# Panasonic

## High Definition Digital Receiver

# TU-HDT105A

**Panasonic** HD DIGITAL RECEIVER    TU-HDT105A

IR
SIGNAL

8888

DVB
Digital Video Broadcasting

DOLBY
DIGITAL

EXIT    ⌄    ⌃

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Declaration of Conformity No TU-HDT105A, 29th August 2005

**DOLBY SURROUND**
**PRO · LOGIC**

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# Welcome

We hope you have many years of enjoyment from your new Panasonic HD Digital Receiver.
The simple, easy to follow instructions will enable you to quickly set up and install the equipment and begin your enjoyment of the available services.
The availability of Digital services in your area is dependent upon the transmissions received by your aerial and the configuration of your existing equipment.

# Warnings and precautions

- This Digital Receiver is intended for the reception of Digital TV picture and sound signals.
- If the Digital Receiver is exposed to drastic temperature changes, e.g. taking it from a cold room to a warm room, connect it to the mains supply and let it stand for at least two hours.
- Do not expose the Digital Receiver to any moisture. The Digital Receiver is designed for use indoors and should be protected against moisture (splashes of water etc.).
- Do not expose the Digital Receiver to dripping or splashing water and objects filled with liquid, such as vases, must not be placed on top of or above the unit.
- Adequate ventilation is essential to prevent failure of electrical components; we recommend that a gap of at least 5cm is left all around this Digital Receiver even when it is placed inside a cabinet or between shelves.
- Ensure that the ventilation holes beneath the unit are not blocked.
- Do not place the Receiver in the immediate vicinity of a heat source or in direct sunlight as this would prevent appropriate cooling.
- To prevent fire, never place any type of candle or naked flame on top of or near the Digital Receiver.

# Caring for your Digital Receiver

- Remove the mains plug from the wall socket. The cabinet can be cleaned with a dry clean cloth. Do not use solutions containing benzol or petroleum.
- Make sure that all the electrical connections are properly made. Do not connect any of your equipment (TV, video recorder, etc.) to the mains supply until you have properly connected all the other leads. Disconnect your Digital Receiver from the mains supply before you disconnect any other equipment from its rear panel.

# Contents

# 1 Introduction

This Operating Instruction Book is the GUIDE to your digital receiver. In it you can find comprehensive descriptions of the functions of your receiver. We strongly advise you follow the instructions in this manual. Once you become acquainted with the operations of your digital receiver, you will only need this manual for reference.

## 1.1 IMPORTANT: First time Installers

**IMPORTANT**: For first time installers, please read Section 4, "Installing Your Digital Receiver", to learn how to connect your digital receiver to other A/V equipment. Once you have completed the setup, go to Section 6.3, "Video Menu", to select various system settings according to your personal preference, and Section 6.4, "Audio Menu" and Section 6.5, "Tuning Menu", to set your region for correct current time and to conduct channel search.

# 2 The Digital Receiver
## 2.1 Front Panel



    ⏻ **(Power Button)**: Turns the Digital Receiver On / Off (Standby mode).
**EXIT Button**: To return to the previous menu from the sub-menus.
**Display**: Shows channel number when the box is activated or current time (in the form *hhmm*) when the box is in standby mode.
**Front Panel Arrow Buttons**: ▲/▼ buttons to select channels or settings within the menus.
**Stand-By Indicator (LED)**: Lights red in Stand-By mode. When the Digital Receiver is working the LED becomes green.
**Infrared (IR) Indicator (LED)**: The red LED flashes, indicating the box has received a command from the remote control.
**Signal Indicator (LED)**: When a signal of a channel is successfully acquired the yellow LED will light up.

## 2.2 Rear Panel



**AC Power Mains**: (100 - 250V~; 50/60 Hz), 1.0 A.
**RF In**: For connection to cable from outdoor terrestrial antenna.
**RF Out**: For connection to your TV antenna IN or VCR RF IN.
**S-Video**: Y/C component video for connection to TV.
**CVBS**: Two composite video outputs for connection to TV, VCR or other A/V receiver
**AUDIO**: Two sets of stereo audio outputs for connection to TV, VCR or other A/V receiver.
**YPbPr**: Y/Pb/Pr component video for connection to TV.
**RGB**: R/G/B/HS/VS component video for connection to TV or monitor.
**Coaxial**: Digital Audio output by coaxial.
**Optical**: Digital Audio output by optical.
**Serial Port (RS232)**: For system maintenance.
**A/B/C Switch**: Switches for video output mode selection.  Selection options are listed in the table.

## 2.3 Box Contents

The box that carries your Digital Receiver should also contain the following items:
Remote Controller
Two batteries (AAA Size)
RCA video cables (one white / red, the other red / green / blue)
RF cable
User's Manual and Warranty Card

# 3    The Remote Controller

## 3.1 Preparing the Remote Controller

Remove the cover of the battery compartment (on the back of the handset)
Insert 2 AAA (1.5V) batteries.  While inserting, observe the + and – markings indicated inside the battery compartment.

Replace the cover.

Test the remote controller by pressing any key and check if the IR-LED (Red) on the front panel of the receiver flashes.

## 3.2  *Remote Control Button Functions:*

⏻ : To turn your STB on/off (standby mode)

TV/RADIO: To toggle between TV and Radio service

AUDIO: To select the desired audio sound track

⊞ : Aspect ratio, to change to 16:9, 4:3 letterbox or 4:3 centre-cut mode

⊠ : Mute function, to turn on/off sound  (only used for analogue audio output)

VOL : For Volume adjustment (only used for analogue audio output)

CH : For changing channels

LIST: To show channel list

STTL: To turn closed captions on/off

▬ : (Red): Application defined function key

▬ : (Green): Application defined function key

▬ : (Yellow): Application defined function key

▬ : (Blue): Application defined function key

MENU: To display the "Main" Onscreen Display

GUIDE/INDEX: To obtain a list of programs on available channels.  This information is only shown if your broadcaster transmits program information; INDEX: To go to index page in Teletext mode

EXIT: To go back one level in the menus.

*i*/ REVEAL

*i* : To call up the program information plate and extended channel information in program guide menu. This information is only available if the broadcaster or network transmits the information.

REVEAL :
show the hidden information in the Teletext mode.

◀▐▶ buttons: To select menu items in the menus.

◀▶ buttons: To cycle through options within the menus

OK: To confirm choices and selection of highlighted item

**Number (0~9)** keys: To select channels directly and other commands. Broadcasters have allocated logical channel numbers (LCN) to their services based on their service number identity. The programs can be selected by the LCN.
1: TEN, 2: ABC, 3: SBS
5: TEN Regionals,
6: SEVEN Regionals,
7: SEVEN,
8: NINE Regionals,
9: NINE

TV/TEXT: To turn Teletext on/off; TEXT: To toggle between TV and Teletext

↺/ HOLD : To toggle between present and previous channels; HOLD: To stop current page in Teletext mode

# 4 Installing Your Digital Receiver

## 4.1 Connecting Your Digital Receiver

The following illustrations show some examples for connecting this HD Digital Receiver. Select the connection that is best suited for your needs. Many other connections may be possible when optional devices such as RF cable splitters are included in your system. These devices may cause signal degradation and, if too many are used, poor quality picture and sound may result.

Terrestrial antenna/cable connection

Connect the TV antenna cable to the HD Digital Receiver RF IN connector.  Also connect the cable between your TV Antenna IN and RF Out connector on the rear of the Digital Receiver. This connection allows your TV set to receive normal analogue programs. (Refer to A)
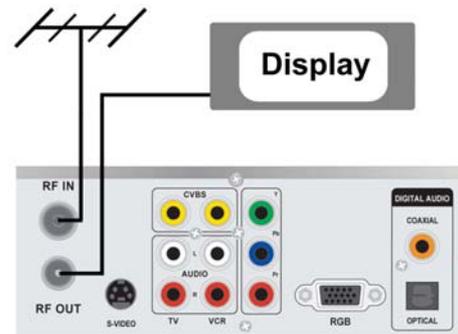
*(A) Aerial Connection*

**Video Connections**

Adjust switch on the rear panel according to the format supported by your display device, and it contains three modes:  A, B and C.

**Mode A (SD/HD, YPbPr)**

Connect the YPbPr component video output socket on your digital receiver to your display device's YPbPr component video input.  Be sure to match the colours on the RCA sockets with the coloured plugs.  (Refer to B)

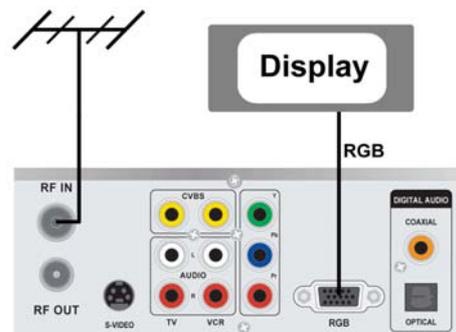Note: When unit is in Mode A, there is no video output from the CVBS TV socket.
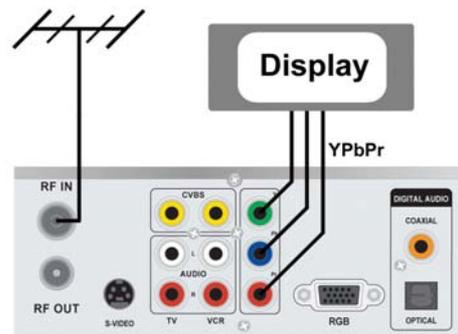
*(B) YPbPr Connection*

**Mode B (HD, RGB)**

Connect the D-sub socket to your display device.  (Refer to C)

Note: Cable is not supplied.

*(C) RGB Connection*

### Mode C (SD, TV/CVBS)

Connect the CVBS composite video output socket on your digital receiver to your TV's CVBS video input socket.

Connect the S-Video (Y/C) component video output socket on your receiver to your TV's S-Video input socket.(Refer to D)

Note: Cable is not supplied.

Note: When unit is in Mode C, there is no output from the YPbPr sockets.
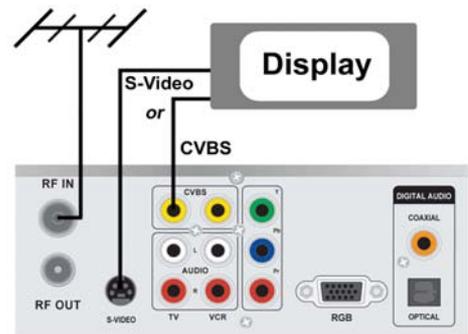


*(D) CVBS / S-Video Connection*

### Audio Connections

### (a) Digital Audio

If your display device is equipped with Dolby Digital and/or MPEG audio decoding capability, you may connect the Digital Audio output of your digital receiver to the display device's Digital Audio input using either the Optical or Coaxial RCA socket. (Refer to E) You may also connect the digital audio output to your A/V receiver if it is capable of decoding a Dolby Digital / MPEG digital audio stream.

Note: Cable is not supplied.
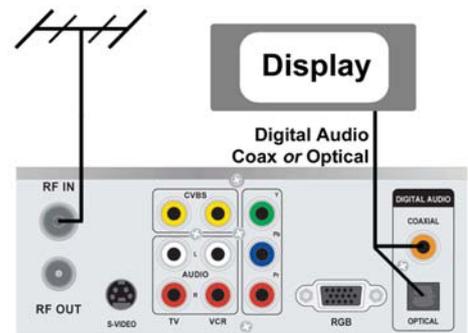


*(E) Digital Audio Connection*

### (b) Analogue Audio

If your display device and/or A/V receiver does not support Dolby Digital / MPEG decoding, you will need to connect the L/R Audio output RCA sockets on your digital receiver to the stereo L/R Audio inputs of your display device and/or A/V receiver.
(Refer to F). If your A/V receiver supports Dolby Pro Logic decoder, you can switch ON the "Stereo Surround" function (Page 20).
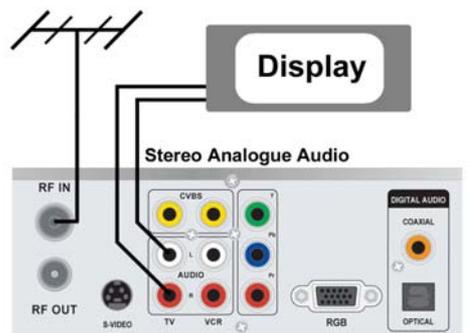


*(F) Analogue Audio Connection*

## 4.2 Output Mode Selection

After you have connected the AV cables for video and audio between your digital receiver and the display device, check that the position of the output selection switch is correct for your chosen connection method as in the table below.

| Switch Position | Video Output Format | Receiver Mode |
|---|---|---|
| A | YPbPr (Component Video) | SD / HD |
| B | RGB | HD |
| C | CVBS / S-Video | SD |

Switch on the digital receiver and the display device, and select the correct AV input on the display device.  The digital receiver will take about 10 seconds to switch on.  You may now start the installation procedure.

The installation procedure is used to set up the video formats that may be output from the digital receiver to the display device.  During this procedure the digital receiver may test if the display device is capable of correctly displaying 576i, 576p, 1152i, 1080i and 720p video formats.  You will be asked to test these video formats on the display device and confirm if the picture is displayed correctly.  If the display device is not capable of displaying a particular video format, the digital receiver will return to the last correctly displayed format after about 12 seconds.

**Note:** In some cases, a display device will fail to return to a previously tested mode after failing to display the next mode (i.e. the display does not support this format).  If you experience this, turn the display device off, wait 10 seconds and then turn the display device on.

**Installation Format Selection**

Use the Remote Control keypad to perform the digital receiver format testing and installation.  Follow the digital receiver's on-screen instructions to do the installation.

**Mode A (SD/HD, YPbPr)**

The switch on the rear of the digital receiver must be in position A, and the AV connections must be taken from the YPbPr RCA sockets.  The digital receiver display will show "Hdcl".  Press OK to confirm the selection, or switch to another mode.  Proceed to INSTALLATION.

> You have selected YPbPr format at the rear panel switch.
>
> Press OK to continue.

Note: If the STB is connected to a HD only YPbPr input on the display, no picture will be displayed until you have pressed the TV/TEXT to change to 576p format.

## Mode B (HD, RGB)

The switch on the rear of the digital receiver must be in position B, and the AV connections must be taken from the RGB HD15 socket. The digital receiver display will show "Hd r". Press OK to confirm the selection, or switch to another mode. Proceed to INSTALLATION.

You have selected HD(RGB) format at the rear panel switch.

Press OK to continue.
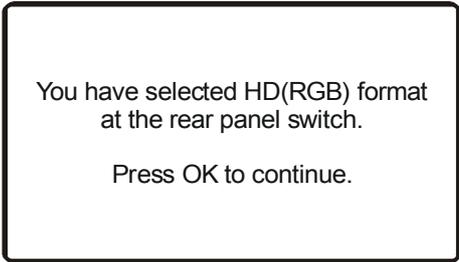
## Mode C (SD, CVBS)

The switch on the rear of the digital receiver must be in position C, and the AV connections must be taken from the CVBS TV RCA socket. The digital receiver display will show "Sdtv". Press OK to confirm the selection, or switch to another mode. Proceed to INSTALLATION.

You have selected SD(TV/CVBS) format at the rear panel switch.

Press OK to continue.
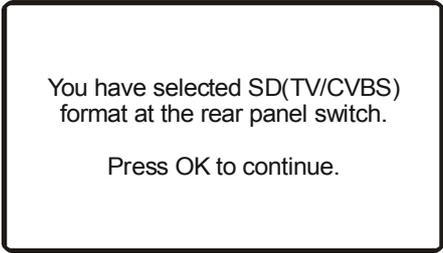
### Installation

The on-screen display will ask which type of display device is being used. You will have a choice of either Plasma, LCD (Flat panel displays) or CRT (eg Standard television).

Please select the display type:

1 Plasma Display
2 LCD TV
3 CRT TV
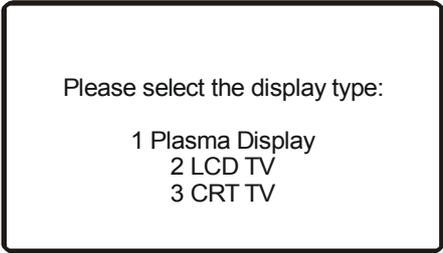
Select from the choices using the remote control keypad. The following screen will ask you to confirm 576i / 576p (depending upon the current mode). Follow the on-screen instructions to test HD576p, HD1152i, HD1080i and HD720p formats.

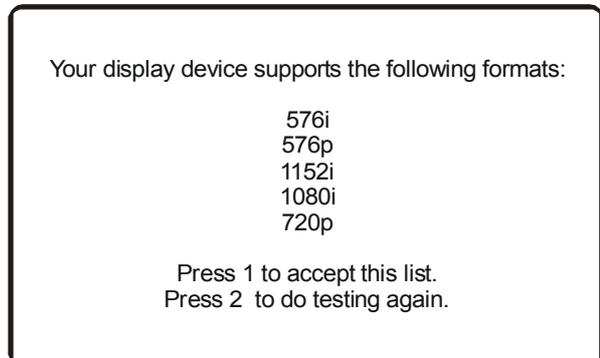Note: Not all video formats are available in all modes. The following table describes the available formats in each mode.

| | HD (YPbPr) | | HD (RGB) | | SD (CVBS) | |
|---|---|---|---|---|---|---|
| | LCD/Plasma | CRT | LCD/Plasma | CRT | LCD/Plasma | CRT |
| 576i | X | X | | | X | X |
| 576p | X | X | X | X | | |
| 1080i | X | X | X | X | | |
| 1152i | | X | | X | | |
| 720p | X | | X | | | |

Table 1: Output format table

When all formats have been tested, a list of all accepted video formats will be displayed.  You will have the option to accept this list or to start the procedure again.
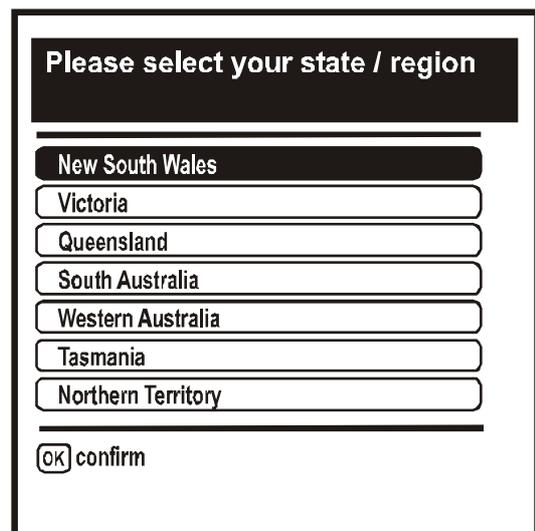
The accepted display formats are then displayed and you are requested to select your preferred display format, or to select Dynamic Format Selection.  When Dynamic Format Selection is selected, the digital receiver will choose the best format for the received digital program. The selected output format can be changed at any stage in the Video menu (section 6.3)

> Your display device supports the following formats:
>
> 576i
> 576p
> 1152i
> 1080i
> 720p
>
> Press 1 to accept this list.
> Press 2  to do testing again.

**NOTE** : Anytime you change the rear panel switch or change display device, you will have to restart the procedure again.

## 4.3    State & Territory Selection

The first time the digital receiver is installed, or after default settings are restored (section 6.5), please select the state or territory that you live in. This will enable the digital receiver to display the correct local time.

> **Please select your state / region**
>
> **New South Wales**
> Victoria
> Queensland
> South Australia
> Western Australia
> Tasmania
> Northern Territory
>
> OK confirm

## 4.4    Power Saving Timer

This function requires a time to be set for the automatic shutdown of the digital receiver. The receiver will automatic go into standby to save power. The time is set from the last received command sent to the receiver.  The default setting is 4 hours.

## 4.5    Auto Scan Channel

The first time the digital receiver is installed, or after default settings are restored (section 6.5), the digital receiver will automatically scan for available digital services. This will take around five minutes or so.

# 5    Operating Instructions: Knowing your basic controls

To become acquainted with the operations and functions of your receiver, you should learn how to use the control buttons on the Front Panel and the Remote Control. The following segment is an introduction to features that you will most commonly use.

## 5.1    Switching On Your Digital Receiver

Before you switch on your receiver please ensure the power lead is plugged into a 240V AC socket.  Remember that as long as the digital receiver remains plugged into a 240V supply, the receiver will be in constant "STANDBY".

Switch on your receiver by pressing either the ⏻ button on the remote control or the ⏼ button on the front panel.  While the digital receiver is in normal viewing mode, the green LED lights up.  When not using the digital receiver, put your equipment in the "STANDBY" mode by pressing either one of the ⏻ /⏼ buttons again.  When the red "STANDBY" LED lights up, it indicates the digital receiver is in "STANDBY" mode. The front panel will show current local time. When the digital receiver is in standby mode, the power consumption is reduced by about 50%.

## 5.2    Information Plate

The Information Plate (I-Plate) shows information about the program that you are currently watching. The information plate appears briefly whenever you switch to a new channel or when there's a problem with signal reception.  To show the information plate, press the ⏯/ REVEAL button. Pressing ⏯/ REVEAL again will cause the program synopsis to be revealed. Pressing ⏯/ REVEAL again will toggle the synopsis to the next program information. To exit the synopsis, continue pressing the ⏯/ REVEAL button. Pressing the **EXIT** button will remove the I-Plate from the screen at any time. The I Plate shows information about program, the time it is being broadcast and the type of service.

### Program Guide

The Program Guide is a user-friendly feature, which enables you to select, book, and "peek in advance" at programs. To enter into the Program Guide, press **GUIDE/INDEX**. In the Program Guide on-screen display, the program schedule is listed in chronological order.

Section 6.1 of your User Manual will instruct you to use the Program Guide efficiently.

## 5.3  Changing or Selecting Channels

There are several methods to change or select a channel. You can either use the front panel or the remote control buttons.

The following methods are available for you to choose from:

Press Channel [CH] on the remote control (channel changes according to favourite channel settings).

Directly enter a logical channel by using the number keys on the remote control.

Broadcasters have allocated logical channel numbers (LCN) to their services based on their service number identity. The programs can be selected by the LCN.
1:  TEN,
2:  ABC,
3:  SBS
5:  TEN Regionals,
6:  SEVEN Regionals,
7:  SEVEN,
8:  NINE Regionals,
9:  NINE

Use [CH] to change channel. Unlike Channel [CH] control channel movement is not aligned with favourite channels setting.

Use [↩ / HOLD] to toggle between current channel and previously watched channel.

## 5.4  Audio Mode Selection

Australian broadcasters transmit MPEG and/or Dolby Digital audio with all programs. The audio mode default setting is MPEG. This can be changed by pressing the audio button AUDIO on the remote control to change between the available sound types.  When you first press the button, the Audio OSD is shown on screen listing all available soundtracks.  The currently played track is highlighted.  This OSD will disappear in a few seconds. Press the Audio key again to select another track before this OSD disappears.

### 5.5    Display Aspect Selection

During the installation, the digital receiver aspect ratio is automatically set to widescreen 16:9 when a HD format or SD component video is selected as the output format. With a SD output format, the aspect ratio is set to 4:3.

The aspect ratio can be changed, in SD, between widescreen 16:9, centre cut for 4:3, or letterbox. The Display Aspect can be changed using the remote control by pressing the aspect ⬌ button to bring up the OSD. The OSD will have one aspect selection highlighted. To change the display aspect, push the ⬌ button until you have the desired picture aspect. The OSD will disappear after a few seconds.  This function is similar to the VCR out setting on page 19.  However the "Display Aspect" setting affects the TV CVBS or YPbPr output, while the "VCR out" setting affects only the VCR CVBS output.

# 6    Using the Main Menu

Your receiver comes with a directory of features or the Main OSD. The Main is your gateway to customising many of the features offered by your receiver. To access the Main OSD, press the MENU button. The Main feature comprises the following categories of services:

**Program Guide** provides access to:
Programs Schedule
Programs Categorisation
Booked Programs

**TV/Radio Channels** provides access to:
Program Favourite Channels
Selection of Favourite Channels
Channel locking

**Video Menu** provides access to:
Video Output Format
Teletext Contrast
Banner Display Time Out
VCR Screen Format

**Audio Menu** provides access to:
Audio Delay Time
MPEG Audio Level
Audio Mode Priority
Digital Audio
Stereo Surround
Audio Balance

**Tuning Menu** provides access to:
Channel Installation
Region Select
Power Saving Timer
Password Change
Parental Guidance
Restore Default Settings

**Diagnostic Information** displays the Software
Version number, serial ID of your receiver, and
display the signal strength and quality.

## 6.1 Program Guide

**Programs Schedule**

By choosing the Program Guide banner on the
Main OSD, the Electronic Program Guide (EPG)
appears. The EPG is, in classic terms, a TV
Guide, except it is presented on your TV screen.
The EPG allows you to peek in advance,
depending on services provided by the
broadcaster, a few days or up to one week of
TV programs and program information. By
using the arrow keys on either your receiver or
the remote control, you can roam the EPG to
access various channels and programs.
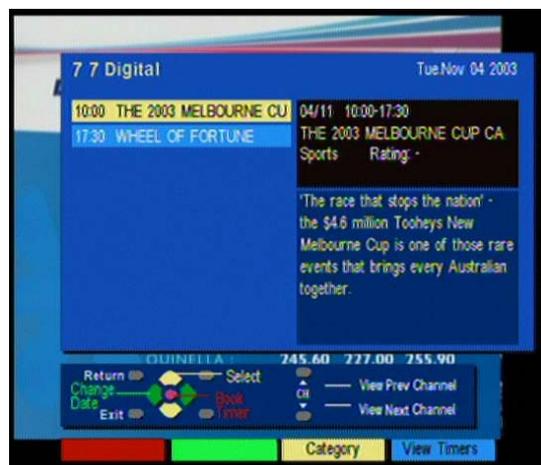


In the list, highlight the desired program by
pressing the arrow buttons. Once you have selected your choice (the highlighted
block will appear in a different colour), the detailed description of the program can be
read on the right.  If the broadcaster has not transmitted detailed description for the
program, the text "No description available" will appear.  If you wish to see what
programs are being broadcast on other channels, use the channel up or down button
to access the list of all programs shown for the current and next days (subject to
availability).

If you wish to book a future program, highlight any program (beyond the current time frame) by using the arrow buttons, and press OK to confirm your selection. The "Booking" window will appear allowing you to book the program. Press OK to confirm the booking, or EXIT to exit the Booking window. For more information on the Booking feature, see "Booked Programs" on page 16. Note that if you highlight a program currently being broadcast on another channel and press OK, the program is not booked. Instead, the receiver switches to that channel directly.

### Coloured "*Hot Keys*"

On the Program Guide window, you will notice four coloured hot keys. They provide you instant access to various services.

### Category Selection

This special feature enables you to screen out your preferred programs by program Category or type. You can gain access to this feature by pressing the yellow button. Use the arrow buttons to highlight the categories, and press OK to select or unselect any of the categories. By default, the item "All Categories" is highlighted. You have to de-select that item before selecting specific program type(s). As you select some categories and go back to program guide menu, only programs of the selected categories will be visible.

### Booked Programs

To review what programs are currently booked, press the blue button to call up the Booked Programs OSD. To cancel or re-engage the booking, press OK. If the alarm clock symbol ( ) disappears, then the timer is disengaged. The program information will remain in case you wish to rebook the program. The cancelled program will not be displayed the next time this window reappears.

## 6.2  TV/Radio Channels

You may highlight any channel in the list by pressing up/down keys, then press **OK** to view that channel directly.

**Favourites Selection**

This feature allows you to *personalise* your list of favourite channels, TV or Radio. Highlight a channel by using the ◁▶ buttons, then press the red key to select or unselect. When a channel is selected a "⌣" symbol will appear in the bar to indicate the favourite status.  When you are changing channels using the **CH** keys, the receiver jumps to the next/previous favourite channel, and skips other channels.



If you wish to lock or unlock any channel, simply press the green button to do so. When a channel is locked a 🔒 symbol will appear to indicate the locked status.  Whenever you wish to watch the locked channel you will be asked to enter the password.

To toggle between the TV ( **TV** ) and Radio ( 🎵 ) lists, press the **TV** button.
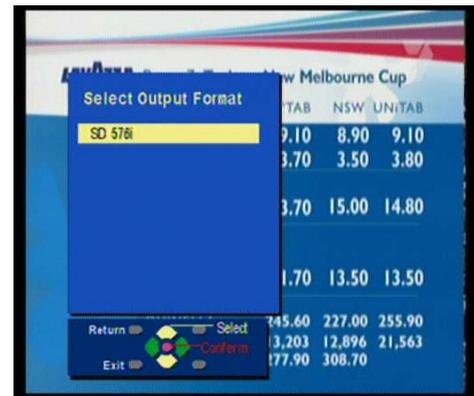
## 6.3  Video Menu

Instructions on how to set each item are presented on the next page.

## Video Output Format

After the initial format setting procedure, the output format still can be changed according to your preference.  The formats you are allowed to select depend on the initial format checking process, that is, only the formats that your display device supports.

## Teletext Contrast

The contrast of teletext pages can be adjusted to suit your display by selecting from the 3 available settings.

## Banner Display Time Out

This feature allows you to use ◀▶ to display time out for the Information Plate (I-Plate). The delay time depends on your choice, such as 4 seconds, 6 seconds, 8 seconds, and 16 seconds.

## VCR Screen Format

This setting affects the video format at the VCR output.

If your display is 4:3 format, and the transmission of a program happens to be 16:9, the **Letterbox** mode will give you a complete picture, but black areas will appear at the top and bottom.

Letterbox

Alternatively you can choose the **Centre Cut** mode to play the program in a full-screen format. However information on the left and right sides may be cut off.

Centre Cut

If your display is 16:9 format, then set the mode to **Widescreen 16:9**.  If a program happens to be in 4:3, black areas will appear at the left and right of the screen in order to present the picture in a correct aspect ratio.

16:9 Wide

**Power Saving Timer**

This function requires a time to be set for the automatic shutdown of the digital receiver. The receiver will automatic go into standby to save power. The time is set from the last received command sent to the receiver. The default setting is 4 hours.

## 6.4   Audio Menu

From here, you may adjust various settings according to your personal preference. Note that some settings in this segment are related to the A/V equipment to which the digital receiver is connected.

**Audio Delay Time**

Different displays may have different delay in displaying pictures, which may cause a slight problem with lip sync. This feature allows you to use  to select your choice according to your actual video display equipment, in order to compensate for this delay.  The delay time depends on which choice appears to provide best performance of lip sync on your display device.
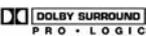


**MPEG Audio Level**

From here you my adjust MPEG audio level from –12 db to 0 db.  This adjustment is only for MPEG input and system will detect MPEG input automatically.

**Audio Mode Priority**

The Audio mode allows you to adjust the audio setting. You may choose Dolby Digital (Dolby D), MPEG1 and MPEG2. Use [icon] to select your choice. Like the Audio Language Priority setting, this audio mode setting determines your initial choice of soundtrack based on the audio mode, and you may select any soundtrack channel by channel, regardless of the audio mode setting made in this menu.

If the default Audio Mode is Dolby D, and the input signal contains only MPEG2, the default Mode will change to MPEG2 automatically. If the Audio Mode is set to Dolby D, the digital receiver will automatically select a Dolby D soundtrack when it is available.

We especially recommend this selection if you will be connecting your receiver to a TV or A/V receiver that can decode Dolby Digital (look for the [DOLBY DIGITAL] logo) or Dolby Surround Pro Logic (look for the [DOLBY SURROUND PRO·LOGIC] logo).

**Digital Audio**

For each Audio Mode, you can have different Digital Audio Selection Options. (Refer to Table 2, Digital Audio Selection Table)

Table 2: Digital Audio Selection Table

| Default Audio Mode | Digital Audio Selection Options |
|---|---|
| Dolby Digital | Bitstream<br>PCM (stereo)<br>3. Off |
| MPEG-2 | Same as above |
| MPEG-1 | PCM (stereo)<br>2. Off |

o   *Bitstream: select this if your TV or A / V receiver has a digital audio input and can decode Dolby Digital
o   *PCM (stereo): select this if your TV or A / V receiver has a digital audio input but can not decode Dolby Digital
o   *Off: select this if you want the digital audio output to mute when a Dolby Digital program is being received.

**Stereo Surround**

You can toggle Stereo Surround on or off by pressing [icon] and **OK**

On: Surround information will be included in stereo output (Lt/Rt)

Off:  Pure stereo audio output (L/R)

**Audio Balance**

You can adjust the value from L+7 to R+7.  The selection "0" means balanced (equal level) output on the two front speakers.

## 6.5   Tuning Menu (Default password: 0000)

The Tuning Menu Settings are used to program your digital receiver. Again, some of the settings, especially "Channel Installation" (1), may require assistance from the Panasonic Customer Care Centre (132600).  Your digital receiver will ask you to key in a password, and the default password is 0000.

**Channel Installation**

When the receiver is initially set up, conduct a channel search by selecting the "Auto Channel Search" function.



**Auto Channel Search**

Auto Channel Search provides the easiest way to conduct a channel search. It does not require you to enter any other information. This function is strongly recommended for regular users.  However, the user should be aware that all existing channels will be removed as soon as you confirm start of auto scan.

In the Auto Channel Search OSD, all channels found will be listed. The channel search may take a few minutes.



If you exit an auto scan during the scan process, some channels may not be available to you.

**Manual Channel Search**

In the "Manual Channel Search" window you can set the specific channel to search. Press the left or right button then OK to select the broadcast RF channel you wish to search.

Note: The RF channel is not the same as the service station name number.

### Region Select

Using  you may select your local region: New South Wales, Victoria, South Australia, Queensland, Western Australia, Tasmania, Northern Territory, and Australian Capital Territory.  This setting will allow the digital receiver to display the current time in the I-Plate or when the receiver is in Stand-By mode.



### Password Change

From here you can change the password.  Once the new password is set DO NOT FORGET IT! If you change the password, we strongly suggest that you write down the new password in the ☐☐☐☐ area.  Without the password, you cannot access any functions that require you to provide the correct password!  If you forget your password, please contact customer service for help.
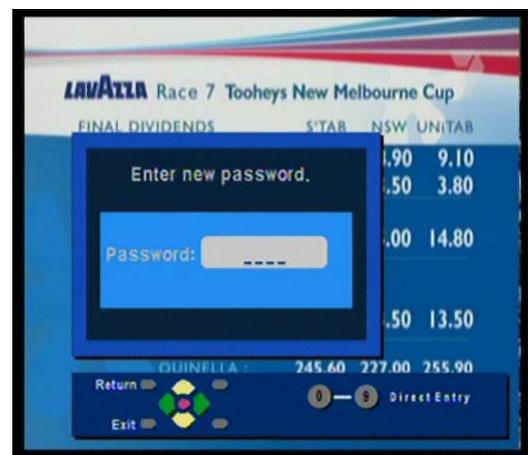


### Parental Guidance

Using  you may select to block programs with a certain rating or above: None, Block All, Block G, Block PG, Block M, Block MA, Block AV, and Block R.  Your digital receiver will automatically block programs that are unsuitable to children under the age limit you have set.  For example, if you choose "Block PG" and a received program has rating equal to or above PG, the digital receiver will ask the viewer to enter the password before viewing that program.

However, not all transmissions carry ratings information to activate this function.

**Restore Default Setting**

If you wish to reset all previous settings, you can use this feature to do so. Once you decide to restore default settings, all previous settings will be lost.  Please be very careful before you confirm this action.



## 6.6    Diagnostic Information

From here, you can get general information about the Serial ID, software and hardware version on which it is operating, and display signal strength and quality.

The signal strength and signal quality are shown as separate bars.  For the digital receiver to function correctly, both these bars need to be displayed in **green** colour. If either of the bars is displayed in the **orange** colour, there may be video and audio reception problems (see Troubleshooting). If either of the bars is displayed in **red** colour, there is a problem with



the reception of the digital signal and the antenna and connection to the digital receiver need to be checked by a qualified antenna installer**. See Troubleshooting on page 27.**

## 6.7  Teletext Operation

Teletext is only available on certain broadcast channels. The time taken to display the pages and sub-pages is set by the teletext transmitter. Teletext is also used for Closed Captioning of television programmes for the hearing impaired. Closed captions can be found on Teletext Page 801.  The picture remains on the screen while you type in 801.

Some broadcast stations will have a message on the screen to tell you that closed captions are not available for this programme. Some broadcast stations give you no indication at all.
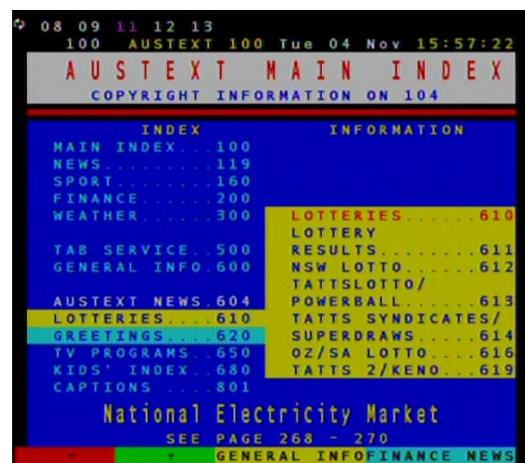
**TOP (Table Of Pages) MODE**
In TOPTEXT mode, the red button moves to the previous page number and the green button moves to the next page number. The yellow and blue buttons correspond to different subjects. Pushing the coloured button can access these subjects. This is the current preferred method of operation in Australia.

**Red /Green / Yellow / Blue buttons**
In TOP TEXT mode these correspond to the differently coloured subjects.

**TV / Teletext mode**
Press the TEXT button. The screen will display the Teletext page. Press again when you wish to return to TV mode.

Note: If you press the TEXT button while viewing a station that is not transmitting teletext, there may not be any indication on the screen. Press the TEXT button to return to normal viewing.

**Page Selection**
Pages can be selected in two ways:
a.  Press the Up / Down buttons to increase or decrease the page number by one.
b.  By entering the page number, using 0 - 9 on the remote control.

**Hold**
Hold is used to hold the Teletext page when viewing multi-page information.  Press again to return to automatic page update.

**Index**
Press INDEX to return to the main index page.  Depending on the way information is transmitted, this may have to be pressed more than once to return to the main index page.

**Reveal**
To reveal hidden words e.g. quiz page answers. Press again to hide.

**Sub Coded Page Access**
When Teletext information exceeds more than one page, it may take some time for the automatic changing of the sub pages to reach the sub page you require. As each sub page is found its number is displayed at the bottom of the page so that you may select it by pressing left or right cursor key. As more sub pages are picked up, the display at the bottom of the page changes, so that you are always offered the most recently transmitted selection of sub pages.

While selecting dynamic mode 🔁 , sub page will be changed dynamically and it will depend on which page now is available. And you can fix on specific sub page by pressing HOLD key, while in dynamic mode. You can also access to specific sub page by pressing left / right cursor key to select the sub page number.

**Closed Captions**
The broadcasters sometimes transmit program with subtitles for the hard of hearing. These closed captions are accessed by the remote control STTL button.

# 7   Glossary

- **A/V:** A connector for the transmission of audio, video and status signal.
- **Information Plate:** A small window with simple navigation tools to display information about individual channels.
- **Menu:** An onscreen display offering a list of commands to select from.
- **Normal viewing:** The state of your receiver when no menus or windows are displayed on the screen, and a valid channel is tuned.
- **Parental Lock:** A feature enabling parents to "lock" programs that they consider unsuitable for children's viewing. A "locked" program can only be "unlocked" with the Password.
- **Password:** A personal 4-digit number for controlling specific features of the digital receiver including access to locked channels. Also known as the PIN Number.

- 
- **Program Guide:** The instantaneously and continuously updated electronic program guide for quick and easy reference or program selection.
- **Reminder:** Message displayed on the screen informing viewers that a booked program is about to start.
- **Integrated Receiver Decoder (IRD):** A device that is capable of decoding and tuning digital signals and converting these signals into a format that is understood by your TV set. Aside from decoding signals, it also verifies access rights.
- **Standby mode:** A condition in which your receiver allows retrieval of up-dated information from input signals.
- **VCR:** Abbreviation for Video Cassette Recorder.

# 8    Troubleshooting

| Problem | Possible causes | What to do |
|---|---|---|
| The displ does not | Power Mains cable is not connected. | Check that the mains cable is plugged in to the power socket. |
| No sound or picture. | The A/V cord is not properly connected. Wrong selection of output mode. | Check the cable connections and other equipment connected to your receiver. Try another output switch position. |
| The remo wor . | Battery exhausted. | Change the batteries. |
|  | Fluorescent light interfering with the remote control. | Switch off the light. |
|  | Remote control is incorrectly aimed | Aim the remote control at the receiver. |
| Unable to tune channels. | TV antenna is not plugged in or digital TV is not available in this area. | Check the antenna cable connections or if an upgrade to your antenna is required to receive digital TV signals in this area. |
| Small "blo squares" appear on        re, or the picture freezes. | See "DTV Reception Trouble Shooting Guide" below. | If 'signal quality' or 'signal strength' bar is not green, it indicates that the digital receiver is not receiving an adequate signal. The antenna and/or cable system needs to be checked (maybe replaced) by an antenna installer. |
| The digita not receiv channels | The signal strength of some of the RF channels may be too low. See "DTV Reception Trouble Shooting Guide" below. | Check that the antenna is suitable to receive all RF channels. Try doing channel tuning installation again. |

**What to do if you can't solve the problem**

If you have tried all of the actions suggested above without solving the problem, please contact the Panasonic Customer Care Centre on **132 600** for additional help.

**DTV Reception Trouble Shooting Guide**

After a channel scan, some channels or no channels are found

Your TV antenna may not be properly connected to your digital receiver

1.    Did you connect your antenna as illustrated in the quick connect guide?
      If you have a pay TV box or a VCR connected then the HD-STB must be the first
      device connected to the antenna. (That is the antenna should be plugged into the
      STB and the STB RF-Out should then be plugged into the next device.

2.    Is the antenna wall socket in good condition?
      For optimum and reliable contact performance, the antenna wall connector should be
      an 'F' (screw) type connector.

3.    Are you using a quality antenna fly lead between antenna wall socket and HD-STB?
      The use of RG6 or RG59 Quad Shield 75 ohm coaxial cable fly leads with metal 'F'
      connectors provides a secure, reliable connection that also greatly reduces impulse
      noise pickup. Low cost antenna fly leads with right-angled plastic moulded
      connectors are a common cause of poor reception and impulse noise pickup.

**Digital TV or some channels (services) may not have yet commenced in your area.**

There are some towns and regions in Australia that cannot yet receive digital television. In some towns and regions not all broadcasters have commenced their digital services. You can check the digital coverage for your area at the Reception Locator on the DBA website (www.dba.org.au/reception).

**Signal Strength**

The signal received may be too poor to allow the digital receiver to find some or all available channels.

Your old antenna may not be designed to receive all DTV channels.

Antenna reception performance has deteriorated due to weathering, corrosion of antenna connections / cabling and broken elements.

If you live within 5-10Km of DTV transmission towers, a combined VHF/UHF antenna should be adequate. Outside this area, separate VHF and UHF antennas provide superior reception performance.

Depending on DTV signal conditions, some installations may instead require a VHF/UHF masthead amplifier.

In a shared antenna system the existing Master Antenna TV (MATV) system may have been originally designed for analogue PAL TV only, and may require a substantial upgrade or replacement to also carry DTV signals. Please consult your Body Corporate.

For your safety any external aerial should be installed by a reputable qualified installer and should comply with Australian Standard AS1417.1.

**Some channels display 'No Signal' or 'Loss of Signal'**

Received signal is "too weak" (i.e.; poor quality) to generate a stable picture

Please check antenna & cabling or contact your local TV antenna installer.

**Picture regularly breaks up on some channels**

The received signal may be too weak to allow the digital TV receiver to reliably "lock" to the desired signal and generate a stable picture.

Please check antenna & cabling or contact your local TV antenna installer.

**Impulse Noise**

Interference from household appliances such as lights, refrigerators, washing machines, electric stoves etc may cause pictures to break up and audio to mute or distort momentarily

In the first instance, replace antenna fly-lead with a quality RG6 or RG59 Quad Shield 75 ohm coaxial cable fly lead. If problem persists, check / improve antenna & cabling or contact your local TV antenna installer. The possible cause could be poor quality coaxial cable installed in the walls or ceiling picking up impulse noise. This coaxial cable will need to be replaced with quad shield.

A masthead amplifier may be "over-boosting" the antenna signal, which is overloading the DTV tuner, resulting in poor reception on some or all channels.

Please contact your local TV antenna installer.

**Picture very infrequently breaks up on some or all channels**

Electrical atmospheric interference caused by local or distant lighting storms or heavy rain with wind in "leafy" locations may cause pictures to break up and audio to mute or distort momentarily.

Impulse noise interference from an infrequently used electrical appliance, or a passing vehicle or lawn mower with a "noisy" ignition system

# 9 Technical Specifications

| Features | Specifications | Parameters |
|---|---|---|
| Tuner/Demodulator | Input frequency | VHF, UHF Band |
| | Standard | DVB-T (ETS 300 744) |
| | Channel Bandwidth | 7MHz, Australian Channel |
| | COFDM System | 2k, 8k carrier<br>Hierarchical supported |
| | Demodulation type | QPSK, 16QAM, 64QAM |
| | Guard Interval | 1/32, 1/16, 1/8, 1/4 active symbol duration |
| | FEC | 1/2, 2/3, 3/4, 5/6, 7/8 |
| System | CPU | 32-bit RISC |
| | Transport | DVB De-multiplexer |
| (SD/HD) | Standard | ISO/IEC 11172-2 MPEG-1<br>ISO/IEC 13818-2 MPEG-2 MP@ML and MP@HL |
| | Field / Frame rate | 50 / 25 Hz |
| | HD/SD decoding capability, interlaced/progressive mode | 1080i, 720p, 576p and 576i |
| | Aspect ratio | 4:3 and 16:9<br>Letter Box supported |
| | Output modes | Native HD mode:<br>1080i(1125) / 720p / 576p<br>CRT HD mode:<br>1080i(1250) / 1080i letterboxed in 1152i / 576p<br>SD mode:<br>576i<br>Output format changed by specific hot-key<br>(software switchable) |
| Caption / Teletext | Decoding and display of Closed Captions | Activated by specific hot-key |
| | Decoding and display of Teletext (ETS 300 706, Level 1.5, TOP) | Activated by specific hot-key |
| Audio Decoder | Standard | ISO/IEC 11172-3 MPEG-1 layer I and layer II<br>ISO/IEC 13818-3 MPEG-2 Layer II<br>Dolby Digital |
| | Sampling rate | 32, 44.1, 48 and 96 kHz |
| | Digital Audio SPDIF Output format | IEC-60958 for PCM data<br>IEC-61937 for encoded Audio Data |
| Software Upgrade | Support Over Air Download and Download through RS-232 port | |
| Rear panel interface | RF input connector | IEC type, Female, 75 Ohm |
| | Loop through Output connector | IEC type, Male, 75 Ohm |
| | Selection switch for HDTV / SDTV | HD (YPbPr) / HD (RGB) / SD |
| | CVBS composite SD video Outputs and Stereo Audio Outputs | 1 RCA connector for TV video with OSD<br>2 RCA connectors for TV audio, adjustable volume<br>1 RCA connector for VCR w/o OSD<br>2 RCA connectors for VCR audio. fixed volume |
| | Y/C SD video output | S-VHS |
| | Y/Pb/Pr component video Output | 3 RCA connectors |
| | R/G/B/HS/VS | DB-15 (Female) |
| | Digital Audio SPDIF | Coaxial / Optical |
| | Serial port | RS-232 (Female, DB-9) |

| User interface | Front panel | 4 Keypads, 7-segment display and 3 LED indicators<br>IR Sensor |
|---|---|---|
| Power requirements | Mains input voltage | 100-250VAC~ |
| | Mains input frequency | 50/60 Hz |
| | Power consumption | Normal operation: 22Watt.<br>Standby mode: 8Watt |
| Environmental Condition | Temperature | 32~108°F (0~40°C) |
| | Relative Humidity | 20~80% (Without condensation) |
| Dimension | Dimension | 365 x 245 x 60 mm |
| | Weight | 2.45kg |
| Accessory | Remote Controller Battery | AAA 1.5V x 2 |
| | User's manual | |
| | A/V Cable | 1.8m, R/G/B for component video<br>1.8m, R/W for stereo audio |
| | RF Cable | 1.8m, 3C2V, IEC Male/Female |
| EMC / Safety | Standard | AS/NZS CISPR 13:2003 Class B<br>AS/NZS 60065: 2000 |

## Customer's Record

The serial number of this product can be found on its rear cover and on the carton. It is recommended that you note the serial number and other details in the space provided and retain this booklet in a safe place as a permanent record of your purchase to aid in identification in the event of theft or loss.

Model No.          _____

Serial No.          _____

Purchase Date    _____

Purchased From  _____

# WARRANTY

1. The product is warranted for 12 months from the date of purchase. Subject to the conditions of this warranty Panasonic or its Authorised Service Centre will perform necessary service on the product without charge for parts or labour if, in the opinion of Panasonic, the product is found to be found to be faulty within the warranty period.

2. This warranty only applies to products sold by Panasonic Australia or its Authorised Distributors or Dealers and only where the products are used and serviced within Australia or it's territories. Warranty cover only applies to service carried out by a Panasonic Authorised Service Centre and only if valid proof of purchase is presented when warranty service is requested.

3. This warranty only applies if the product has been installed and used in accordance with the manufacturer's recommendations (as noted in the operating instructions) under normal use and reasonable care (in the opinion of Panasonic). This warranty covers normal office use on office related products and normal domestic use on other products (but not rentals use) and does not cover damage, malfunction or failure resulting from use of incorrect voltages, accident, misuse, neglect, build-up of dirt or dust, abuse, maladjustment of customer controls, main supply problems, thunderstorm activity, infestation by insects or vermin, tampering or repair by unauthorised persons (including unauthorised alterations), exposure to abnormally corrosive conditions or any foreign object or matter having entered the product.

4. If warranty service is required you should:
   - Telephone Panasonic's Customer Care Centre on 132600 for the name/address of the nearest Authorised Service Centre.
   - Provide a copy of your purchase receipt as proof of date of purchase.
   - Send or bring the product to a Panasonic Authorised Service Centre. Please note that freight to and / or from your nearest Authorised Service Centre must be arranged by you.

5. The warranties hereby conferred do not extend to any costs associated with the delivery, handling, freighting, or transportation of the product or any part thereof or replacement of and do not extend to any damage or loss occurring during, or associated with, transit.

Panasonic Authorised Service Centres are located in major metropolitan areas and most regional centres of Australia, however, coverage will vary dependant on product. For advice on exact Authorised Service Centre locations for your product, please telephone our Customer Care Centre on 132600.

Unless otherwise specified to the consumer the benefits conferred by this express warranty are additional to all other conditions, warranties, guarantees, rights and remedies expressed or implied by the Trade Practices Act 1974 and similar consumer protection provisions contained in legislation of the States and Territories and all other obligations and liabilities on the part of the manufacturer or supplier and nothing contained herein shall restrict or modify such rights, remedies, obligations and liabilities.

**THIS WARRANTY AND THE PURCHASE DOCKET (OR SIMILAR PROOF OF PURCHASE) SHOULD BE RETAINED BY THE CUSTOMER AT ALL TIMES**

**Panasonic**
*Customer*
**care**
*Centre*
*132600*