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Chapter 1 Introduction

Thank you for purchasing the PX-TUAN-02. This is an advanced multi-standard (PAL/SECAM) Analogue TV Receiver/Tuner with integrated Stereo (NICAM/A2) and Teletext decoder. It was designed and manufactured based on the **PERFECT** * principle and offers the highest possible picture quality due to its digital processing of Video and Teletext signals. Besides Composite Video and S-Video, it has a Component (YCbCr) output, which is designed for NEC Plasma Displays.

For a very easy installation and operation the tuner has several unique features like, Auto Detection of Video/Audio standard, Automatic Channel Installation (ACI**), Advanced Channel Name Detection and Fastext. The tuner is supplied with all required adapter cables. Additional (TV) Monitor OUT and (external) Video IN ports enable simultaneous display of TV Video/TV Teletext and TV Video/external Teletext*** on NEC Displays enabling split screen function.

For people with hearing problems, the PX-TUAN-02 has the facility to overlay the Video with Teletext subtitles for simple recording on any standard VCR/DVR.

No additional hardware or software required. No need to learn complicated set-up procedures. Just plug and play!

* The **PERFECT** principle is based on the following keywords:

Performance

Outstanding performance by sophisticated design and "state-of-the-art" components.

Easy to install

The product is supplied with all required accessories and auto-detects all relevant technical parameters in different applications.

Reliability

Long-term reliability through the use of first class components and 100% inspection.

Features

Extensive features make the product multi-purpose.

Easy to operate

Software structure and operation is user friendly and "granny-proof"

Customer satisfaction

Product meets or exceeds customer's expectations.

Technology

Latest technology and smart design ensure that the product outperforms existing products on the market.

** ACI offers very fast and fully automatic channel installation and labelling by means of a unique Teletext code provided by cable operators.

*** In case the Teletext information is available in the Vertical Blanking Interval (VBI) lines.

1.1 Important Notices

Please use the PX-TUAN-02 under a normal environment.

1. Avoid the following circumstances:

- Exposure to direct sunlight or high temperatures
- Exposure to moisture or high humidity
- Positioning in unstable places

2. Do not attempt any repair yourself, since the warranty does not cover repair or attempted repair by unauthorized personnel.

3. Unplug this product from AC outlet and remove batteries from the IR remote control when left unused for a long time.

1.2 Product Functions

- Easy to install due to: pre-programmed channel table, auto-detection of TV and Audio system, ACI and channel name detection from Teletext.
- Supports PAL-BG, PAL-I , PAL-DK , SECAM-L and SECAM-DK (each with its own pre-programmed channel table).
- Advanced automatic scan will detect all channels in 45-862 MHz range.
- Teletext decoder, with Fasttext, 10 page memory and detection of unused pages.
- Teletext decoder supports Pan-European, Cyrillic and Arabic characters.
- Decodes Teletext from C-Video IN signals (if Teletext is available in VBI lines).
- Stereo Audio decoder for German A2 (Zweiton) and NICAM 728.
- Master tune and fine-tune per channel (individual storage per channel).
- On screen display in several European languages.
- Accepts PAL,SECAM and NTSC signals at the Video Input.
- Direct access keys for most functions.
- NEC Plasma Display functions are supported by the remote control (dual function).
- Digital video processing and S-Video/Component outputs for highest picture quality.
- Simultaneous display of Video and Teletext (split -screen NEC Plasma Displays only).
- Returns to last TV channel after power failure.

1.3 Package Contents

As you unpack the product, please make sure the following items were included. If any of these items are missing, call your local dealer.

1. Main body.....x1
2. Bracket.....x1
3. Accessories kit..... x1
4. A/V cable (Yellow, Red, White).....x1
5. YCbCr cable (Green, Blue, Red)..... x1
6. Audio cable (Red, White) x1
7. S-Video cable..... x1
8. RF cable.....x1
9. Power cable (Y-type to be used with the display power cable).....x1
10. Control cable.....x1
11. AAA batteries.....x2
12. IR remote control.....x1
13. User Manual.....x1

1. Main body



2. Bracket



3. Accessories kit



4. A/V cable



5. YCbCr cable



6. Audio cable



7. S-Video cable



8. RF cable



9. Y-shaped power cable



10. Control cable



11. AAA batteries



12. IR remote control



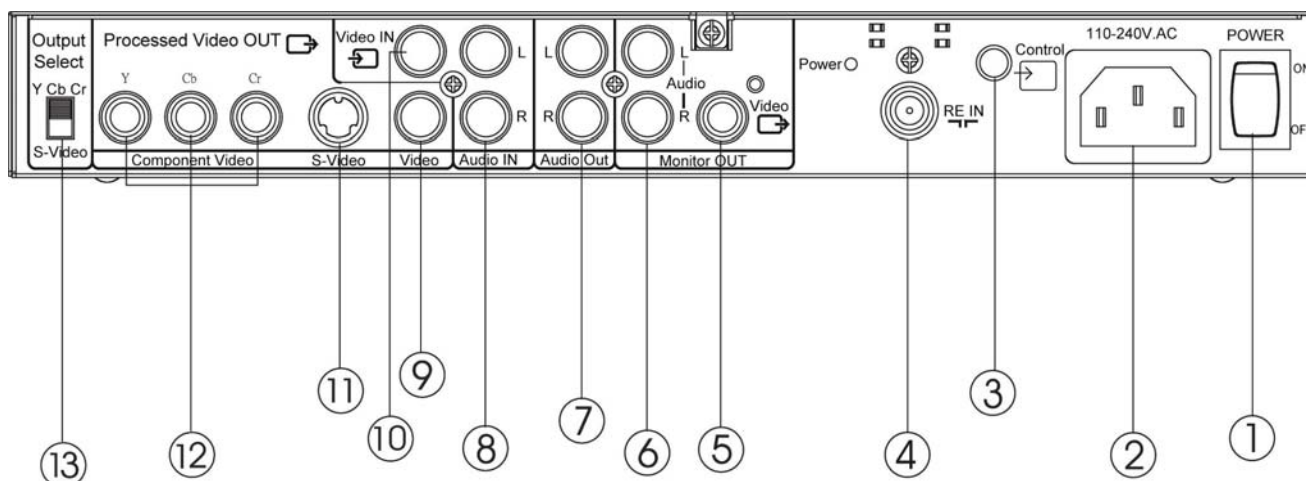
13. User manual



Chapter 2 Installation

2.1 Product Overview

2.1.1 Rear View of Main Body



① POWER ON/OFF

Use the power switch to select power ON or OFF.

② POWER IN

Connect one of the outputs of the supplied special power cable adapter (Y- type) to this input. The other output of the power cable adapter should be connected to the display's power input. The original power cord of the display should be connected to the input of the power cable adapter.

③ CONTROL connector

Connect Control cable jack to the tuners CONTROL connector and Control cable RS-232 plug to RS-232 input of the Monitor.

④ RF IN

Connect the RF coaxial cable from your Cable TV network or terrestrial antenna.

⑤ Monitor OUT – Video (*unprocessed "raw" Video*)

This output always provides the video picture from the actual tuned TV channel. It can be used to monitor the TV picture irrespective of the mode of the processed video outputs. This enables you to have a simultaneous display of TV picture and Teletext for use with NEC Plasma Display models with split screen function. This output signal is not controlled by the video settings of the tuner's processed Video outputs but is processed solely through the superior 3D Video decoder integrated in the NEC Monitor Display, resulting in an outstanding TV picture.

⑥ Monitor OUT – Audio L+R

Provides always the L/R decoded audio signal from the tuner.
The Audio signal is not controlled by the Audio settings of the processed audio outputs.

⑦ Audio OUT

Provides the L/R decoded audio signal from tuner or an external source.
Connect with the audio inputs of your display or audio amplifier.

⑧ Audio IN

Connect with the audio output of an external source.

⑨ Processed Composite Video OUT

Connect with the Composite Video input of your NEC Plasma Display. This output provides digitally processed video or Teletext signal from the TV tuner or external Video Input source. This output has lowest picture quality, in particular for Teletext signals.

⑩ Video IN

Connect with the Video output of an external source.

⑪ Processed S-Video OUT

This output has same function as the Composite output but with higher quality.

⑫ Processed Component Video OUT

This output has same function as Processed Composite Video/S-Video output but with higher quality, in particular for Teletext signals. To maintain the high quality, always use the correct type of cable (with green/blue/red connectors).
Don't use A/V cables (with yellow/red/white connectors).

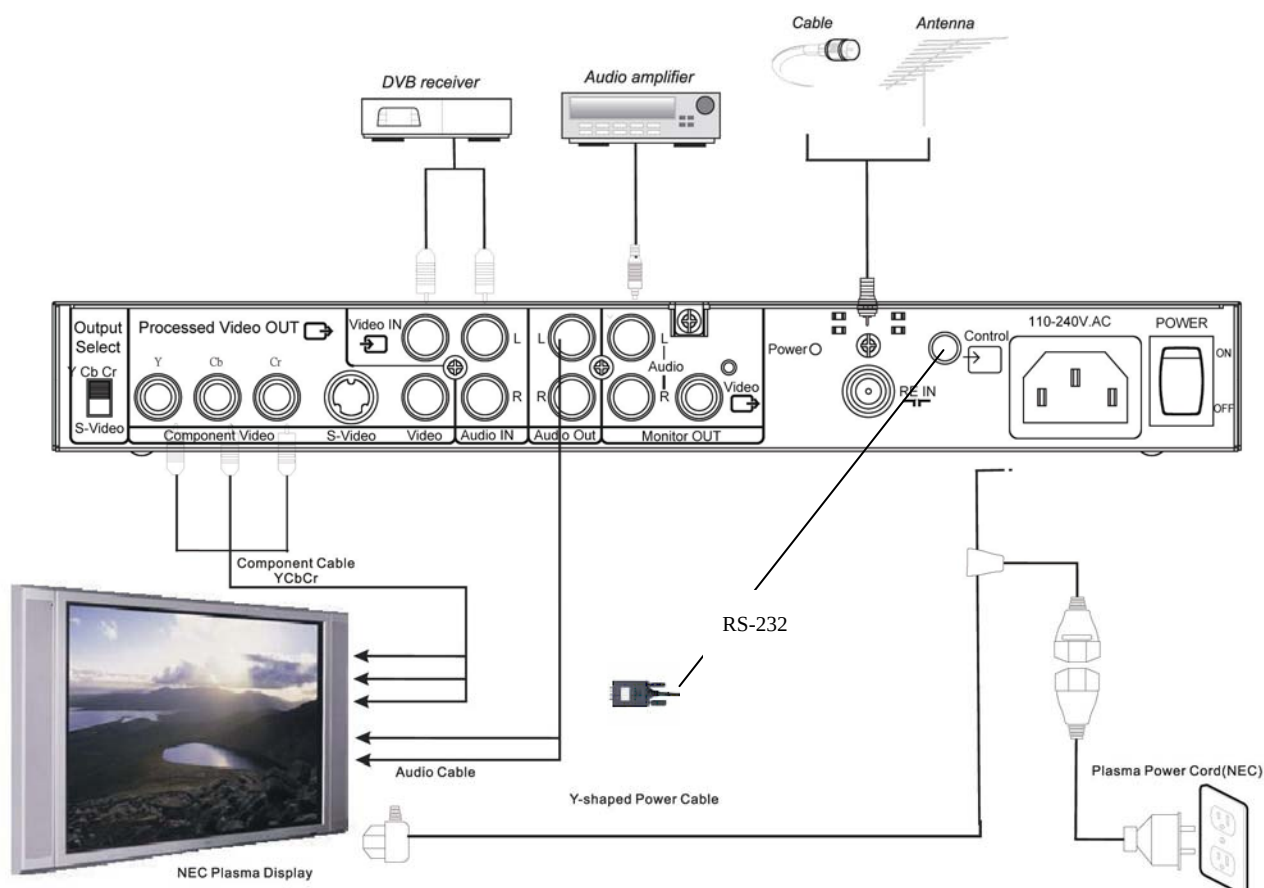
⑬ Output Select

Select the required output format, either YCbCr or S-Video. It is recommended to use the YCbCr mode.

2.2 System Installation

2.2.1 Standard Connection

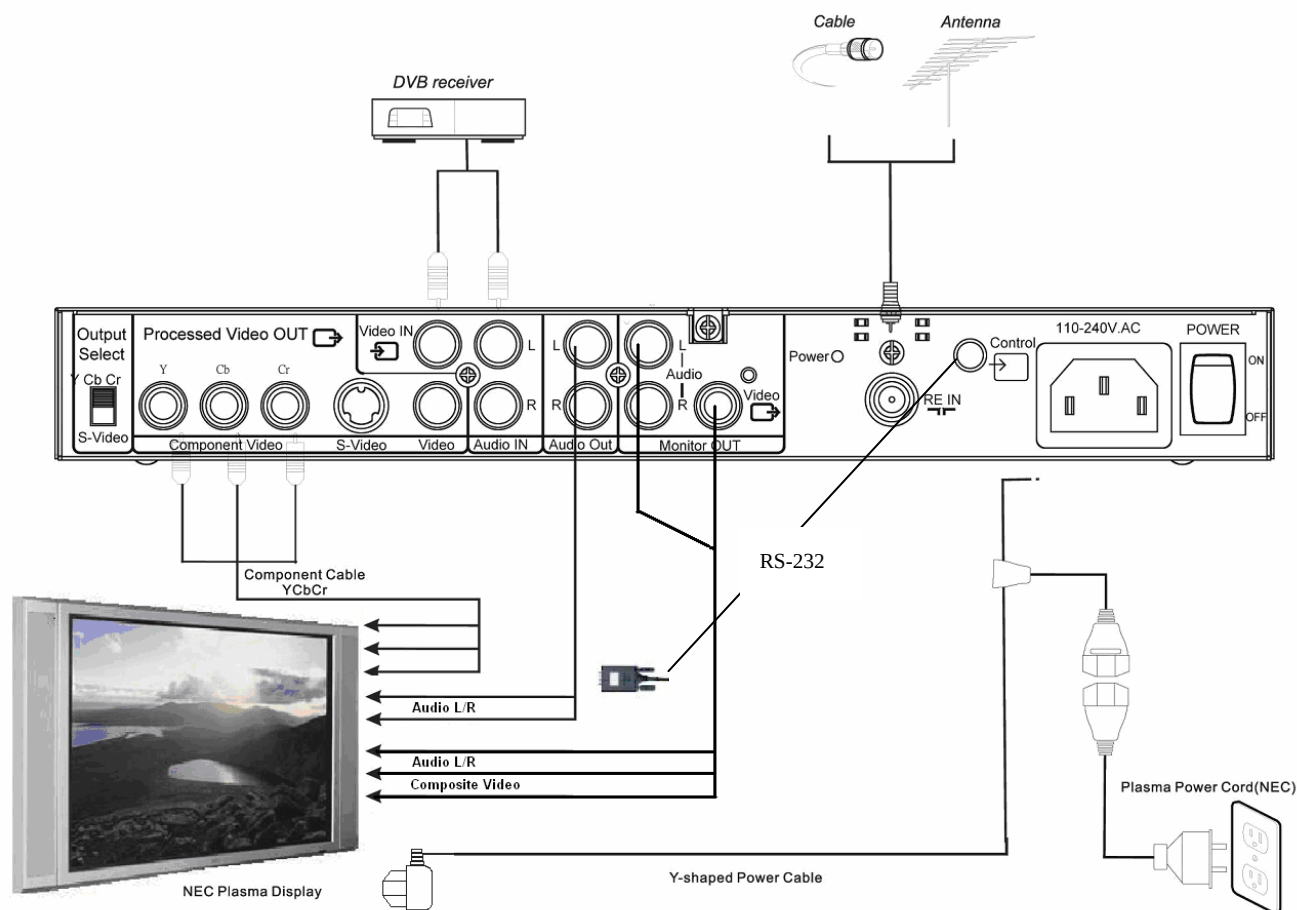
Please refer to the example closest to your configuration



Please turn off the power of all devices before connection!

2.2.2 Extended Connection for Split Screen Display

Please refer to the example closest to your configuration



Please turn off the power of all devices before connection !

2.2.3 Audio/Video

For audio connection, use the Audio L+R connectors (RCA, white+red).

Connect the "Audio OUT" to the "Audio INPUT" of the NEC Plasma Display.

Make sure that the used Audio INPUT is linked with the used Video INPUT (double check in NEC "AUDIO" settings menu)

For video connection use the YCbCr (RCA, green+blue+red) cable.

Connect the YCbCr OUTPUT of the tuner box with the YCbCr (DVI/HD) INPUT of the NEC Plasma Display (please double check that switch of the tuner box is in YCbCr mode).

If for whatever reason you can't use the YCbCr INPUT of your NEC Plasma Display, you may use the processed S-Video or Composite connection.

The MONITOR Video Output of the tuner will only display the actual received TV channel.

This output has no OSD (On Screen Display) information and no Teletext.

2.2.4 Antenna

It's important to use high quality coaxial cable and connectors (with a high screening of more than 60dB as supplied in the package).

A lower quality coaxial cable and connectors can cause serious picture quality problems due to interference and/or reflections!

3.1 Initial Settings

The PX-TUAN-02 has been designed to comply with the plug and play principle. It's very easy to set up due to several smart and unique features. If you are connected to a cable network (providing ACI information) the tuner will automatically recognize the ACI information during scanning and program the tuner according to the list as provided by the cable operator. If no ACI information is available, the tuner will detect most channel names from Teletext information, if available, and copy them into the channel label table.

Remark:

For your convenience the Tuner remote control unit has double functions (NEC Plasma Display + Tuner mode). In the initial setting procedure we recommend to use your actual NEC remote control to operate the display and to use the Tuner remote control only to operate the Tuner. After setting up has been successfully completed you may find it more convenient to operate your NEC display with the Tuner remote control.

After having made the connections, as described in 2.2, follow the following steps:

- 1- Install the supplied AAA batteries into remote control.
- 2- Make sure the power main switch on the tuner box is in "ON" position.
Press the "ON" key on the remote control. Both Display and Tuner are operated by this command (be sure that power LED of Display and Tuner are both "Green")
- 3- Select the appropriate Input of your NEC display and this will display the blue background picture generated by the PX-TUAN-02.
- 4- Press "Tuner" key on the remote control. On the blue screen the text "Tuner" will appear.
If this is NOT the case, don't go to next point but double check all previous steps.
- 5- The default OSD language is English. If this is your desired language go to the next point.
If you prefer another language, press the Yellow key on the remote control and select desired language from the OSD it with "▲" or "▼" key and confirm with pressing the "OK" key.
- 6- The default TV system is PAL BG (for most of continental Europe). If this is OK go to next point.
If your TV system is PAL-I (UK, Ireland) or SECAM (France and other countries), press the BLUE key and select desired standard with "▲" or "▼" key and confirm with the "OK" key. The tuner will automatically change the A/V settings (for ALL channels) and load the correct programmed channel table (see section 5.3).

If you receive more than one TV system, don't worry. The PX-TUAN-02 has intelligent TV system detection software and will store each channel with the correct A/V settings during channel scan.

-7- Press Channel "+" or "-" key, or select a channel number from table in section 5.3 matching one of your locally received TV channels, to check if all settings and connections are OK.

-8- Press "Menu" key and go via "SETTING UP" >> "CHANNEL" to >> "AUTOSCAN" menu.

If the PX-TUAN-02 is connected to a cable network, your cable operator might provide an ACI (Automatic Channel Installation) signal on one of the TV channels.

In this case follow step 8.1 or 8.2.

If you are sure there is no ACI information on any of the received TV channels, e.g. when PX-TUAN-02 connected to a roof antenna, follow step 8.3

-8.1- If you know on which TV channel the ACI information is available (most of the time the info channel of the cable operator) select this TV channel with the help of the channel table in section 5.3 and select "SCAN: ACI ON" and confirm with OK.

A "Warning" message will appear, confirm again with OK.

The PX-TUAN-02 will now immediately detect the ACI information and load this into the CHANNEL TABLE. This will take less than 1 minute.

After a successful installation, the PX-TUAN-02 is programmed with all channels and channel names according to the cable operator's provided ACI list!

No hassle, just plug and play.

-8.2- If you are not sure if your cable operator provides an ACI signal, or don't know the channel number with the ACI information, select "SCAN:ACI ON" and confirm with OK (this can be done on any channel). A "Warning" message will appear, confirm again with OK.

The PX-TUAN-02 will start to scan all channels and check on each channel if the ACI information is available. If found, the result will be same as 8.1. , if not, the result will be same as 8.3. It will take about 5 minutes to scan all frequencies. The display will keep you informed about the number of channels that are already stored.

-8.3- If you are sure there is no ACI available (or you want to ignore the ACI information deliberately) select "SCAN: ACI OFF" and confirm with OK. A "Warning" message will appear, confirm again with OK. During scanning the intelligent Autoscanner system of the PX-TUAN-02 will decode for each received channel, the channel name transmitted in the Teletext information (if available) and load it into the channel table.

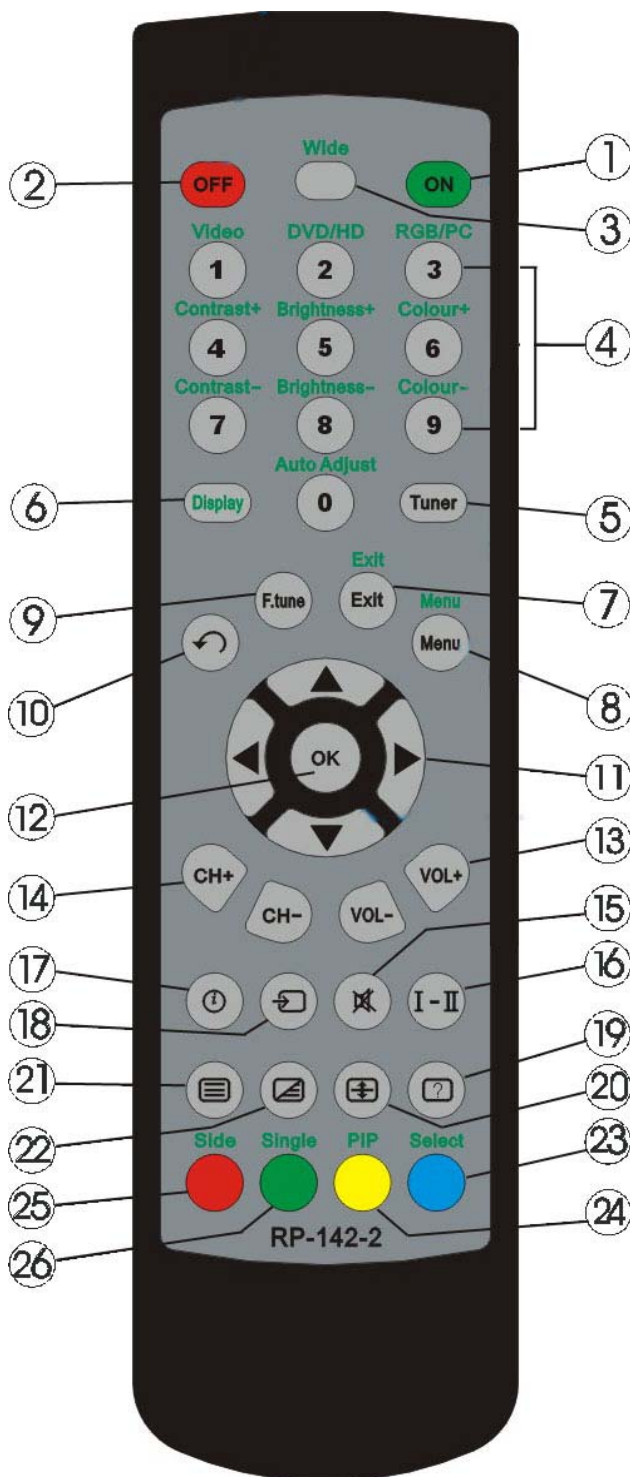
It will take about 5 minutes to scan all frequencies.

To complete all channel names and put all channels into the right sequence please follow the instructions in 4.2.3.2 and 4.2.3.3.

3.2 IR Remote Control – Tuner related functions

(active after pressing “Tuner” key)

Only the functions relating to Tuner mode, printed in black on remote control, are described below. For functions relating to NEC Plasma Display mode, refer to chapter 3.3



① ON

Press to switch ON the display as well as tuner box

② OFF

Press to switch OFF the display as well as tuner box

④ 0~9 Number Keys

Used to select TV channels or TTX page

⑤ Tuner

Press to activate Tuner mode

⑥ Display

Press to activate Display mode

⑦ Exit

Exit the current menu selection and return to the previous menu.

⑧ Menu

Select the main OSD (On Screen Display) menu.

⑨ F.tune

Finetune the frequency of the actual channel. The adjustment will be stored for each individual channel.

⑩ Recall

Return to the previously selected channel.

⑪ ◀ ▶

Adjust selected function



Select the desired item on menu, or channels/TTX page up or down

⑫ OK

Confirm the highlighted item in menu.

⑬ Volume +/-

Adjust the volume.

⑭ Channel +/-

Select channels up or down.

⑮ Mute

Turn the sound On/Off.

⑯ Audio

Will first display the actual mode. By pressing again you can toggle between Stereo, Language 1, Language 2, and Mono.

⑰ Info

Channel Number, Channel Name, actual selected Audio Mode, and Video Standard will be displayed for a few seconds and after that the Time. Press key again to delete Time.

⑱ Source

Select between Tuner and External Video source connected to the Tuner input.

⑲ Reveal / Stop

Display the hidden text (if available) in TTX page and deactivate TTX (page counter will stop). Press again to activate TTX again.

⑳ Double Height

Display half of TTX page in double height

㉑ Teletext (TTX)

Open Teletext mode. Press this button again to exit.

㉒ Mix

Press to display TTX together with broadcast picture or overlay with subtitles.

㉓ Blue Key

Tuner TV mode: Will open the TV-SYSTEM sub-menu

Tuner TTX mode: Selects the Blue coloured Fastext page at the bottom of the TTX page

㉔ Yellow Key

Tuner TV mode: Will open the LANGUAGE sub-menu

Tuner TTX mode: Selects the Yellow coloured Fastext page at the bottom of the TTX page

㉕ Red Key

Tuner TTX mode: Selects the Red coloured Fastext page at the bottom of the TTX page

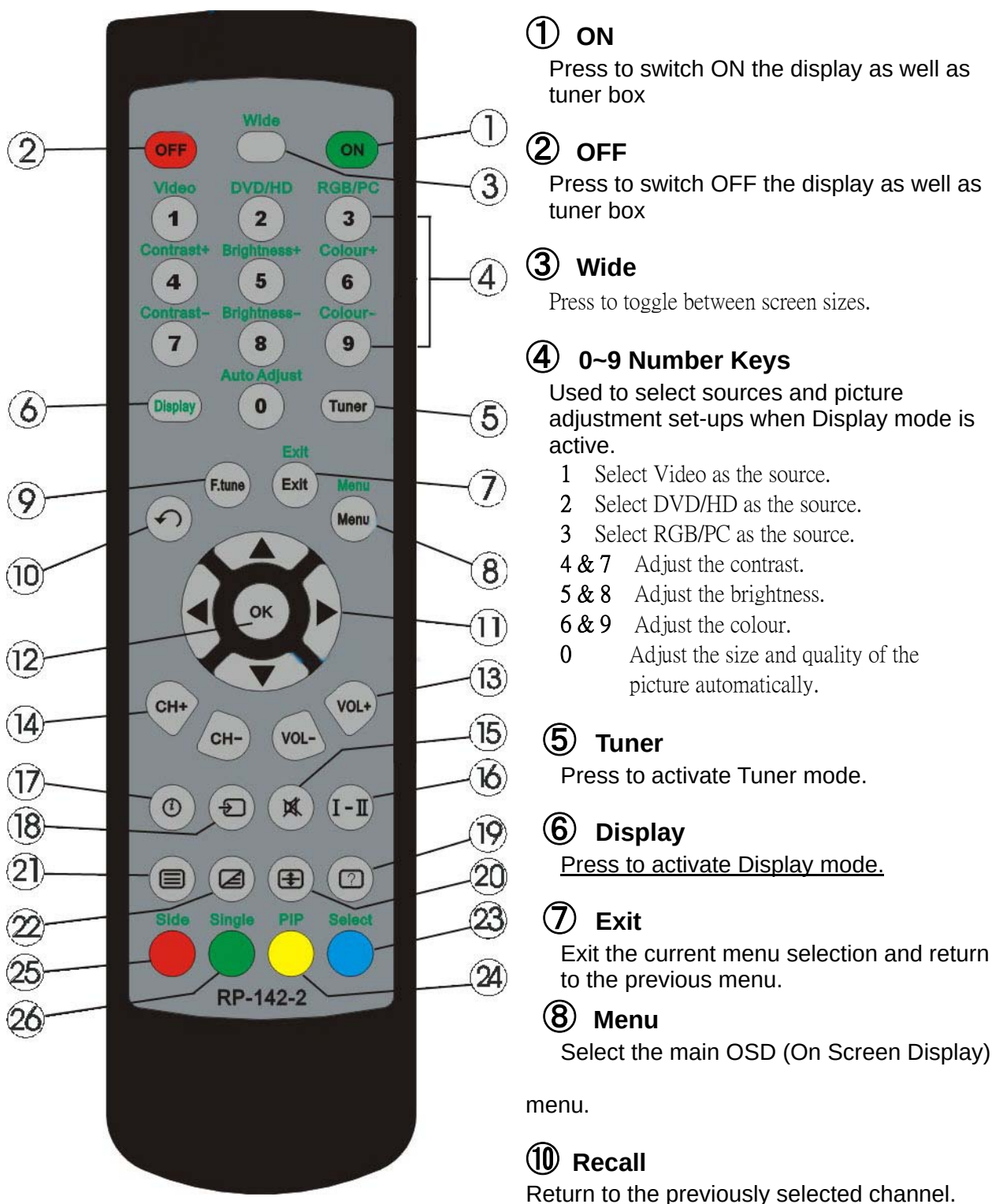
㉖ Green Key

Tuner TTX mode: Selects the Green coloured Fastext page at the bottom of the TTX page

3.3 IR Remote Control – Functions in Display mode

(active after pressing “Display” key)

In this mode the green printed Display functions will be active, together with the Tuner functions described below.



▲ ▼ Select the desired item on menu.

⑫ OK

Confirm the highlighted item in menu.

⑬ Volume +/-

Adjust the volume.

⑭ Channel +/-

Select channels up or down

⑮ Mute

Turn the sound On/Off.

⑯ Audio

Will first display the actual mode. By pressing again you can toggle between Stereo, Language 1, Language 2, and Mono.

⑰ Info

Channel Number, Channel Name, actual selected Audio Mode, and Video Standard will be displayed for a few seconds and after that the Time. Press key again to delete Time.

⑱ Source

Select between Tuner and External Video source connected to the Tuner input

⑲ Select *

⑳ PIP *

㉑ Single*

㉒ Side *

* This function operates only with such NEC Plasma Displays which support it.
Please consult the manual of your NEC Display.

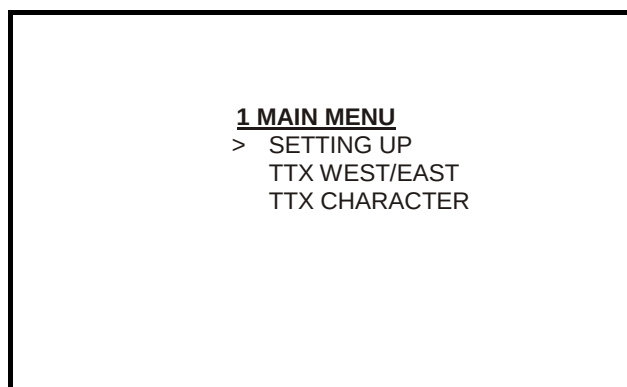
General operation

If you press the "Display" key the green printed functions will be active (not described here).
If you press the "Tuner" key the black printed functions will be active (described below).

- ① Press "▲" or "▼" key to select item and "OK" key to open the selected item.
- ② Press "◀" or "▶" button to adjust the selected item.
- ③ Press "Exit" button to return to the previous menu.

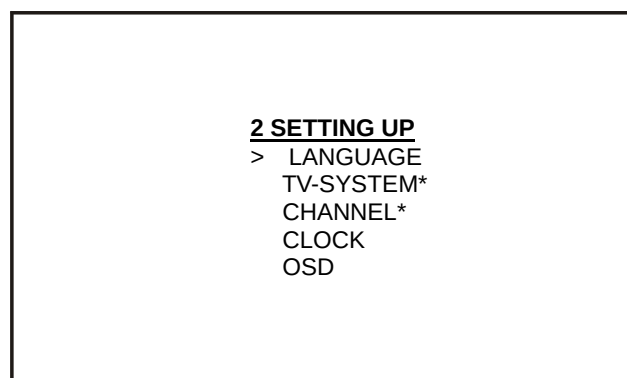
4.1 MAIN MENU

Press "Menu" button to open the MAIN MENU.



4.2 SETTING UP

SETTING UP sub-menu provides options for LANGUAGE, TV-SYSTEM, CHANNEL, CLOCK, and OSD.



Select required subject and confirm with OK key.

* not active in C-Video In mode.

4.2.1 LANGUAGE

LANGUAGE sub-menu provides options for ENGLISH, SVENSKA, DEUTSCH, ITALIANO, FRANCAIS, ESPANOL, NEDERLANDS and TURKCE.



Select the required language and confirm with OK key.

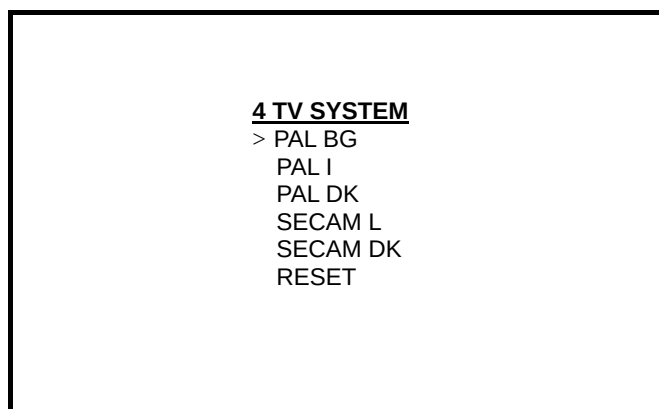
4.2.2 TV SYSTEM

TV SYSTEM sub-menu provides options for PAL BG, PAL I, PAL DK, SECAM L, SECAM DK and RESET.

If you select another TV SYSTEM in the default mode (before AUTOSCAN has been applied) the settings for ALL channels will be changed and the corresponding channel table will be loaded into the CHANNEL TABLE. In case an AUTOSCAN has been applied, the TV SYSTEM setting will ONLY change the settings of the actual channel.

The RESET function will restore factory default settings (PAL- BG)

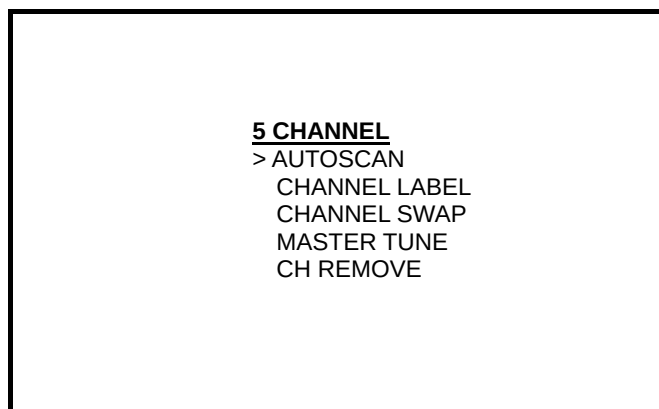
ALL THE PREVIOUSLY STORED CHANNEL INFORMATION WILL BE DELETED AND REPLACED BY THE DEFAULT SETTINGS. Confirm with OK or EXIT.



Select the required TV system and confirm with OK key.

4.2.3 CHANNEL Settings

CHANNEL sub-menu provides service for AUTOSCAN, CHANNEL LABEL, CHANNEL SWAP, MASTER TUNE and CH REMOVE.



Select the required subject and confirm with “OK” key.

① AUTOSCAN:

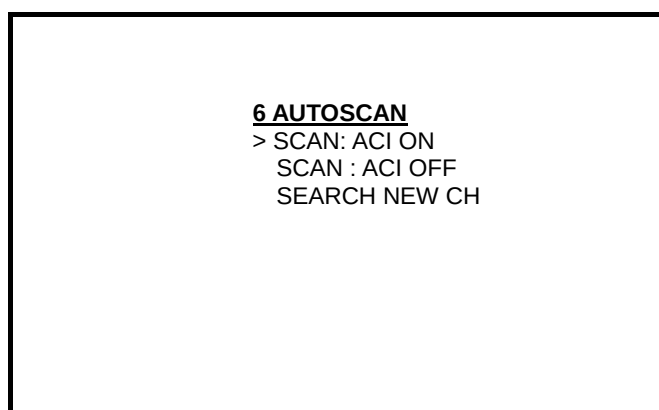
Normally SCAN: ACI ON should be used.

The PX-TUAN-02 will, during scanning, search for the ACI signal (only available on larger cable TV networks) and, if found, automatically store all channels in the channel table. If no ACI signal is found, the tuner will store most of the channels with a name by using its advanced system to detect channel name from the Teletext signal.

In case you deliberately want to ignore the ACI signal select SCAN: ACI OFF.

The SEARCH NEW CH function will search for new channels and, if found, store them above the already stored channels. This is a convenient option if a new channel (e.g. your own VCR channel) has to be added without affecting your already stored channels.

Warning! : All previously stored channel information will be overwritten after restarting scan with ACI ON or ACI OFF, but will be retained if you choose SEARCH NEW CH. Confirm with OK or EXIT.



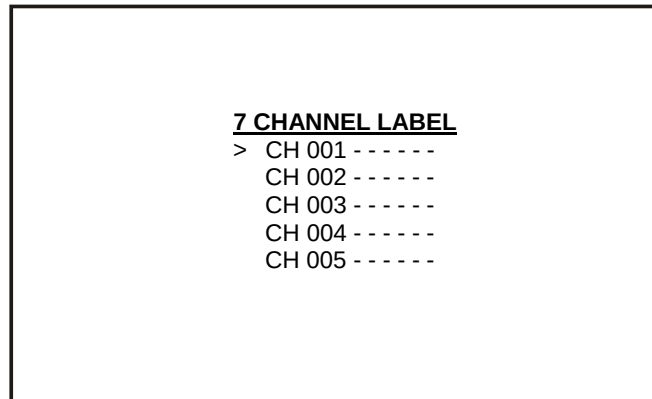
Select the required subject and confirm with “OK” key.

② CHANNEL LABEL:

The channel label menu gives you the option to write or change the name of each stored

channel. The selected channel will be displayed in the background for easy recognition. Press "▲" or "▼" and "OK" to activate the required channel, then press "▲" or "▼"

button to pick a numeral or alphabetic character; press "▶" to move to next column. After entering (maximally six characters) and pressing "OK" you come back into the previous mode. You can leave the label mode at any time by pressing the EXIT key.



Select the required channel and open label mode by pressing the "OK" key.

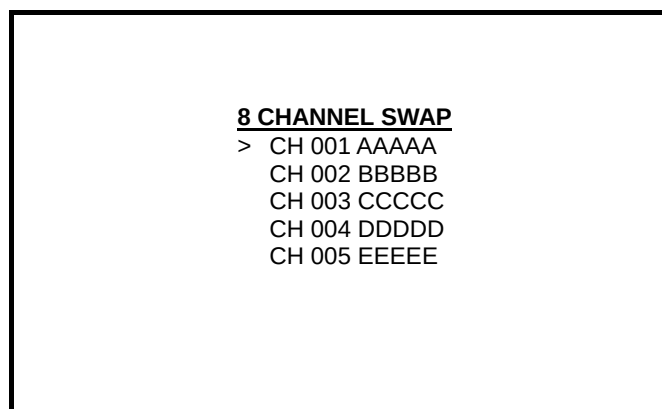
③ CHANNEL SWAP:

It is advised to complete channel label function before you start with the CHANNEL SWAP function.

Press "▲" or "▼" to select the program you want to swap to the CH 001 position. Press "OK" key to activate swap mode. Two small arrows will appear at left/right side of the selected channel number. Press "▲" key and go to channel 001. Press "OK" key and the previously selected channel will be swapped with the actual program on channel 001.

With "◀" or "▶" button you can skip 5 channels at a time.

Repeat till all channels are in the desired sequence.



Select channel to be swapped and confirm with "OK".
Go to desired channel number and confirm again with "OK".

④ MASTER TUNE:

The PX-TUAN-02 has a very accurate tuning system however (e.g. depending on signal

quality) a frequency "off-set" might improve the picture quality. The MASTER TUNE mode offers the facility to give a certain frequency "off-set" for **ALL** channels. With the "Finetune" function (key ⑤ on remote control) you can optimise the tuning for **EACH** channel.

⑤ CH REMOVE/ADD:

The channels are not actually removed but skipped in Channel UP/DOWN selection; you can still select the removed channel by pressing the channel number. Once channels are added, they can again be addressed in Channel UP/DOWN selection.

- For example to REMOVE CH60

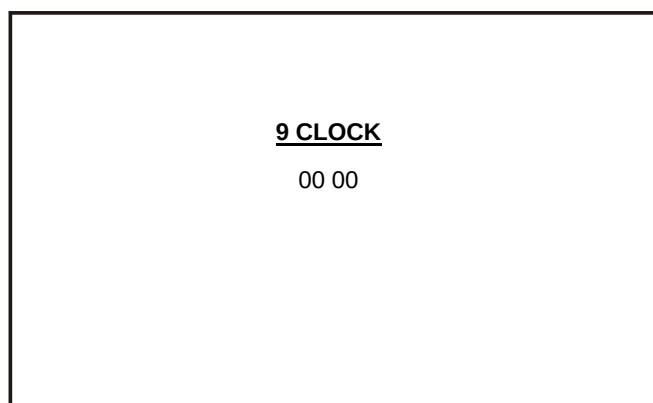
Select CH60, enter the CHANNEL sub-menu, press "▼" button to access CH REMOVE, and then confirm CH REMOVE by pressing the "OK" key.

- To ADD CH60 again

Use numerical keys on remote control to select CH60, enter the CHANNEL menu, press "▼" button to access CH ADD, and then confirm CH ADD by pressing the "OK" key.

4.2.4 CLOCK

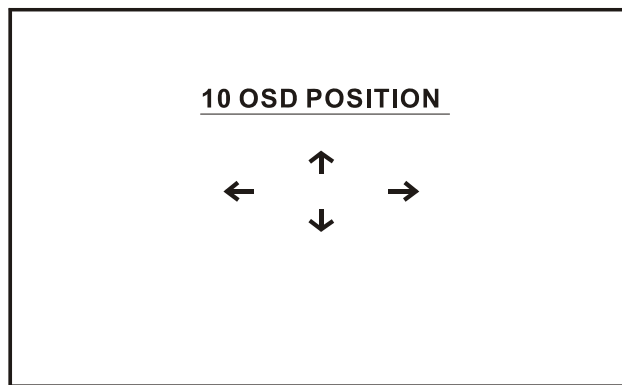
CLOCK menu provides TIME set up by hour (24h mode) and minute.



- ① Press "◀" or "▶" button to move to the digit for adjustment.
- ② Press "▲" or "▼" button to adjust.
- ③ Press "OK" button to save the time settings.

4.2.5 OSD (On Screen Display)

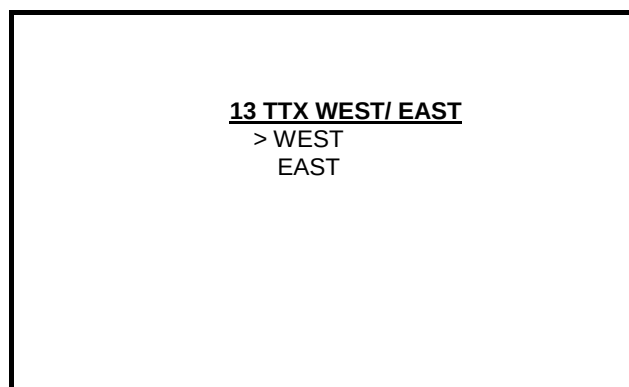
OSD menu provides position adjustment.



- ① Press "◀" or "▶" button to move the OSD left or right on the screen.
- ② Press "▲" or "▼" button to move the OSD up or down on the screen.
- ③ Press "Exit" button to save the selected OSD position.

4.3 TTX WEST/EAST Settings

TTX WEST/EAST sub-menu provides TTX sub CHARACTER settings for WEST and EAST. Default setting is PAN EURO "WEST" and is covering all Western European languages like English, German, French, Italian, Spanish, Portuguese, Swedish, Turkish and Dutch. In case you want to watch TTX transmissions from e.g. Poland or Czech Republic, select "EAST".

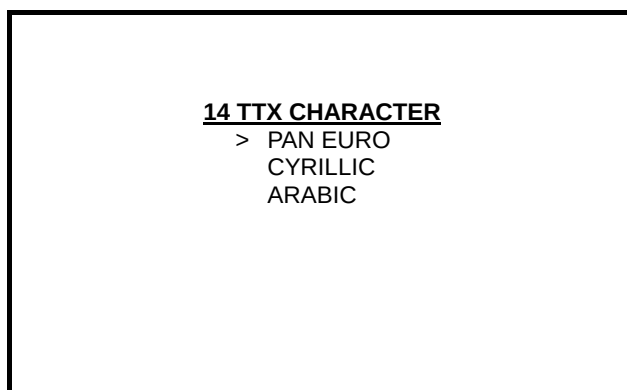


- ① Press "▲" or "▼" button to select WEST or EAST.
- ② Press "Exit" button to return to the main menu.

4.4 TTX CHARACTER Settings

TTX CHARACTER sub-menu provides main CHARACTERS settings for PAN EURO,

CYRILLIC, and ARABIC.



- ① Press "▲" or "▼" button to select PAN EURO, CYRILLIC, or ARABIC.
- ② Press "Exit" button to return to the main menu.

4.5 FAST KEYS FUNCTIONS

There are several fast keys on the remote control for direct access to several menus or functions.

Display

Pressing the "Display" key gives access to all functions printed green on the remote control (not described below). Please refer to NEC manual for full explanation. Several Tuner functions (see 3.3) are still active in this mode.

Tuner

Pressing the "Tuner" key gives access to all functions printed black on the remote control.

Finetune

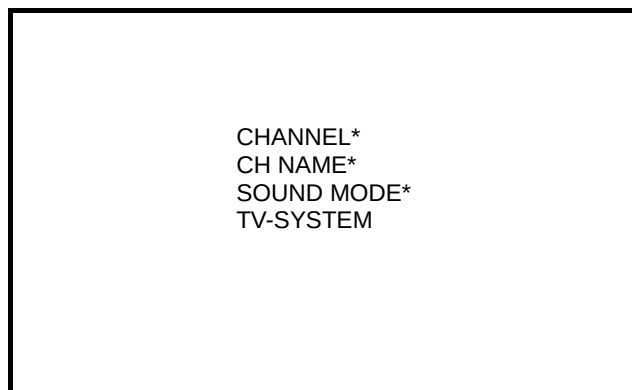
Press this button to open Frequency Finetune mode and press "◀" or "▶" key to shift the frequency of the current channel and optimise the picture quality. Press again to close menu.

I - II

Press once to display the actual sound mode setting, press again to get to the next sound mode. You can toggle among STEREO, LANGUAGE I, LANGUAGE II and MONO.



Press this button to display information containing current CHANNEL*, CH NAME*, TV-SYSTEM and SOUND MODE*, after a few seconds the time will be displayed until you press this key again.



* not active in C-Video In mode.

Red key

Selects the Red coloured Fastext page at the bottom of TTX page

Green key

Selects the Green coloured Fastext page at the bottom of TTX page.

Yellow key

Selects the Red coloured Fastext page at the bottom of TTX page or open the LANGUAGE sub-menu in Tuner TV mode.

Blue key

Selects the Red coloured Fastext page at the bottom of TTX page or open the TV-SYSTEM sub-menu in Tuner TV mode.

4.6 TELETEXT

Besides TV signals, PX-TUAN-02 will also decode (if available in the VBI lines from the

source) Teletext signals from the C-Video input.

4.6.1 Open and close Teletext mode

Press "Teletext" key () on the IR control to open the Teletext mode. If you open the Teletext mode for the first time on the selected TV channel it will open with page 100. To close the Teletext mode press this key again. Once you have selected a certain page it will stay active in the background if you return to the TV-mode. If you open Teletext mode again (on same channel) it will open with the latest selected page.

When there is no Teletext service available, a black screen with "100" in the left upper corner will be displayed.

Teletext information is sensitive to errors (like noise or reflections) in the received TV signal. If the incoming TV signal isn't perfect the Teletext page may show several errors (missing characters or blinking lines), which may be reduced after adjusting "Finetune" in TV mode.

4.6.2 Selecting a Teletext Page

There are 3 possibilities:

- a) Enter the desired page number (3 digits) with the digit buttons on the IR control.
- b) Press "▲" and "▼" on the IR remote control to search pages forward and backward.
- c) Press one of the Fastext colour keys (Red, Green, Yellow, Blue) on the IR control corresponding to the coloured options at the bottom line on the screen.

4.6.3 Mix Teletext with Picture

While in Teletext mode you can press "MIX" key () on the IR remote control to display the Teletext information (e.g. subtitles) mixed with the TV picture. Press again to return to normal Teletext mode.

4.6.4 Display Hidden Text and Deactivate Teletext

Press "?" button on the IR remote control to display, if available, any hidden text in the Teletext page. After this, the page counter will stop and the selected Teletext (sub) page will be displayed till you press "?" key again.

4.6.5 Double Height

Press double height key () on the IR remote control to display the upper half of Teletext information in double height. If you press again the lower half will be displayed. Press again to get back to normal height.

Chapter 5 Other Information

5.1 Troubleshooting

Symptom	Solution
No picture on NEC Plasma	● Make sure the power cord is connected to an AC outlet, and the power LED is on. ● Make sure the Power Switch is in ON position. ● Make sure the display's power is on. ● Check all cable connections. ● Switch the tuner OFF and ON again with Power Switch
Video is distorted	● Check your antenna connections ● Check incoming signal quality. ● Check all connections.
No sound	● Check audio connections. ● Make sure that used Audio input is linked with the used Video input (see AUDIO settings in NEC manual). ● Make sure the Audio system is properly working. ● Press Volume+ Up key on remote control.
The remote control does not work	● Make sure batteries are installed. ● Check remaining battery life time or replace batteries ● Press "Tuner" or "Display" key ● Check if Tuner is not in the external input mode.
Missing channels	● Some Cable TV or satellite channel providers use scrambled or encoded signals that may require a device to de-scramble and receive the channels. ● Apply search new channel function ● Check if channel is not "removed" (see 4.2.3.5)

5.2 Specifications

Power

- 100-240VAC IN

RF In	- IEC-Female
TV Channels	- 124 channels max.
TV-systems	- RF: PAL-BG, PAL-I, PAL-DK, SECAM-L and SECAM-DK - C-Video IN: PAL/SECAM/NTSC
Video Input	- Composite video, RCA connector
Audio Input	- Stereo, L+R RCA connectors
Monitor Video Out	- Composite video, RCA connector
Monitor Audio Out	- Stereo, L+R RCA connectors
Processed Video Outputs	- Composite video, RCA connector - Component Out (YCbCr), 3x RCA connector - S-Video Out, 4-pin mini DIN connector
Audio Out	- Stereo, L+R RCA connectors
Teletext Memory	- 10 pages (incl. Fastext)
Stereo Audio Decoder	- A2/NICAM
Clock	- 24 hours system, 4 x 8 segment display
Operating Temperature	- 5°C ~ 45°C
Operating Humidity	- 5% ~ 80%
Dimensions	- 280 (L) x 150 (W) x 35 (H) mm
Weight	- 1.3kg unit only / 2.3 kg packaged
IR Remote Control	- 40 Buttons (AAA batteries x 2)

5.3 Default Channel Tables

PAL - BG	PAL - I	SECAM	PAL / SECAM DK	CH	FREQ.	CH	FREQ.	CH	FREQ.	CH	FREQ.
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1	48.25	1	45.75	1	47.75	1	49.75
2	55.25	2	53.75	2	55.75	2	57.75
3	62.25	3	61.75	3	60.50	3	59.25
4	69.25	4	69.25	4	63.75	4	67.25
5	76.25	5	76.25	5	175.00	5	75.25
6	83.25	6	83.25	6	183.00	6	77.25
7	90.25	7	105.25	7	191.00	7	85.25
8	97.25	8	112.25	8	199.00	8	93.25
9	105.25	9	119.25	9	207.00	9	101.25
10	112.25	10	126.25	10	215.00	10	109.25
11	119.25	11	133.25	11	49.25	11	117.25
12	126.25	12	140.25	12	53.00	12	125.25
13	133.25	13	147.25	13	57.25	13	133.25
14	140.25	14	154.25	14	66.75	14	141.25
15	147.25	15	161.25	15	179.75	15	149.25
16	154.25	16	168.25	16	189.75	16	157.25
17	161.25	17	175.25	17	194.75	17	165.25
18	168.25	18	183.25	18	201.25	18	173.25
19	175.25	19	191.25	19	210.25	19	175.25
20	182.25	20	199.25	20	217.25	20	183.25
21	189.25	21	207.25	21	471.25	21	191.25
22	196.25	22	215.25	22	479.25	22	199.25
23	203.25	23	223.25	23	487.25	23	207.25
24	210.25	24	231.25	24	495.25	24	215.25
25	217.25	25	238.25	25	503.25	25	223.25
26	224.25	26	245.25	26	511.25	26	231.25
27	231.25	27	247.43	27	519.25	27	239.25
28	238.25	28	252.25	28	527.25	28	247.25
29	245.25	29	259.25	29	535.25	29	255.25
30	252.25	30	266.25	30	543.25	30	263.25
PAL - BG		PAL - I		SECAM		PAL / SECAM DK	
CH	FREQ.	CH	FREQ.	CH	FREQ.	CH	FREQ.
31	259.25	31	273.25	31	551.25	31	271.25
32	266.25	32	280.25	32	559.25	32	279.25

33	273.25	33	287.25	33	567.25	33	287.25
34	280.25	34	294.25	34	575.25	34	295.25
35	287.25	35	303.25	35	583.25	35	303.25
36	294.25	36	311.25	36	591.25	36	311.25
37	303.25	37	319.25	37	599.25	37	319.25
38	311.25	38	327.25	38	607.25	38	327.25
39	319.25	39	335.25	39	615.25	39	335.25
40	327.25	40	343.25	40	623.25	40	343.25
41	335.25	41	351.25	41	631.25	41	351.25
42	343.25	42	359.25	42	639.25	42	359.25
43	351.25	43	367.25	43	647.25	43	367.25
44	359.25	44	375.25	44	655.25	44	375.25
45	367.25	45	383.25	45	663.25	45	383.25
46	375.25	46	391.25	46	671.25	46	391.25
47	383.25	47	399.25	47	679.25	47	399.25
48	391.25	48	407.25	48	687.25	48	407.25
49	399.25	49	415.25	49	695.25	49	415.25
50	407.25	50	423.25	50	703.25	50	423.25
51	415.25	51	431.25	51	711.25	51	431.25
52	423.25	52	439.25	52	719.25	52	439.25
53	431.25	53	447.25	53	727.25	53	447.25
54	439.25	54	455.25	54	735.25	54	455.25
55	447.25	55	463.25	55	743.25	55	263.25
56	455.25	56	471.25	56	751.25	56	471.25
57	463.25	57	479.25	57	759.25	57	479.25
58	471.25	58	487.25	58	767.25	58	487.25
59	479.25	59	495.25	59	775.25	59	495.25
60	487.25	60	503.25	60	783.25	60	503.25
PAL - BG		PAL - I		SECAM		PAL / SECAM DK	
CH	FREQ.	CH	FREQ.	CH	FREQ.	CH	FREQ.
61	495.25	61	511.25	61	791.25	61	511.25
62	503.25	62	519.25	62	799.25	62	519.25
63	511.25	63	527.25	63	807.25	63	527.25
64	519.25	64	535.25	64	815.25	64	535.25

65	527.25	65	543.25	65	823.25	65	543.25
66	535.25	66	551.25	66	831.25	66	551.25
67	543.25	67	559.25	67	839.25	67	559.25
68	551.25	68	567.25	68	847.25	68	567.25
69	559.25	69	575.25	69	855.25	69	575.25
70	567.25	70	583.25	70	863.25	70	583.25
71	575.25	71	591.25			71	591.25
72	583.25	72	599.25			72	599.25
73	591.25	73	607.25			73	607.25
74	599.25	74	615.25			74	615.25
75	607.25	75	623.25			75	623.25
76	615.25	76	631.25			76	631.25
77	623.25	77	639.25			77	639.25
78	631.25	78	647.25			78	647.25
79	639.25	79	655.25			79	655.25
80	647.25	80	663.25			80	663.25
81	655.25	81	671.25			81	671.25
82	663.25	82	679.25			82	679.25
83	671.25	83	687.25			83	687.25
PAL - BG		PAL - I		SECAM		PAL / SECAM DK	
CH	FREQ.	CH	FREQ.	CH	FREQ.	CH	FREQ.
84	679.25	84	695.25			84	695.25

85	687.25	85	703.25			85	703.25
86	695.25	86	711.25			86	711.25
87	703.25	87	719.25			87	719.25
88	711.25	88	727.25			88	727.25
89	719.25	89	735.25			89	735.25
90	727.25	90	743.25			90	743.25
91	735.25	91	751.25			91	751.25
92	743.25	92	759.25			92	759.25
93	751.25	93	767.25			93	767.25
94	759.25	94	775.25			94	775.25
95	767.25	95	783.25			95	783.25
96	775.25	96	791.25			96	791.25
97	783.25	97	799.25			97	799.25
98	791.25	98	807.25			98	807.25
99	799.25	99	815.25			99	815.25
100	807.25	100	823.25			100	823.25
101	815.25	101	831.25			101	831.25
102	823.25	102	839.25			102	839.25
103	831.25	103	847.25			103	847.25
104	839.25	104	855.25			104	855.25
105	847.25	105	863.25			105	863.25
106	855.25						
107	863.25						

Please note: These factory stored channel numbers are not identical with European norm CCIR channel numbers. This list should only be used when the frequencies (MHz) of received channels are known and is meant to be used only as an orientation tool to establish that the tuner and antenna are working well before AUTOSCAN is launched. If a cable operator is offering ACI (Automatic Channel Installation) on one of his channels and the frequency of such channel is known, this table will facilitate access to such a channel from which an AUTOSCAN with ACI ON could be launched.