connecting Satellite Cables

Vu+ is integrated with twin satellite tuners, and one of the first steps is to connect satellite cable(s) to Vu+ in order to gain optimal signal quality. You can either choose one of the following connection methods depending on the equipment you have.

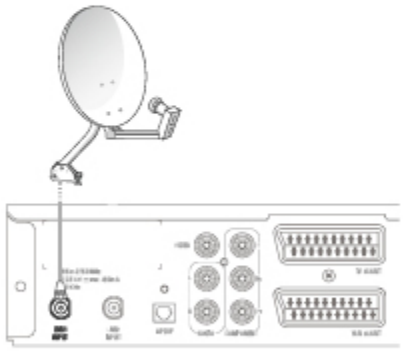
A. Two Separate Satellite Cables

In case you have two separate satellite cables providing different broadcast signals, you can configure LNB 1 Input and LNB 2 Input independently.



B. Internal Loop through

In case you have only one satellite cable, connect the cable to LNB 1 Input.

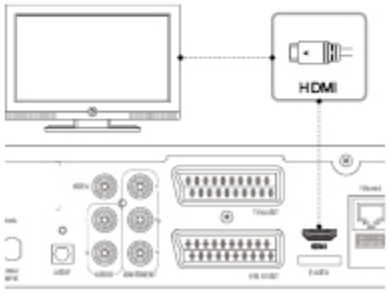


2. Connecting the TV (and VCR)

Vu+ provides a variety of audio/video connection methods.

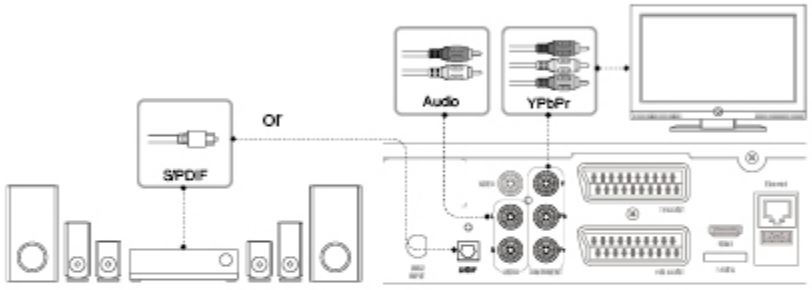
A. Connecting TV via HDMI cable

For the sake of the best picture quality, especially for digital TV, HDMI connection is recommended. Most HDTVs have HDMI connectors to ensure the highest picture quality. In the rear panel of Vu+ one HDMI connector is available for this purpose. Connect your TV to Vu+ using a HDMI cable as follows.



B. Connecting TV via Component Cable

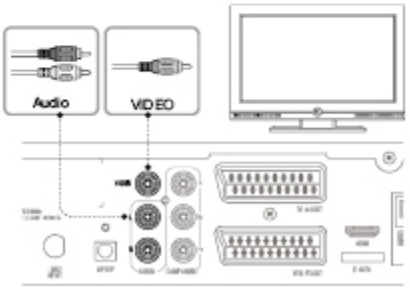
The secondly recommend TV connection for digital TV is via component cable (YPbPr). However, unlike the HDMI connection which delivers audio and video signal at the same time, YPbPr connection requires additional audio connection either via RCA cable (Stereo L/R) or S/PDIF as follows.



NOTE : When you have an A/V receiver with S/PDIF digital audio input, this connection is recommended to enjoy the best audio quality, especially for the Dolby Digital sound.

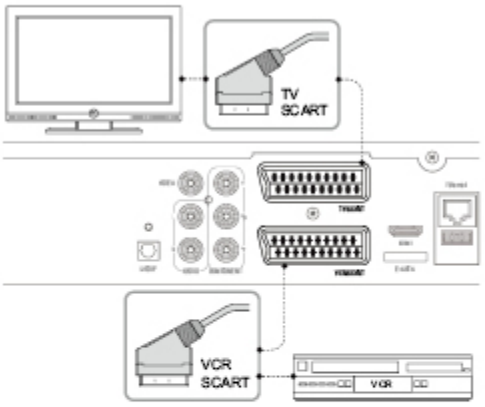
C. Connecting TV via RCA (Video) Cable

Vu+ provides Composite video connection as well. Composite cable has normally three connectors at the both end; one Video (Yellow) and two Audio (White / Red). Connect your TV to Vu+ as follows:



D. Connecting TV(and VCR) via SCART cables.

In case your TV is analogue TV, SCART cable is the most common method. Connect your TV to Vu+ using SCART cable as follows.



3. Connecting Power

A power cord is provided as one of the basic accessories of Vu+.

① Connect the power cord to the connector at the rear panel of Vu+.
② Connect the power cord to a power outlet.
③ Turn on the power switch at the rear panel.

NOTE : AC input condition

- Nominal Voltage Range: 100 – 240 VAC
- Maximum Voltage Range: 90 – 264 VAC
- Nominal Frequency: 50 / 60 Hz
- Maximum Frequency Range: 47 – 63 Hz

NOTE : ⓘ means Remote control operation order.

4. Power ON/OFF

[ⓘ : Press Power ⏻ key / Press MENU (MENU) > Select Standby/Reset]

There are several ways to turn your Vu+ ON or OFF

- Complete Power Shutdown

There is a Power Switch in the rear panel and once it is ON, you do not need to turn it on or off each time. It takes a longer time to boot the system if you turned it off by this switch.

- Idle Server Mode

POWER key is normally used to turn the power of Vu+ on or off. If you press POWER, it instantly switches your Vu+ off or on. In this mode, the system is not completely shutdown and thus it takes a shorter time to turn it on and off.

- Standby Mode [ⓘ : Menu > Standby/Restart > Standby]

Standby is used to reduce the standby power consumption. Vu+ is designed to be energy efficient and to guarantee the power consumption to be under 0.5W in the Standby mode.

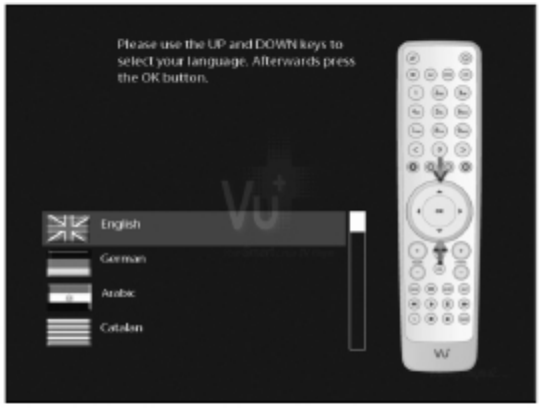
II. First Time Installation (using Wizard)

When you turn on Vu+ for the first time after purchase, an installation wizard will begin step by step.

NOTE : OK key is used for confirmation and turns to the next step. Press EXIT key to return to the previous page.

Step 1. Language Selection

Vu+ provides various languages and here you can choose the main language for your Vu+. Use UP/DOWN key to scroll up and down to find the language you want.

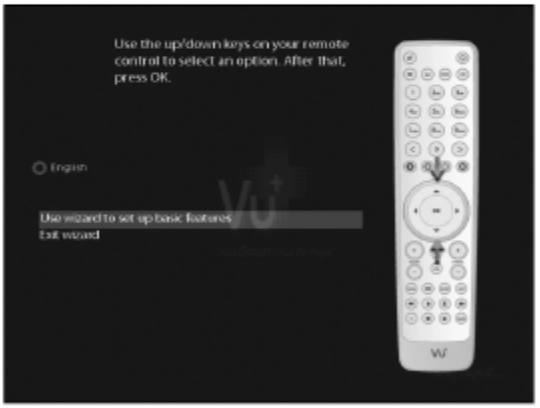


Step 2. Configuring Satellite Connection

From now on you need to configure the satellite connection. You have two options:

- Use wizard to set up basic features
- Exit wizard

You are strongly recommended to use wizard as it is designed to guide you through the configuration process.

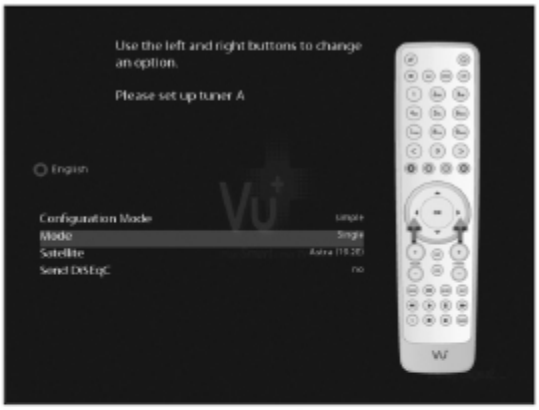


A. Configuring Tuner A

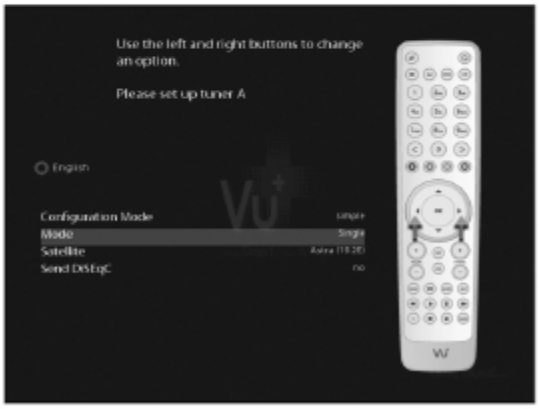
Using LEFT/RIGHT key, you can choose one of the following Configuration Modes:

- Nothing connected
- Simple
- Loop through to: mode to make the LNB1 be internally connected to the LNB2 in.
- Equal to: mode to use the same configuration as that of Tuner B.
- Advanced: for an advanced user configuration.

If you choose Simple configuration mode, the following picture will appear.

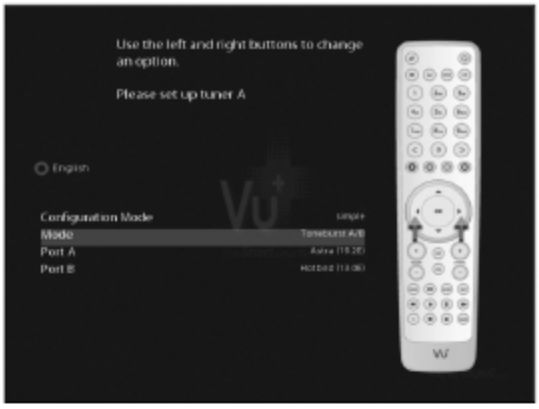


The five modes are available for the satellite cable connection between LNB and your Vu+ as below :



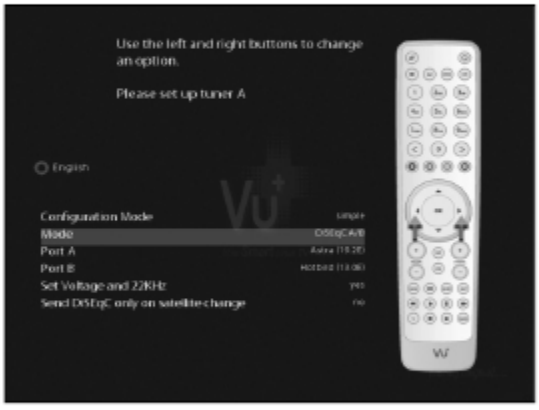
• Single

This option is used to receive a single satellite with a single LNB. The cable from LNB is directly connected to Vu+.



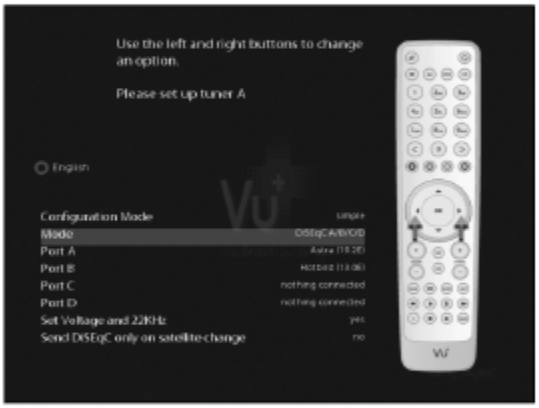
• Toneburst A/B

This option is used if you want to receive two satellites using a Toneburst switch.



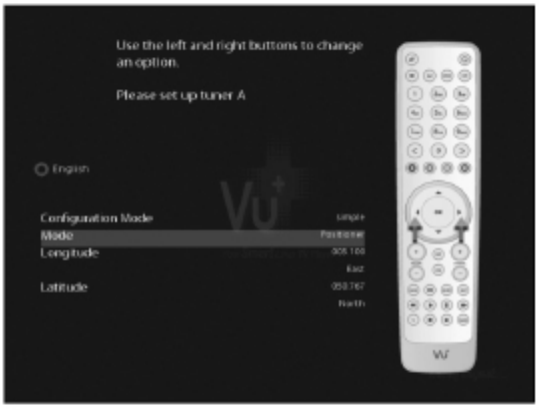
• DiSEqC A/B

This option allows you to configure two satellites in Port A and Port B.



• DiSEqC A/B/C/D

This option allows you to configure four satellites in Port A, Port B, Port C and Port D.



• Positioner

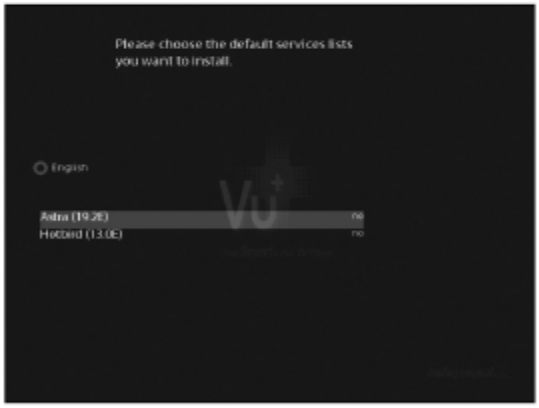
This option is used when you have a motorized satellite antenna.

B. Configuring Tuner B

This step is for the configuration of Tuner B (LNB 2 Input), and the process is same as that of Tuner A. For further information please refer to the above "Configuring Tuner A" section.

Step 3. Installing Default Satellite List

Here you will be asked whether you want to install the default satellite lists. Press OK and the following image appears:



Step 4. Parental Control Option

Here you can choose whether to enable the parental control option. If you press OK, you will be asked to enter PIN number

III. Basic Operations

1. Switching Channel

[ⓘ : Press ▲ / ▼, CHANNEL + / − key / Press ◀ / ▶ to move to the next channels]

Vu+ offers various channel zapping methods. You can switch the current channel by pressing

- UP/DOWN key

  If you press UP or DOWN key, *Channel Selection* menu appears.

You can move up and down to select the channel that you want to tune into.

- LEFT/RIGHT key

  If you press LEFT or RIGHT key, the previous or subsequent channel of the current channel is tuned in.

- CHANNEL +/- key

  If you press CHANNEL + or – key, this will call up the *Channel Selection* menu.

- Channel Number

  Enter a channel number, and it will instantly tune into the channel.

NOTE : If channel change is not done, it is probably because the selected channel is encrypted and you do not have a proper smartcard.

2. Volume Control

[ⓘ : Press VOLUME + / − key]

You can adjust the audio volume by pressing VOLUME +/- key. You can also mute or unmute the audio temporarily by pressing MUTE key (🔇)

3. Selecting Audio Track

[(i) : Press AUDIO (audio) key]

You can check what audio tracks are available to choose by pressing AUDIO key.

By using UP/DOWN key and Color key, you can select a different audio language or Stereo sound.

NOTE : Available options on this menu will differ depending on the service.

4. Subtitle

[(i) : Press SUBTITLE (subtitle) key or Press MENU (menu) > Subtitle]

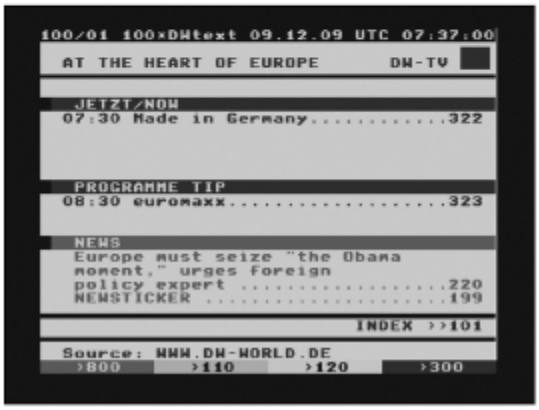
You can view the subtitle of the current program if the program provides the subtitle. Press SUBTITLE ((subtitle)) key and *Subtitle selection* menu appears as below.

Available subtitles, if any, will display. By using UP/DOWN navigate the list to select a subtitle that you want to play and press OK to activate it.

5. Teletext

[ⓘ : Press TELETEXT ▤ key]

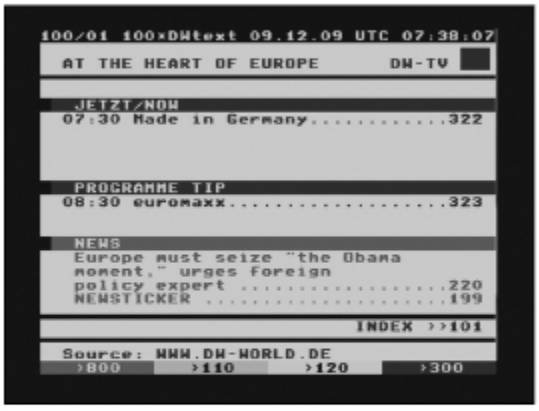
You can call up Teletext information by pressing TELETEXT key (▤). It will take some time to load all the information.

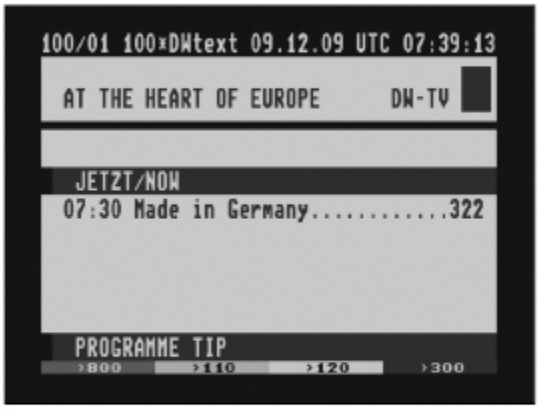


You can navigate through the Teletext page by using UP/DOWN key to select a text page. Also, just simply enter the page number that you want to read.

- MUTE key
  Once you activated Teletext, you can toggle between the live mode and the Teletext page by pressing MUTE (🔇) key instantly. In this case, loading of the Teletext page takes place instantly.

- VOLUME +
  If you want to enlarge the page, press VOLUME + key.





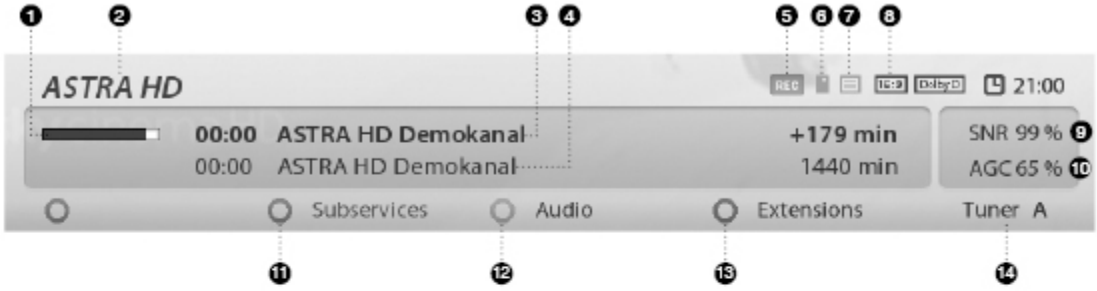
• VOLUME -
If you want to reduce the page size, press VOLUME – key.

6. Program Information (Infobar)

[ⓘ : Press OK (OK) key]

Whenever you change the channel, infobar is always displayed for 5 seconds (default setting). Infobar is designed to provide you comprehensive information of the channel that you are currently watching.

• Press OK to call up infobar.



① Remaining time of the current program
② The name of the current channel
③ The current program
④ The next program
⑤ REC : Highlighted in red when recording is in progress.
⑥ CAS (▮) : Encrypted program
⑦ Teletext (▤) : Highlighted when the program provides Teletext.
⑧ 16:9 : Screen ratio

⑨ SNR (Signal to Noise Ratio) : Signal Level
⑩ AGC (Automatic Gain Control) : Signal Strength
⑪ GREEN : to call up Subservices, if available
⑫ Audio : to display available audio tracks.
⑬ Extensions : to call up a Picture in Picutre.
⑭ A : The tuner being used for the current channel.

7. Channel List (Channel Selection Menu)

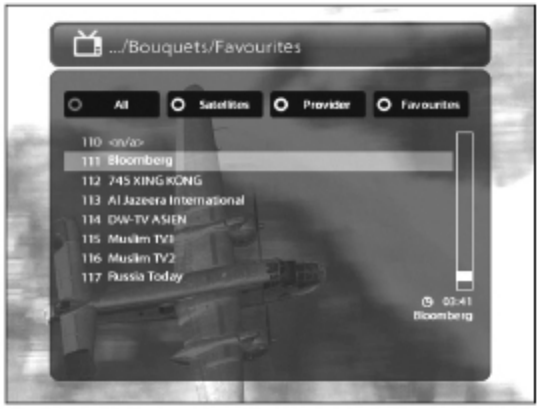
[ⓘ : Press ▲ / ▼, CHANNEL + / − key]

If press UP/DOWN key, this will activate *Channel Selection* Menu as below.
Four types of the channel lists are available to help you manage your channel selection.

• RED displays the list of all scanned channels.

• GREEN displays the list of all scanned satellites. Per each satellite, channels are arranged according to *Services*, *Provider*, and *New*.

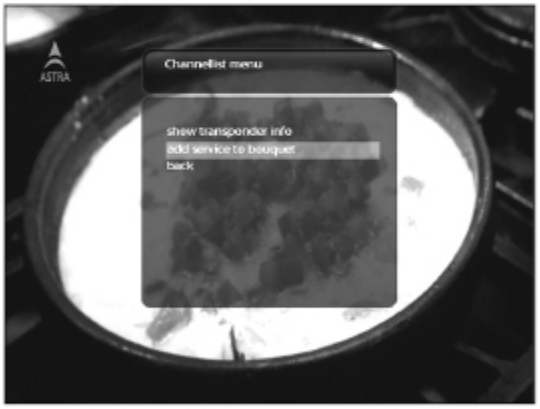
• YELLOW displays the list of providers.



• BLUE displays the list of your favorite channels.

In order for you to add certain channels to this *Favourites* list,

① Call up the *Channel Selection* list by pressing UP or DOWN key.
② Go to the *All* list by pressing RED.
③ Select the channel that you want to add to the *Favourites* list.
④ Press MENU key on the selected channel and the following menu appears.



⑤ Choose "*add service to favourites*" and press OK.
⑥ Go to the *Favourites* list by pressing BLUE to confirm that the selected channel is correctly included in the list.

8. Electronic Program Guide (Event View)

[ⓘ : Press EPG (EPG) key]

The Electronic Program Guide (EPG) displays the program information of each channel, if provided, in time and date order. You can view the detailed program information by pressing EPG key and the following menu, *Eventview* appears.

Detailed information of the current channel will be displayed on EPG. On this menu, three options are provided.

- RED (Similar)

  This option helps you find similar programs. If there are one or more programs that are similar to the current program, *EPG Selection* window displays them as below.

• GREEN (Add Timer)

If you press GREEN key, *Timer entry* menu appears as below. This option is used to set up a new timer for recording or zapping.

- Name

Displays the name of the selected program.

- Description

Displays a short description of the selected program.

- Timer Type

• Select *Zap* for channel tuning reservation.
• Select *Record* for recording reservation.

- Repeat Type

• Select *Once* for one time of zapping or recording reservation.
• Select *Repeated* for repeated zapping or recording reservation.
• Repeats - This option is given only when you selected *"Repeated"* in the Repeat Type. You can reserve zapping or recording per Daily / Weekly / Mon-Fri / User-defined.

- Date

Displays the current date. This entry is on when you selected *Once*, in the Repeat Type.

- Start Time

You can set the time to begin recording or zapping.

- End Time

You can set the time to end recording or zapping

- Channel

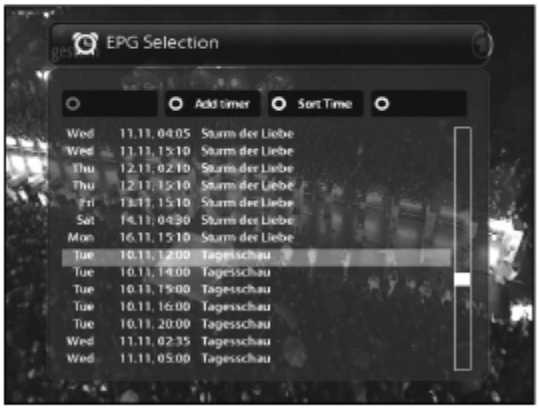
This entry allows you to change the channel. Press LEFT/RIGHT key to call up *Channel Selection* menu. You can select a different channel from this list using this option. To return to *Timer entry* menu, press EXIT.

- After event

This option allows you to choose from auto, do nothing, go to Idle Server Mode, and go to Standby after the timer event is done.

• YELLOW (Single EPG)

Press YELLOW while *Eventview* menu is on, to call up the program event schedules of the selected channel.



In this state, you can sort the list according to A-Z order or Time by pressing YELLOW.

NOTE : To add a timer for recording or zapping, press GREEN.

• BLUE (Multi EPG)

Press BLUE to activate *EPG Selection Multi* window.

- You can move the previous or next program within the same channel by using YELLOW (Previous)/ BLUE (Next).

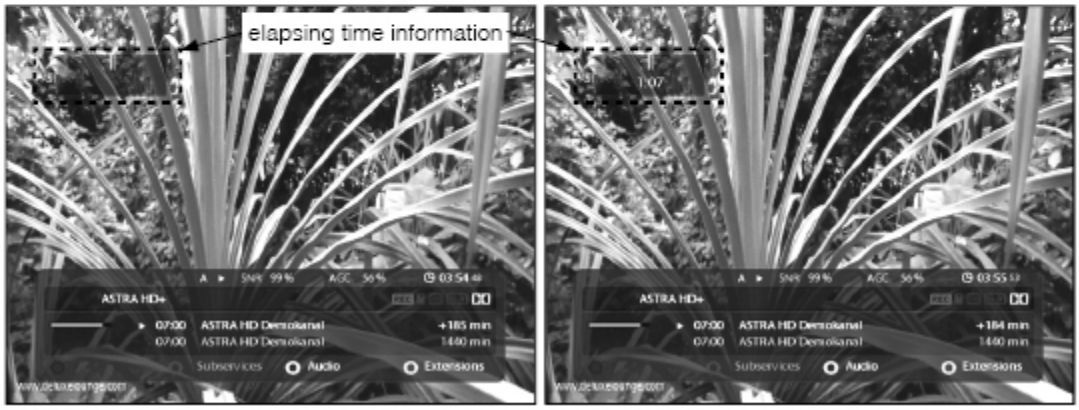
NOTE : Not all channels provide EPG information and thus in case of no EPG data, nothing will be displayed except for the channel name.

- You can switch to another channel by using UP/DOWN key.
- RED key is used to instantly tune into the selected channel.
- GREEN key is used to reserve recording or zapping of the selected program.

9. Timeshift

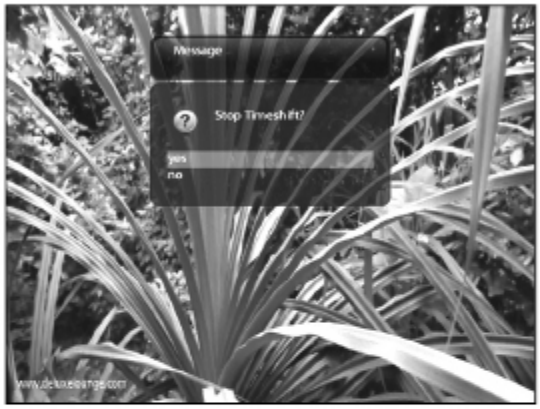
[ⓘ : Press ▶ or ⏸ key]

For your information, Timeshift is an instant recording of the current program that you are watching. Press PLAY or PAUSE key, it will instantly pause the audio and video of the program, and a small window displaying elapsing time information will appear on the left upper side of the screen as below.



In this state, Timeshifted recording is running until you press either PLAY or PAUSE again. You can restart viewing of the program.

If you want to stop Timeshifted recording and to return to the live mode, press STOP key.



You will be asked of *Yes* or *No* to stop Timeshift.

NOTE : What is different from normal recording is that Timeshifted recording is not meant to be stored on HDD. If you stop Timeshift, you cannot replay the Timeshifted recording.

10. Recording

Vu+ is a Personal Video Recorder with two integrated DVB-S2 tuners. You can record multiple programs at the same time. There are two ways to operate and manage recording.

① Instant Recording

[ⓘ : Press REC ● key]

Press REC key to start the recording of the current program.

Five recording options are given.

- Add recording (stop after current event)
  This option is used when you want to end recording when the current program ends.

- Add recording (enter recording duration)
  This option is used when you want to manually set the length of recording by entering a certain number as below:

- Add recording (enter recording end time)

This option is used when you want to define a certain date and time when the recording is stopped.

- Add recording (indefinitely)

This option is used when you want to keep recording running without a specific end time. Recording will continue unless you stop it.

- Don't record

This option is used to exit from this menu without recording.

② Recording by Timer

[ⓘ : Press MENU (MENU) key > Select Timer]

You can manage recording process using *Timer List* menu. Press MENU and select *Timer* on the menu.

In this menu, color keys are assigned for each different function.

- RED (Delete)

  This option is used to delete a timer.

- GREEN (Add)

  This option is used to add a timer.

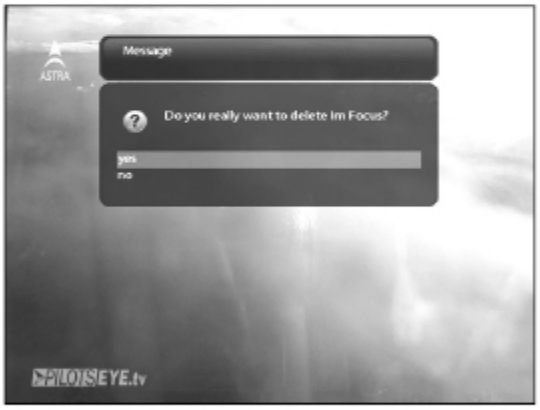
- YELLOW (Disable)

  This option is used to disable the timer and X mark will appear.

NOTE : if you want to enable the disabled timer, press YELLOW again.

- BLUE (Cleanup)

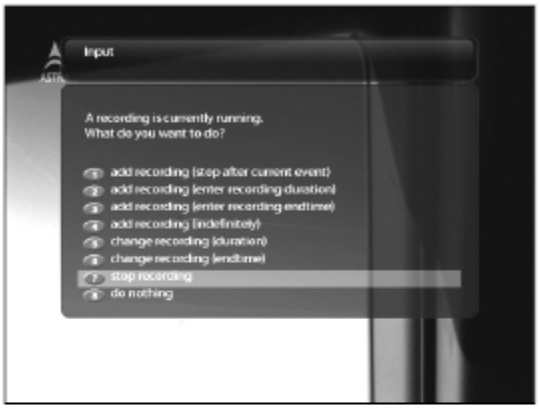
This option is used to remove those finished timers from the *Timer List*.



NOTE : Make sure that the HDD on your Vu+ has enough free space available for recording. If the free space on the HDD is not sufficient, recording might stop before the defined end time.

- Stop Recording [ⓘ : Press REC ● key > Select *"Stop Recording"*]

If you want to stop recording, press REC again while recording is running. Select *Stop Recording*.



11. Recording Play

[ⓘ : Press Recording List (⏺) key]

You can view recorded files on the *Recorded files* menu. Press Recording List (⏺) to activate this menu.

Select the file that you want to play. It will instantly replay the file and display the recording infobar.

This infobar gives you the following information of the recording.

① Title of the recording
② Total duration of recording
③ Remaining time
④ Progressive bar
⑤ Elapsed time

12. Managing Recording Files

[ⓘ : Press Recording List (REC) key > Press MENU key]

If you want to delete a recording file, press MENU key while *Recorded files* menu is on.

Select "*delete*" and confirm *OK* to delete.

Other than "*delete*", in this menu, you have options in sorting and listing of the recording files.

- Sort by date
- List style default
- List style compact with description
- List style compact
- List style single line
- Hide extended description.

13. Media Player

[ⓘ : MENU (MENU) > Media Player]

Vu+ is truly a multimedia receiver capable of playing media contents. Using Media Player, you can enjoy Music, Photo and Video contents stored on the internal HDD and/or an USB memory stick plugged into Vu+.

If you play *Media Player*, the following player will appear.

① Go into any directory of the HDD or plugged USB.

② Select a file in the *File List* to play and press OK. The selected file will be displayed in the *PlayList*.

* Supported formats are mainly JPG, MP3, AVI, etc.

③ In the same way, you can play the recording files stored on the HDD.

④ To move between *File List* and *Paly List*

- Press CH- to go into *Play List*
- Press CH+ to go into *File List*

⑤ To call up *Media Player* window

- Press Play(▶),or Pause(⏸) or Stop(■)

⑥ To play

- Select a file in the *Play List* and press OK.

14. Plug-ins

[ⓘ : MENU (MENU) > Plugins]

Vu+ is integrated with standard 10/100Mbps Ethernet with RJ 45 connector. You are recommended to use this network capability of Vu+ to fully enjoy the system. If your Vu+'s network connection is established, you can directly download plug-ins from a designated website of Vu+.

① Press MENU and select *Plugins* menu to active *Plugin browser*.

② Press GREEN key to download a list of plug-ins available.

③ Once the download is done, a list of plug-ins will be displayed.

④ Select a plug-in to download.

⑤ You can check if the download is done properly on the Plugin browser

From this site, you can check available plug-ins to download as below.

15. Sleep Timer

[ⓘ : MENU (MENU) > Standby/Restart > Sleep Timer]

You can set a specific time when your Vu+ goes into Idle Server Mode or Standby mode, using this menu. Three color keys are used to set up this sleep timer.

① RED

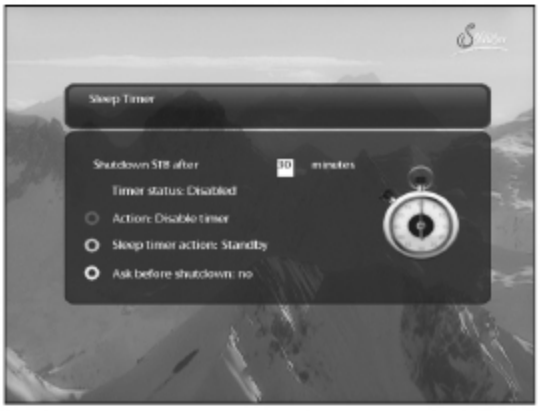
This option is used to enable or disable *Sleep Timer*.

② GREEN

This option is used to choose between *Idle Server Mode* and *Standby mode*.

③ YELLOW

This option is used to choose whether to be asked of confirmation before system shutdown.



IV. System Configuration

Vu+ is a very sophisticated device designed to allow users a variety of system setting options as detailed as possible. You can fine-tune your Vu+ to be your OWN system to fit your taste. This chapter will guide you through the entire menu of system configuration.

Prior to System Configuration, please take a notice on the menu structure of Vu+ first.

1. Main Menu

[ⓘ : Press MENU (MENU)]

The main menu of Vu+ consists of the following sub menus.

① **Subtitles**
Displays Subtitle selection menu of the current program.

② **Media player**
Activate Media player of Vu+. For more information, please refer to the page 40.

③ **VCR scart**
Switches to VCR scart connection.

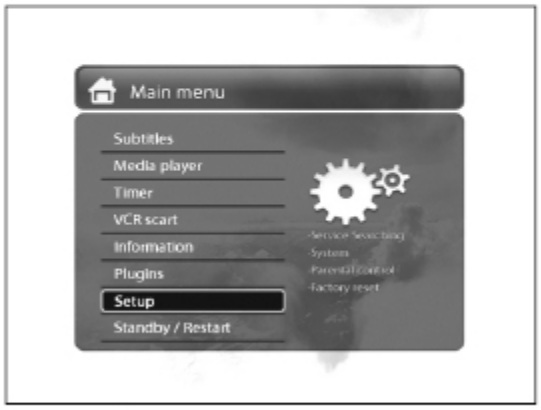
NOTE : If your VU+ is not connected to VCR scart, the screen will go black. In this state, just press EXIT to return to the previous state.

④ **Information**
Has two sub menus for *Service / About*. *Service* menu provides the detailed information of the current channel. *About* menu provides the detailed information of the H/W and S/W system of your Vu+. For more information, please refer to the page 61~62.

⑤ **Plugins**
Activates Plugin browser of Vu+. Using this browser, you can log onto the designated website and you can download a variety of new plug-ins. For more information, please refer to the page 41.

⑥ **Setup**
Provides all of the system settings. For more information, please refer to the page 44~62.

⑦ **Standby / Restart**
Provides options for power on/off and sleep timer. For more information, please refer to the page 18.



2. System Setup

[ⓘ : Press MENU (MENU) > Select Setup]

The Setup menu consists of the following sub-menus.

① Service Searching
② System
③ Common Interface
④ Parental Control
⑤ Factory reset

2-1. Service Searching

[ⓘ : Press MENU (MENU) > Setup > Service Searching]

Here you set up the tuners of your Vu+ and run channel scanning automatically or manually.

A. Tuner Configuration

[ⓘ : MENU (MENU) > Setup > Service Searching > Tuner Configuration]

If you run the First Time Installation process (refer to the page 19~22), the Tuner A and B are already configured. You can check the information of each Tuner and which satellites are scanned by each Tuner as follows.

B. Loading Default Service Lists

[ⓘ : MENU (MENU) > Setup > Service Searching > Default Service List]

In case there are service lists available for certain satellites, for example, Astra or Hotbird, you can install the lists in the channel list of your Vu+.

If default service lists are not available, you can run the service scan automatically or manually to add TV and radio channels into the channel list of your Vu+.

C. Automatic Scan of Services

[ⓘ : MENU (MENU) > Setup > Service Searching > Automatic Scan]

The easiest way to scan services is to use *Automatic Scan*. In the *Automatic Scan* menu, there are two options to choose from as below.

- Clear Before Scan

  YES is used when you want to delete the existing channel list before you start the automatic scan. If you want to keep the existing list, select *NO*.

- Scan Tuner A (DVB-S2) (or together with Tuner B)

  If Tuner A and B are configured for the same satellite(s), only Tuner A will appear. If not, both Tuner A and B will appear, asking which one you want to scan.

Press OK to activate the automatic scan. This will take some minutes. As the scan proceeds, you will see the progressive bar and the newly found services underneath.

D. Manual Scan of Services

[ⓘ : MENU (MENU) > Setup > Service Searching > Manual Scan]

If you know well enough to configure each exact setting required for manual search of services, you can do manual scan as well. There are many parameter values that you need to decide as below.

For DVB-S2 (High Definition)

For DVB-S (Standard Definition)

Amongst other things, the below parameters are what you need to decide prior to performing manual scan.

① Tuner

You need to decide which tuner you want to use for manual scan.

② System

Here you have two options between DVB-S (SD) and DVB-S2 (HD).

③ Frequency

You need to enter the exact frequency of the transponder that you want to scan.

④ Symbol Rate

You need to enter the exact symbol rate of the transponder that you want to scan

⑤ Polarity

Here, you have options for Horizontal, Vertical, Circular Left and Circular Right. You need to know the polarity of the transponder that you want to scan.

⑥ FEC (Forward Error Correction)

You need to enter the exact FEC value of the transponder that you want to scan

⑦ Modulation

Here you have two options for QPSK (SD) and 8PSK (HD).

⑧ Network Scan

Here you have two options for *YES* and *NO*. *NO* is used to scan the transponder (TP) based on the data that your Vu+ currently has. *YES* is used to scan the TP not just based on the existing TP data but also using new TP data, if there is TP data newly transported from the TP. Naturally, *YES* option takes longer while it may results in a better scan result.

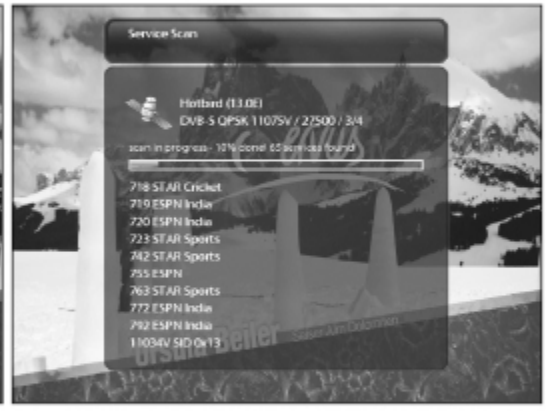
⑨ Clear Before Scan

YES is used when you want to delete the existing channel list before you start the automatic scan. If you want to keep the existing list, select *NO*.

⑩ Only Free Scan

Here you have two options for *YES* and *NO*. If you want to scan only Free to Air channels without any encryption, select *YES*. Otherwise, select *NO* to scan all FTA and CAS channels.

Press OK to activate the manual scan. This will take some minutes. As the scan proceeds, you will see the progressive bar and the newly found services underneath.



2-2. System Configuration

[ⓘ : Press MENU (MENU) > Setup > System]

Here you can find most of the necessary settings that you might need to optimize your Vu+ in the way you like it. Please read the followings carefully.

A. A/V Settings

[ⓘ : MENU (MENU) > Setup > System > A/V Settings]

Here you will find options necessary to set up the audio and video configuration of your Vu+.

NOTE : RED is for cancel and GREEN is OK. OK key of RCU is not working in this mode.

Amongst the parameters given in this menu, the following ones are generally what you need to decide for the audio and video.

① Video output

Here you need to decide which video output you want to use between your TV and Vu+.
The available options are as below.

- CVBS
- S-Video
- RGB

② Mode

You need to decide which resolution to use according to the video output above and your TV amongst the following options.

	Scart
Resolution	PAL NTSC Multi

③ Dolby Digital Default

YES is used when you want to set Dolby Digital audio as the default audio. If the program you are watching has Dolby Digital and Stereo, Dolby Digital is used.

On the other hand, *NO* is used when you do not want to set Dolby Digital audio as the default audio. If the program you are watching has Dolby Digital and Stereo audio, Stereo audio is used.

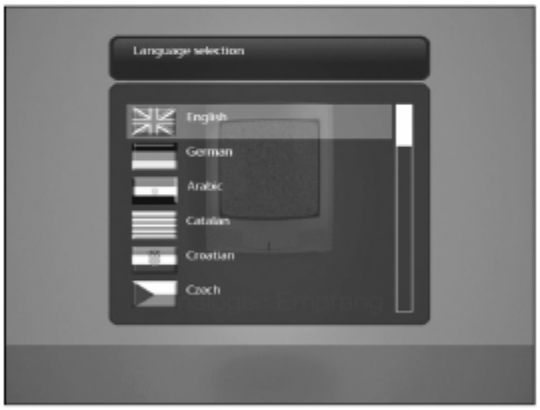
④ Dolby Digital Downmix

YES is used when you want to set the audio output to be down-mixed from Dolby Digital to Stereo. *NO* is used when you do not want to set the audio output to be down-mixed from Dolby Digital to Stereo. If *NO* is on and you are using only HDMI or SCART connection, there can be no audio sometimes, if the program that you are watching provides Dolby Digital only. This option is recommended when you are using S/PDIF connection.

B. Language Selection

[ⓘ : MENU (MENU) > Setup > System > Language]

A variety of languages are available for the OSD(On Screen Display) of Vu+.



C. Customization

[ⓘ : MENU (MENU) > Setup > System > Customize]

In this menu you will find various customization options and this menu can be displayed in three different formats: *Simple*, *Intermediate*, and *Expert*.

NOTE : RED is for cancel and GREEN is OK. OK key of RCU is not working in this mode.

Amongst the options given in this menu, the following ones are generally what you may need to know.

① Recording always have priority

YES option is used to set the recording to have a priority over any existing timer. If there occurs a conflict between a timer and a recording in progress, the recording has a priority over the timer. If you set this option at *NO*, you will be asked whether to switch to the service to record or not.

② Margin before record (minutes)

If you enter a number here, for example, 5, the recording will begin 5 minutes before the defined time. If it is "0", it means that the recording starts exactly at the defined time. This option comes in handy, just in case that a program starts earlier than the original schedule.

③ Margin after record

If you enter a number here, for example, 5, the recording will stop 5 minutes after the defined time. If it is "0", it means that the recording stops exactly at the defined time. This option comes in handy, just in case that a program ends later than the original schedule.

④ Show Message when Recording starts

If you set this option at *YES*, a message saying that a recording has started appears as below.

⑤ Enable multiple bouquets

If you set this option at *YES*, it will enable multiple bouquets.

D. Selecting Time Zone

[ⓘ : MENU (MENU) > Setup > System > Timezone]

You can set your time zone in this menu.

Using LEFT/RIGHT key, you can find a time zone that you want to use for your Vu+. After selecting a time zone, press GREEN to confirm and save the changed setting.

E. Hard Disk Set Up

[ⓘ : MENU (MENU) > Setup > System > Harddisk > Harddisk setup]

You can set the duration of time after which HDD is to be put into Idle Mode.

Here, you can choose from
- No Idle Mode
- 10 or 30 seconds
- 1, 2, 5,10, 20, 30 minutes
- 1, 2, 4 hours.

Once you set this option, press GREEN key to confirm the change.

F. Front Display Setup

[ⓘ : MENU (MENU) > Setup > System > Display Setup]

There is a 16 character dot matrix VFD display on the front panel of Vu+. This display shows various information like the current menu, channel, HD icon, and so on. You can adjust the brightness of this display using this menu.

• Brightness

You can change the brightness of the front VFD display using LEFT/RIGHT key when Vu+ is in use.

• Idle Server Mode

You can change the brightness of the front VFD display using LEFT/RIGHT key when Vu+ is in Idle Server Mode.

Once you completed this option, press GREEN key to confirm the change.

G. Network Setup

[ⓘ : MENU (MENU) > Setup > System > Network]

Vu+ is integrated with standard 10/100Mbps Ethernet with RJ 45 connector. You are recommended to use this network capability of Vu+ to fully enjoy the system. You can set up the network settings through this *Network Configuration* menu.

In the *Network Configuration* menu, you will see five sub menus as follows:

① Adapter settings

Through this menu, you can set the basic Ethernet configuration.

- User Interface

  YES is used to activate the Ethernet. If you set this option at *NO*, the Ethernet will not work.

- Use DHCP

  YES is used to use *DHCP (Dynamic Host Configuration Protocol)*. If you set this option at *YES*, it will automatically detect the correct IP address. *NO* is used when you want to use a certain fixed IP address. In this case, you need to enter correct addresses in each field.

② Nameserver settings

This option is required when you selected not to use DHCP. You need to enter the address of the Nameserver.

③ Network test

When you are not sure whether the network configuration has been done correctly or not, you can run this test.

④ Restart Network

This option is used when you want to reboot the Ethernet of your Vu+.

H. Skin

[ⓘ : MENU (MENU) > Setup > System > Skin]

Vu+ is a Linux based set top box and there are a lot of Skins available for Linux set top box. Using this menu, you can use a different Skin other than the default one.

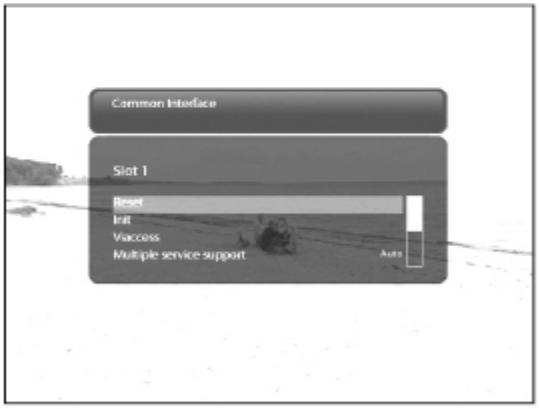
NOTE : It takes some minutes since the change of Skin requires a complete system shutdown. Please wait patiently until the system reboots with a newly selected Skin.

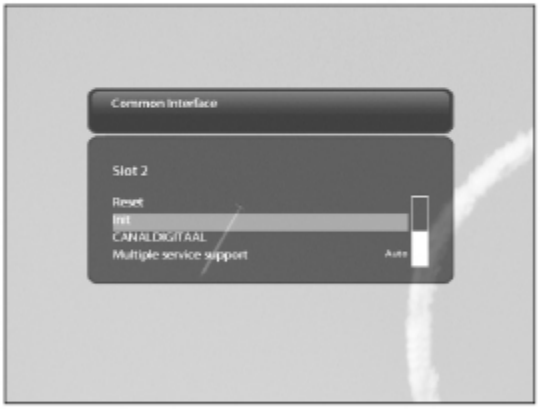
2-3. Checking CAM

[ⓘ : MENU (MENU) > Setup > Common Interface]

To be able to watch CAS channels, you need to have a proper CAM and a Smartcard. Vu+ is integrated with two Common Interface slots. If you have two CAM modules and keep them inserted in your Vu+, it will reduce the trouble of changing CAM. Please refer to the page 9~10.

If you have inserted one or two CAMs, you can check the information of the inserted CAMs, through this menu as below:





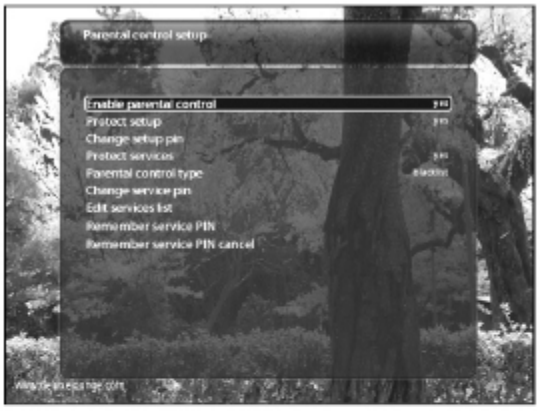
2-4. Parental Control

[ⓘ : MENU (MENU) > Setup > Parental Control]

If you want to prevent certain channels from being accessed by others, you can do so using this menu.

① Go to Parental Control menu by pressing MENU > Setup > Parental Control.

② Set the parental control option at *YES* using LEFT/RIGHT key. The menu will change as below.



• Protect setup
If you set this option at *YES*, you will be asked to enter PIN code when you enter this *Parental setup* menu.

• Change setup pin
If you want to change the existing PIN code for Parental setup, you can do so using this menu.

You need to enter a new PIN code twice.

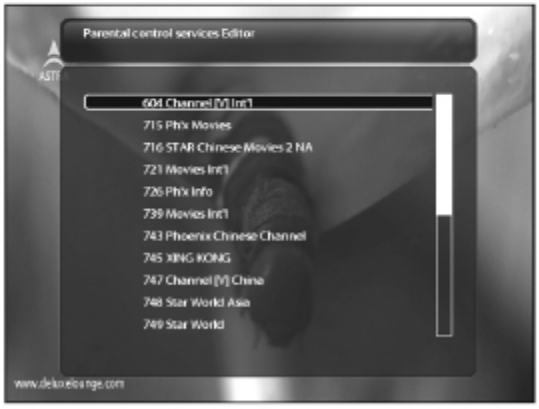
• Protect services
You need to set this option at *YES*, if you want to lock certain channels with PIN code.

• Parental control type
This option will be activated only when you set *Protect services* at *YES*. Here there are two options:
- *White list* : This option is used to block all channels except those channels in the parental control list.
- *Black list* : This option is used to block only those channels included in the parental control list.

• Change service pin
Here you can define a PIN code required to change services to be included in the parental control list.

NOTE: PIN code here is used for Change service and thus you are recommended to use a PIN code different from that used for *Protect services*.

• Edit service list
Here you can add services that you want to lock with PIN code. Services will be arranged in the alphabetical order and you can select an alphabet to enter into the list where you can find the channel that you want to lock.



Here, T is selected and TV5 is locked in the list as an example.

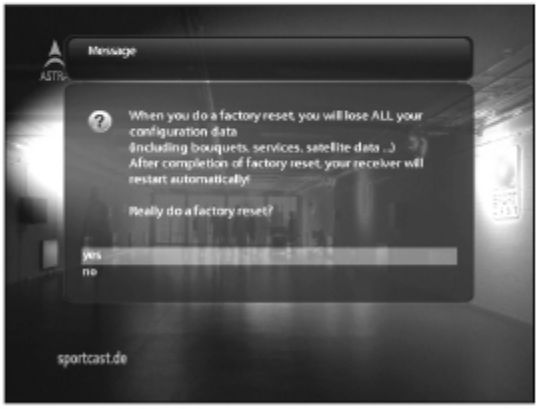
Next time when you or anyone else want to tune into this service, the menu asking for PIN code will appear instantly as below.

NOTE : It is very important not to lose this PIN code.

2-5. Factory Reset

[ⓘ : MENU (MENU) > Setup > Factory Reset]

If you want to erase all installed service list as well as all configurations, run the *Factory Reset* process. Select *YES* in the below menu to run the factory reset.



Upon the completion of factory reset process, your Vu+ will reboot automatically and start the *First Time Installation* process.

NOTE : If you do this factory reset, all of your configuration data including bouquets, service lists, satellite parameters, and so on will be erased.

2-6. Checking H/W & S/W Information

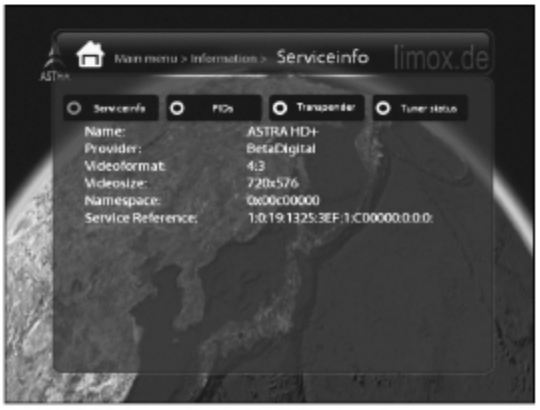
[ⓘ : MENU (MENU) > Information]

If you want to check the H/W or S/W system of your Vu+, this is the menu that you need to use. Also, here you can check very detailed information of a specific service.

A. Service Information

[ⓘ : MENU (MENU) > Information > Service]

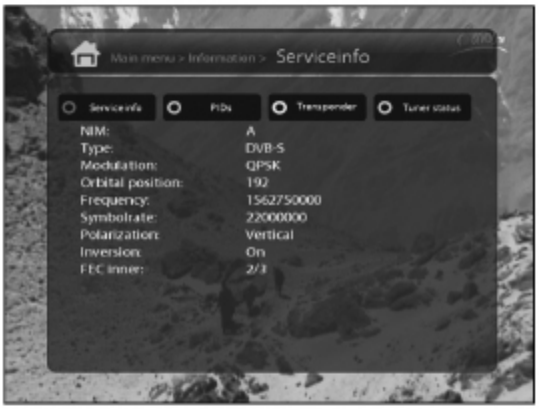
In this menu, you can see all the parameter data of the current channel. The service information is well arranged in four sections as below:



① Service info

② PIDs

③ Transponder



④ Tuner Status

B. System Information

[ⓘ : MENU (MENU) > Information > About]

This menu is for you to check the current system of your Vu+. You can see the following information:

① S/W version
② Detected NIMs for both Tuner A & B
③ Detected HDD

2-7. Remote Control Unit (RCU) Set-up

Vu+ RCU is a universal RCU that can be used for TV and STB at the same time.

A. User Guide of Vu+ Universal RCU

Pre-note

<< >> means long press
< > means normal press
4 digit code can be found in the TV brand code list of the user manual.

The new RCU of Vu+ is a universal type and you can control your Vu+ STB and TV at the same time. This universal RCU is a modeless design. While offering the basic control functions of your TV (TV Power, Volume +/-, Mute, AV), you can control STB without having to select mode between TV and STB every time. Compared to those universal RCU of mode selection types, the modeless universal RCU of Vu+ is clearly a smarter choice by eliminating unneeded control functions.

1. TV setting

Set-up Sequence: <<1 + 3>>, <4digit brand-code>, <<Mute or Power>>

1. Press number 1and 3 for three seconds until LED is on.
2. Find your TV brand-code from the TV code list and insert 4 digit code.
   - If you press "0000", Full Automatic Scan will start. This will take a while.
3. Keep pressing Mute button (or Power) until your TV is muted (or turned off)
4. If your TV is muted (or turned off), stop pressing Mute button.
5. Now, your RCU is in test mode and press Volume + /- to check if your TV responds.
6. If the volume buttons are operational, Press <OK + STOP ( )> to escape from the set-up mode.

2. AV setting

AV button is for the selection of TV video source. AV button may be automatically set up depending on TV models. In case it is not automatically configured, please follow the instructions below.

Set-up Sequence <<1 + 9>>, <<AV>>

1. Press 1 and 9 for three seconds until LED is turned on.
2. Keep pressing AV button until your TV responds and displays the video input source.
3. If AV button is working, check if AV button is properly working several times.
4. Press <OK + STOP ( )> to escape from the set-up mode.

3. RCU Buttons for TV

* Buttons for TV only: TV Power. AV
* Buttons switchable between TV and STB: Volume +/ - and Mute
  - These buttons are for STB only before the RCU set-up is done.
  - It is switchable only after the configuration is done.
* All the other buttons are for STB only

4. Mode Switch of Volume + / - and Mute

For the sake of easy volume control, please set the STB volume at 50% of the maximum level and set this level as the default volume level from STB. Then, you just have to control your TV volume only without having to adjust STB volume at the same time.

Set-up Sequence: <<1 + 6>>, <9>, <9>, <3>, <TV Power or STB Power>

1. Press 1and 6 for three seconds until LED is on.
2. Press <9>, <9>, <3>.
3. If you want to control of TV volume, press TV Power button. If you want to control STB volume, press STB Power button.

5. Reset of TV Set-up

In case you want to reset the configured TV set-up of your RCU,

Press Sequence: <<1 + 6>>, <9>, <9>, <6>

1. Press 1and 6 for three seconds until LED is on.
2. Press <9>, <9>, <6>.
3. This will reverse the RCU into no configuration state.

6. System Code Change.

You can change the system code of your Vu+ universal RCU according to the Vu+ model that you want to control. The default system code is Mode 2.

Mode 1 : SOLO / DUO
Mode 2 : UNO
Mode 3 & 4 : reserved for future models.

Press <<2 + 7>>, <HELP>, <0001 or 0002 or 0003 or 0004>

1. Press 2 and 7 for three seconds until LED is on.
2. Press HELP
3. Press <0001 or 0002 or 0003 or 0004>

DISCLAIMER

Vu+ universal remote controller (RCU) is developed with Philips Electronics. The database used in the Vu+ RCU supports more than 90% of the TV brands available on market. This means that your TV may not be compatible with this universal RCU in some rare cases. In this case, Vu+ RCU can be used only for Vu+ set top box.

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VI. Menu Structure

Main menu				
1st level	2nd level	3nd level	4nd level	5nd level
Subtitles	Subtitle selection Window			
Media player	Media Player			
Timer	Timer List			
VCR scart	Switch to VCR scart			
Information	Service	Service info		
	About	About		
Plugins	Plugin browser			
Setup	Service Searching	Tuner Configuration	Tuner A	
			Tuner B	
		Default Service lists		
		Automatic Scan	Service scan Window	
		Manual Scan	Service scan Window	
		Language	Language Selection Window	
		Customize	Customize Window	
		Timezone	Timezone Window	
		Harddisk	Harddisk setup	Harddisk setup
			Initialization	Initialization
			Filesystem Check	Filesystem Check
		A/V Settings	A/V Settings Window	
		Display Setup	Display Setup Window	
		Network	Network Configuration Window	
		Keyboard	Keyboard Setup Window	
		Skin		
	Common Interface			
	Parental control	Parental control setup		
	Default settings			
	Factory reset			
Standby / Restart	Sleep Timer			
	Idle Server Mode			
	Restart			
	Standby			

VII. Troubleshooting

Before you contact your local service center, please read the following tips carefully.

NOTE : if the antenna is covered with snow or the RF signal is weakened by heavy rain, the quality of audio and video may become temporarily poor. If you experience poor audio and video quality due to bad weather conditions, please check if your satellite antenna is oriented in the original direction. And see if it is covered by snow. Also, check if your LNB is not damaged.

1. No video on TV

- Check first if the product is powered on and in operation mode.
- Check if the video cable is properly connected between TV and Vu+.
- Check if the satellite cable is properly connected to Vu+.
- Check if the selected channel is currently on air.
- Check if the selected channel is encrypted and if you have a corresponding access smartcard.

2. Problem with audio quality

- Check if your audio cable is connected correctly.
- Check the volume level of your TV and Vu+.
- Check if Vu+ or TV is on mute.
- Check the audio option if it is correctly selected for the program that you are currently watching.

3. Remote control problem

- Check if the batteries are correctly mounted.
- If your remote control has been used for long, change the batteries.
- Point the remote control directly toward Vu+.
- Make sure that nothing blocks the front panel display.

4. Channel search problem

- Make sure if tuner configurations are all correctly made.
- Check if the antenna cable(s) are properly connected.

5. Encrypted channel viewing problem

- Check if you have the appropriate Smartcard and/or CAM.
- Take the Smartcard and CAM out and re-insert them to re-initialize.
- Check if your system correctly detects the smartcard and CAM.

6. Recording problem

- Check if the HDD has a sufficient space for recording.
- Check if there is a conflict between recording timer.

7. Noise

- Vu+ has an integrated FAN. This may create a noise but is inevitable to make sure the safety of the product.
- Also, when HDD is running, you may hear a noise.

VIII. Glossary

8PSK	8-PSK is usually the highest order PSK constellation deployed. With more than 8 phases, the error-rate becomes too high and there are better, though more complex, modulations available such as quadrature amplitude modulation (QAM). Although any number of phases may be used, the fact that the constellation must usually deal with binary data means that the number of symbols is usually a power of 2 — this allows an equal number of bits-per-symbol.
CAM	Conditional Access Module is an electronic device, usually incorporating a slot for a smart card, which equips an Integrated Digital Television or set-top box with the appropriate hardware facility to view conditional access content that has been encrypted using a conditional access system. They are normally used with direct broadcast satellite (DBS) services.
Composite Video	Composite video is the format of an analog television (picture only) signal before it is combined with a sound signal and modulated onto an RF carrier. Composite video is often designated by the CVBS acronym, meaning "Color, Video, Blank and Sync". In German (with PAL being a German invention by Telefunken's Walter Bruch) the abbreviation FBAS (Farbe-Bild-Austastung-Synchron) means the same. It is usually in standard formats such as NTSC, PAL, and SECAM. It is a composite of three source signals called Y, U and V (together referred to as YUV) with sync pulses. Y represents the brightness or luminance of the picture and includes synchronizing pulses, so that by itself it could be displayed as a monochrome picture. U and V represent hue and saturation or chrominance; between them they carry the color information. They are first modulated on two orthogonal phases of a color carrier signal to form a signal called the chrominance. Y and UV are then combined. Since Y is a baseband signal and UV has been mixed with a carrier, this addition is equivalent to frequency-division multiplexing.
Conax	One of the Conditional Access Systems by Conax, based in Oslo, Norway.
Conditional Access System	Several companies provide competing Conditional Access Systems; Irdeto Access, Nagravision, Conax, Viaccess, Verimatrix and NDS are among the most commonly used CAS systems.
DiSEqC	Stands for Digital Satellite Equipment Control. It is a special communication protocol for use between a satellite receiver and a device such as a multi-dish switch or a small dish antenna rotor. DiSEqC was developed by European satellite provider Eutelsat, which now acts as the standards agency for the protocol.
Dolby Digital	Dolby Digital is the common version containing up to six discrete channels of sound. The most elaborate mode in common usage involves five channels for normal-range speakers (20 Hz – 20,000 Hz) (right front, center, left front, right rear and left rear) and one channel (20 Hz – 120 Hz allotted audio) for the subwoofer driven low-frequency effects. Mono and stereo modes are also supported. Dolby Digitalsupports audio sample-rates up to 48 kHz. * Dolby Digital * □□D (an abbreviation for Dolby Digital, often combined with channel count; for instance, □□D 2.0, □□D 5.1)

EPG	Electronic Program Guide is a digital guide to scheduled broadcast television or radio programs, typically displayed on-screen with functions allowing a viewer to navigate, select, and discover content by time, title, channel, genre, etc. by use of their remote control, a keyboard, or other input devices such as a phone keypad. Content can also be scheduled for future recording by a personal video recorder (PVR). The on-screen information may be delivered by a dedicated channel or assembled by the receiving equipment from information sent by each program channel.
eSATA	A variant of SATA meant for external connectivity with the following characteristics: * Minimum transmit potential: Range is 500–600 mV. * Minimum receive potential: Range is 240–600 mV. * Identical protocol and logical signaling (link/transport-layer and above), allowing native SATA devices to be deployed in external enclosures with minimal modification.
FEC	Stands for Forward Error Correction. This is a system of error control for data transmission, whereby the sender adds redundant data to its messages, also known as an error-correction code. This allows the receiver to detect and correct errors (within some bound) without the need to ask the sender for additional data. The advantages of forward error correction are that a back-channel is not required and retransmission of data can often be avoided (at the cost of higher bandwidth requirements, on average).
HDMI	Stands for High-Definition Multimedia Interface. It is a compact audio/video interface for transmitting uncompressed digital data. HDMI connects digital audio/video sources—such as set-top boxes, Blu-ray Disc players, personal computers (PCs), video game consoles (such as the PlayStation 3 and some models of Xbox 360), and AV receivers—to compatible digital audio devices, computer monitors, and digital televisions. As an uncompressed connection, HDMI is independent of the various digital television standards used by individual devices, such as ATSC and DVB, as these are encapsulations of compressed MPEG video streams (which can be decoded and output as an uncompressed video stream on HDMI).
LNB	Stands for Low-Noise Block converter. This is the (receiving, or downlink) antenna of what is commonly called the parabolic satellite dish commonly used for satellite TV reception. The LNB is usually fixed on or in the satellite dish. The purpose of the LNB is to take a wide block (or band) of relatively high frequencies, amplify and convert them to similar signals carried at a much lower frequency (called intermediate frequency or IF). These lower frequencies travel through cables with much less attenuation of the signal, so there is much more signal left on the satellite receiver end of the cable. It is also much easier and cheaper to design electronic circuits to operate at these lower frequencies, rather than the very high frequencies of satellite transmission.
PID	Stands for Packet Identifier. This is a set of numbers identifying stream packets contained within a single data stream
Polarization	The orientation of the electrical and magnetic fields of a signal. Satellites use mainly vertical and horizontal polarization.

S/PDIF	Stands for Sony/Philips Digital Interconnect Format. A common use for the S/PDIF interface is to carry compressed digital audio as defined by the standard IEC 61937. This mode is used to connect the output of a DVD player to a home theater receiver that supports Dolby Digital or DTS surround sound. Another common use is to carry uncompressed digital audio from a CD player to a receiver. This specification also allows for the coupling of personal computer digital sound (if equipped) via optical or coax to Dolby Digital or DTS capable receivers.
SCART	A French-originated standard and associated 21-pin connector for connecting audio-visual (AV) equipment together. SCART is one of the most common method of connecting audio-visual equipment together. However, transferring analogue standard-definition content, SCART is becoming obsolete with the introduction of new digital standards such as HDMI, which can also carry high-definition content and multichannel audio.
Smartcard	A pocket-sized card with embedded Integrated Circuits which can process data. It can receive input which is processed and delivered as an output. The card may embed a hologram to avoid counterfeiting. It is used for accessing encrypted TV channels or services.
Teletext	A television information retrieval service developed in the United Kingdom in the early 1970s. It offers a range of text-based information, typically including national, international and sporting news, weather and TV schedules. Subtitle (or closed captioning) information is also transmitted in the teletext signal, typically on page 888 or 777.
Xcrypt	One of the Conditional Access Systems by Xcrypt.
YPbPr	A color space used in video electronics, in particular in reference to component video cables. YPbPr is the analog version of the YCBCR color space; the two are numerically equivalent, but YPBPR is designed for use in analog systems whereas YCBCR is intended for digital video.YPbPr is commonly called "component video", but this is a misnomer, as there are many other types of component video (mostly RGB with sync either on green or one or two separate signals). YPbPr is converted from the RGB video signal, which is split into three components, Y, PB, and PR. * Y carries luma (brightness) and sync information. * PB carries the difference between blue and luma (B - Y). * PR carries the difference between red and luma (R - Y). Sending a green signal would be redundant, as it can be derived using the blue, red and luma information.