Panasonic®

Operating Instructions
Plasma Television

VIErA

Thank you for purchasing this Panasonic product.
Please read these instructions before operating your set and retain
them for future reference.
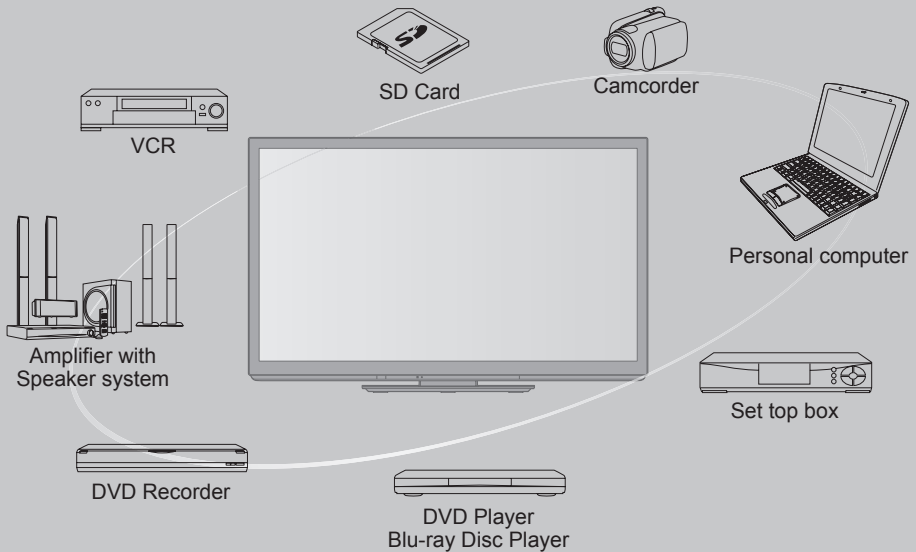The images shown in this manual are for illustrative purposes only.

English

Enjoy viewing 3D images and experience an amazing level of multimedia excitement

Sharp pictures with HDMI terminal
Create home theatre and DVD recorder link-ups with "VIERA Link"
without complicated settings!

Enjoy rich multimedia

SD Card

Camcorder

VCR

Personal computer

Amplifier with
Speaker system

Set top box

DVD Recorder

DVD Player
Blu-ray Disc Player

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Contents

Be Sure to Read

Quick Start Guide

Basic Features

Advanced Features

Technical

Safety Precautions

Warning

Handling the mains plug and lead
- Insert the mains plug fully into the socket outlet. (If the mains plug is loose, it could generate heat and cause fire.)
- Ensure that the mains plug is easily accessible.
- Ensure the earth pin on the mains plug is securely connected to prevent electrical shock.
  - An apparatus with CLASS I construction shall be connected to a mains socket outlet with a protective earthing connection.
- Do not touch the mains plug with a wet hand. (This may cause electrical shock.)
- Do not damage the mains lead. (A damaged lead may cause fire or electrical shock.)
  - Do not move the TV with the lead plugged in the socket outlet.
  - Do not place a heavy object on the lead or place the lead near a high-temperature object.
  - Do not twist the lead, bend it excessively, or stretch it.
  - Do not pull on the lead. Hold onto the mains plug body when disconnecting the lead.
  - Do not use a damaged mains plug or socket outlet.

If you find any abnormality, remove the mains plug immediately!
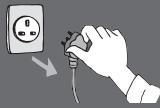
- Mains plug types vary between countries.

Power source	Do not insert foreign objects into the TV
• This TV is designed to operate on: • AC 220 - 240 V, 50 / 60 Hz (TH-P65VT30P: AC 110 - 240 V, 50 / 60 Hz)	• Do not allow any objects to drop into the TV through the air vents. (Fire or electrical shock may result.)

Do not remove covers and NEVER modify the TV yourself	Do not place the TV on sloped or unstable surfaces
• Do not remove the rear cover as live parts are accessible when it is removed. There are no user serviceable parts inside. (High-voltage components may cause serious electrical shock.) • Have the TV checked, adjusted, or repaired at your local Panasonic dealer.	• The TV may fall off or tip over.

Do not expose to rain or excessive moisture	Use only the dedicated pedestals / mounting equipment
• To prevent damage which might result in electric shock or fire, do not expose this TV to rain or excessive moisture. This TV must not be exposed to dripping or splashing water and objects filled with liquid, such as vases, must not be placed on top of or above the TV.	• Using an unapproved pedestal or other fixtures may make the TV unstable, risking injury. Be sure to ask your local Panasonic dealer to perform setup. • Use approved pedestals (p. 6) / wall-hanging brackets (p. 9).

Do not expose to direct sunlight and other sources of heat	Do not allow children to handle SD Card
• Avoid exposing the TV to direct sunlight and other sources of heat. **To prevent the spread of fire, keep candles or other open flames away from this product at all times**	• As with any small object, SD Cards can be swallowed by young children. Please remove SD Card immediately after use and store out of reach of children.

Caution

This appliance is intended for use in tropical climates

When cleaning the TV, remove the mains plug
● Cleaning an energised TV may cause electrical shock.

When the TV is not going to be used for a long period of time, remove the mains plug
● This TV will still consume some power even in the Off mode, as long as the mains plug is still connected to a live socket outlet.

Transport only in upright position
● Transporting the TV with its display panel facing upward or downward may cause damage to the internal circuitry.

Allow sufficient space around the TV for radiated heat

Minimum distance

10
10   10
7
(cm)

● When using the pedestal, keep the space between the bottom of the TV and the surface where the TV is set.
● If using a Wall-hanging bracket, refer to its manual.

Do not block the rear air vents
● Blocked ventilation by newspapers, table cloths, curtains, etc. may cause overheating, fire or electrical shock.

Do not apply strong force or impact to the display panel
● This may cause damage resulting in injury.

Do not expose your ears to excessive volume from the headphones
● Irreversible damage can be caused.

The TV is heavy. Handle the TV by 2 or more people. Support as shown to avoid injury by the TV tipping or falling.
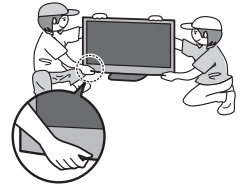
Notes

Do not display a still picture for a long time

This causes the image to remain on the plasma screen ("image retention"). This is not considered a malfunction and is not covered by the warranty.

Typical still images
● Programme number and other logos
● Image displayed in 4:3 mode

● Video game
● Computer image

To prevent image retention, contrast is lowered automatically after a few minutes if no signals are sent or no operations are performed. (p. 84)

Auto power standby function
● The TV will automatically go into Standby mode in the following conditions:
  • no signal is received and no operation is performed for 30 minutes in TV mode
  • [Off Timer] is active in the Timer Menu (p. 18)
  • no operation is performed for the period selected in [Auto Standby] (p. 40)

Keep the TV away from these types of equipment
● Electronic equipment
  In particular, do not place video equipment near the TV. Electromagnetic interference may distort images / sound.
● Equipment with an infrared sensor
  This TV also emits infrared rays. This may affect operation of other equipment.
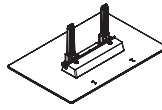
5

Accessories / Options

Standard accessories

Remote Control
●N2QAYB000586

Batteries for the Remote Control (2)
●R6 (AA)

Pedestal
➡ **(p. 7)**

Ferrite core
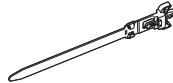●J0KG00000011
➡ **(p. 75)**

Use the Ferrite cores to comply with the EMC standard.

Wireless LAN Adaptor
➡ **(p. 15)**

(TH-P65VT30D, TH-P65VT30K, TH-P65VT30T)
●N5HBZ0000056 ●K2KYYYY00132

Clamper
➡ **(p. 10)**

3D Eyewear set (2)
➡ **(p. 26)**

Operating Instructions

Terminal adaptors

RF adaptor
●K1TYYYY00159
➡ **(p. 10, 74)**

COMPONENT adaptor
●K2KYYYY00137
➡ **(p. 74)**

Composite adaptor (2)
●K2KYYYY00136
➡ **(p. 74, 75)**

Audio adaptor (2)
●K2KYYYY00138
➡ **(p. 74)**

Optical digital audio adaptor
●K7CXGYC00002
➡ **(p. 74)**

PC adaptor
●K1HY20YY0007
➡ **(p. 75)**

●This product contains possibly dangerous parts (such as plastic bags), which can be breathed in or swallowed by young children accidentally. Keep these parts out of reach of young children.

Inserting and removing remote's batteries

1 Pull Open

Hook

2 Close

Note the correct polarity (+ or -)
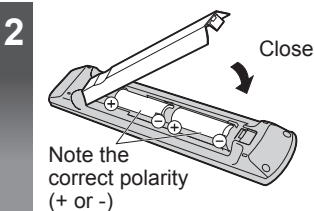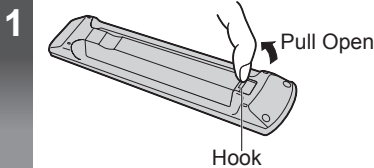
(**Caution**)
●Incorrect installation may cause battery leakage and corrosion, resulting in damage to the remote control.
●Do not mix old and new batteries.
●Do not mix different battery types (such as alkaline and manganese batteries).
●Do not use rechargeable (Ni-Cd) batteries.
●Do not burn or breakup batteries.
 Batteries must not be exposed to excessive heat such as sunshine, fire or the like.
●Do not disassemble or modify the remote control.

Attaching and removing the pedestal

Warning

Do not disassemble or modify the pedestal.
● Otherwise the TV may fall over and become damaged, and personal injury may result.

Caution

Do not use any pedestal other than that provided with this TV.
● Otherwise the TV or the display may fall over and become damaged, and personal injury may result.
Do not use the pedestal if it becomes warped or physically damaged.
● If you use the pedestal while it is physically damaged, personal injury may result. Contact your nearest Panasonic dealer immediately.
During set-up, make sure that all screws are securely tightened.
● If insufficient care is taken to ensure screws are properly tightened during assembly, the pedestal will not be strong enough to support the TV, and it might fall over and become damaged, and personal injury may result.
Ensure that the TV does not fall over.
● If the TV is knocked or children climb onto the pedestal with the TV installed, the TV may fall over and personal injury may result.
Two or more people are required to install and remove the TV.
● If two or more people are not present, the TV may be dropped, and personal injury may result.
When removing the pedestal from the TV, do not remove the pedestal by the methods other than the specified procedure (p. 8).
● Otherwise the TV and / or pedestal may fall over and become damaged, and personal injury may result.

Ⓐ **Assembly screw (6)**
 ● M5 × 30 (mm)

Ⓑ **Assembly screw (4)**
 ● M6 × 25 (mm)

Ⓒ **Pole (2)**
 ● TBL5ZA3125

Ⓓ **Base**
 ● TBL5ZX0183

Ⓔ **Allen wrench**
 ● TKKX5123
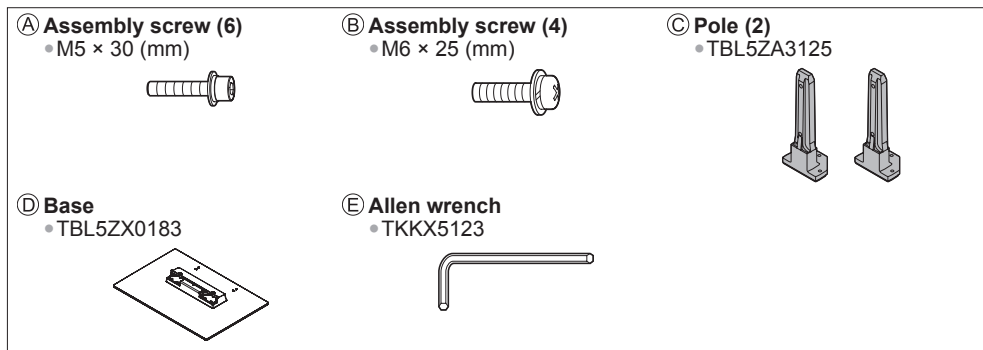
Assembling the pedestal
Use the assembly screws Ⓐ to fasten the poles Ⓒ to the base Ⓓ securely.
● Make sure that the screws are securely tightened.
● Forcing the assembly screws the wrong way will strip the threads.
● Use the allen wrench Ⓔ to tighten the screws.

Front
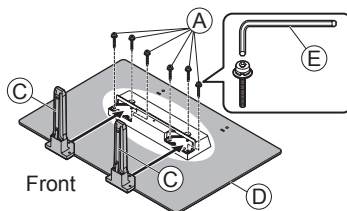
Securing the TV

Insert the pole into the TV, and then fasten securely
with the assembly screws Ⓑ.
● Tighten the four assembly screws loosely at first,
 then tighten them firmly to fix securely.
● Carry out the work on a horizontal and level surface.

Bottom view

Rear side

Arrow mark

Hole for
pedestal installation

Pole

Ⓓ

Removing the pedestal from the TV

Be sure to remove the pedestal in the following way when using the wall hanging bracket or
repacking the TV.

1 Remove the assembly screws Ⓑ from the TV.
2 Pull out the pedestal from the TV.
3 Remove the assembly screws Ⓐ from the pole.

Optional accessories

Please contact your nearest Panasonic dealer to purchase the recommended optional accessories.
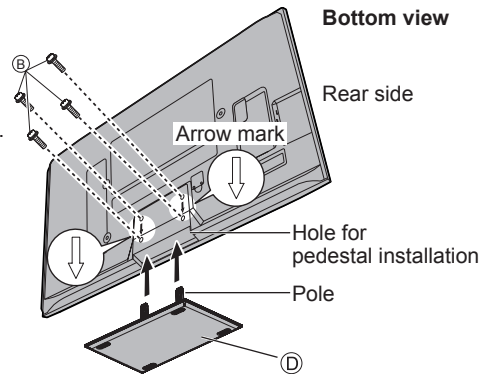For additional details, please refer to the manual of the optional accessories.

3D Eyewear
(Battery type)
● TY-EW3D10W
(Rechargeable
type)
● TY-EW3D2SW
● TY-EW3D2MW
● TY-EW3D2LW

● Product information (Model No. and release date etc.) is subject to change
 without notice.
● For more product information (English only)
 http://panasonic.net/avc/viera/3d/asia.html

**Communication
Camera**
● TY-CC10W

⟮ **Caution** ⟯

● This camera can be used on VIERA Connect (p. 17).
● Please also read the manual of the camera.
● Depending on the area, this optional accessory may not be available.
 For details, consult your local Panasonic dealer.

Wall-hanging bracket
- TY-WK6P1RW The angle of wall-hanging bracket can be adjusted in "zero tilting (vertical)" and "5 or 10-degree tilting" for this TV.

Rear of the TV

684 mm

300 mm
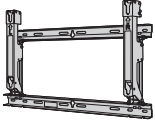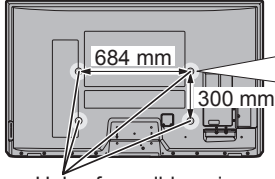
Holes for wall-hanging bracket installation

Screw for fixing the TV onto the wall-hanging bracket (not supplied with the TV)

Depth of screw: minimum 10 mm maximum 16 mm

Screw Thread Type: M8

(View from the side)

Warning
- Using other wall-hanging brackets, or installing a wall-hanging bracket by yourself have the risk of personal injury and product damage. In order to maintain the unit's performance and safety, be absolutely sure to ask your dealer or a licensed contractor to secure the wall-hanging brackets. Any damage caused by installing without a qualified installer will void your warranty.
- Carefully read the instructions accompanying optional accessories, and be absolutely sure to take steps to prevent the TV from falling off.
- Handle the TV carefully during installation since subjecting it to impact or other forces may cause product damage.
- Take care when fixing wall brackets to the wall. Always ensure that there are no electrical cables or pipes in the wall before hanging bracket.
- To prevent fall and injury, remove the TV from its fixed wall position when it is no longer in use.

Accessories / Options

Basic Connection

External equipment and cables shown are not supplied with this TV.
Please ensure that the unit is disconnected from the mains socket before attaching or disconnecting any leads.

Rear of the TV

Aerial

Satellite dish

HDMI 1   AV IN
ANALOG
AUDIO
via AV2

Set top box

Fully wired HDMI
compliant cable

Mains lead
AC 220 - 240 V, 50 / 60 Hz
(TH-P65VT30P:
AC 110 - 240 V, 50 / 60 Hz)

RF adaptor
(supplied)

RF cable
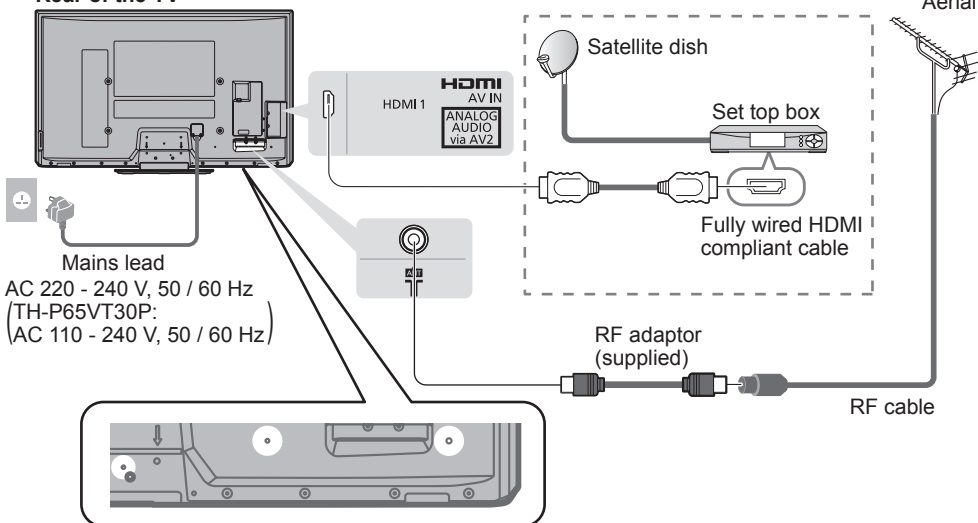
■ Clamper

Attach the clamper	Bundle the cables	To remove from the TV:	To loosen:
hole Insert the clamper in a hole	① ② Set the tip in the hooks hooks	② ① snaps ① Keep pushing both side snaps	② knob ① Keep pushing the knob

> **Note**
- Keep RF (antenna) cable away from the mains lead to avoid and minimise mains interference pickup.
- Do not place the RF cable under the TV.
- To obtain optimum quality picture and sound, an aerial, the correct cable (75 Ω coaxial), and the correct terminating plug are required.
- If a communal aerial system is used, you may require the correct connection cable and plug between the wall aerial socket and the TV.
- Your local Television Service Centre or dealer may be able to assist you in obtaining the correct aerial system for your particular area and the accessories required.
- Any matters regarding aerial installation, upgrading of existing systems or accessories required, and the costs incurred, are the responsibility of you, the Customer.
- To obtain optimum quality picture, select either an Aerial or a cable TV network.
- VIERA Link connection ➡ **(p. 68)**
- Other equipment connection ➡ **(p. 73 - 75)**
- Read the manual of the equipment, too.

Identifying Controls

TV
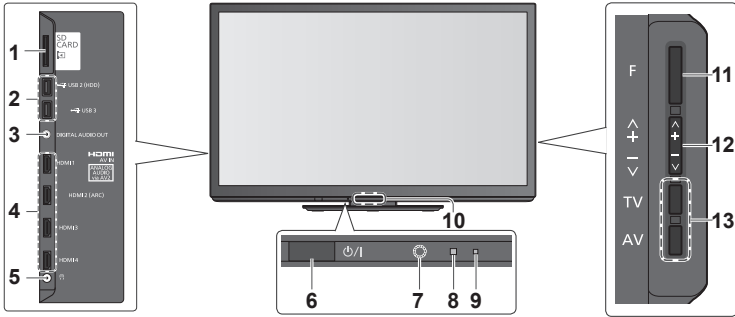
1 SD Card slot

2 USB2 / 3 port

3 DIGITAL AUDIO OUT terminal

4 HDMI1 - 4 terminal

5 Headphones jack

6 Mains power On / Off switch
- Use to switch the mains power.
  If you turned the TV Off during Standby mode by the remote control last time, the TV will be in Standby mode when you turn the TV On with Mains power On / Off switch.

7 Remote control signal receiver
- Do not place any objects between the TV remote control signal receiver and remote control.

8 C.A.T.S. (Contrast Automatic Tracking System) sensor
- Senses brightness to adjust picture quality when [Eco Mode] in the Picture Menu is set to [On] ➡ **(p. 36)**

9 Power LED
- Red: Standby
  Green: On
  Orange (flash): [USB Charge in Standby] is [On]
- When using the remote control, indicates the TV has received a command.

10 Infrared transmitter for 3D Eyewear
- Do not place any objects between the transmitter and 3D Eyewear.

11 Function select
- [Volume] / [Contrast] / [Brightness] / [Colour] / [Sharpness] / [Tint] (NTSC signal) / [Bass] ([Music] or [Speech] mode in the Sound Menu) / [Treble] ([Music] or [Speech] mode in the Sound Menu) / [Balance] / [Auto Tuning]
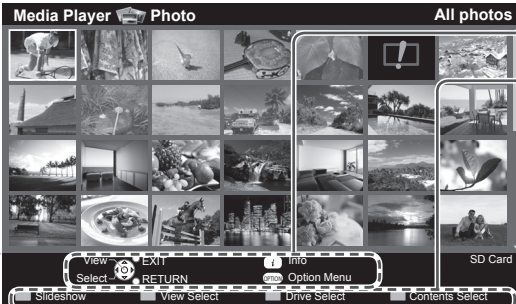
12 Channel Up / Down, Value change (when using the F button), Switching the TV On

13 Changes the input mode

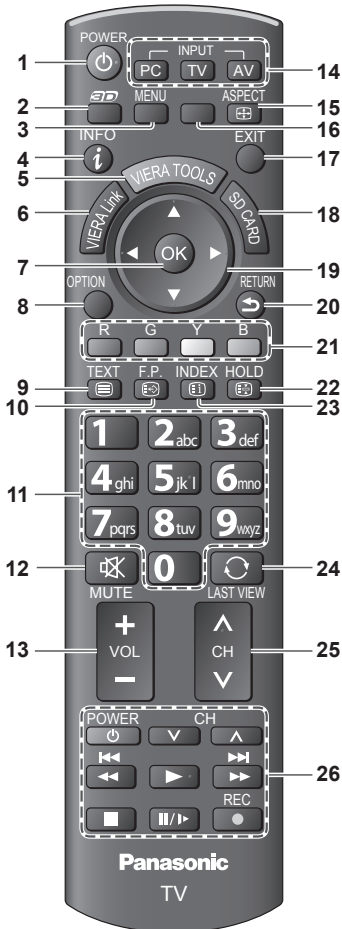## About the Operation Guide - On Screen Displays

The Operation Guide is displayed at the bottom of the on Screen Displays.
The button used on this screen and manner of operation is displayed.

Example: Media Player

Operation Guide

Identifying Controls

7 **OK**
 • Confirms selections and choices
 • Press after selecting channel positions to quickly change programme

8 **[Option Menu]** ⇒ **(p. 19)**
 • Easy optional setting for viewing, sound, etc.

9 **Teletext**∗ ⇒ **(p. 21)**
 • Switches to teletext mode

10 **Favourite Page**∗ ⇒ **(p. 21)**
 • Calls up the teletext page stored in blue button.

11 **Numeric buttons**
 • Changes channel and teletext pages
 • When in Standby mode, switches TV On

12 **Sound Mute**
 • Switches sound mute On or Off

13 **Volume Up / Down**

14 **Input mode selection**
 • PC - switches to PC input mode ⇒ **(p. 23)**
 • TV - switches to TV mode ⇒ **(p. 18)**
 • AV - switches to AV input mode from Input Selection list ⇒ **(p. 23)**

15 **Aspect** ⇒ **(p. 20)**
 • Changes aspect ratio

16 **[VIERA Connect]** ⇒ **(p. 17)**
 • Displays VIERA Connect home screen

17 **Exit**
 • Returns to the normal viewing screen

18 **[Media Player]** ⇒ **(p. 48)**
 • Switches to SD Card and USB device viewing / listening mode

19 **Cursor buttons**
 • Makes selections and adjustments

20 **Return**
 • Returns to the previous menu / page

21 **Coloured buttons**
 • Used for the selection, navigation and operation of various functions

22 **Hold**
 • Freeze / unfreeze picture ⇒ **(p. 18)**
 • Holds the current teletext page (teletext mode)∗ ⇒ **(p. 21)**

23 **Index**∗ ⇒ **(p. 21)**
 • Returns to the teletext index page (teletext mode)

24 **Last View** ⇒ **(p. 19)**
 • Switches to previously viewed channel or input modes

25 **Channel Up / Down**
 • Selects channel in sequence

26 **Connected equipment operations**
 ⇒ **(p. 24, 55)**

∗ Some countries do not provide a teletext service

1 **Standby On / Off switch**
 • Switches TV On or Off standby

2 **3D button** ⇒ **(p. 30)**
 • Switches to the viewing mode between 2D and 3D

3 **[Main Menu]** ⇒ **(p. 34)**
 • Press to access Picture, Sound and Setup Menus

4 **Information** ⇒ **(p. 19)**
 • Displays channel and programme information

5 **VIERA TOOLS** ⇒ **(p. 33)**
 • Displays some special feature icons and accesses easily

6 **[VIERA Link Menu]** ⇒ **(p. 70)**
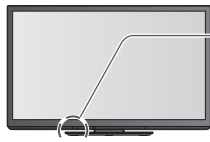 • Accesses VIERA Link Menu

Auto Tuning

Search and store TV channels automatically.
●These steps are not necessary if the setup has been completed by your local dealer.

1 Plug the TV into mains socket and switch On
● You can now use the remote control to turn On the TV or switch the TV to Standby mode. (Power LED: On)

2 Select your language

OSD Language		
English	ภาษาไทย	العربية
中文	Tiếng Việt	فارسى
हिन्दी	Indonesia	Français

① select
② set

3 Select your country

Country	
Thailand	Vietnam
India	Malaysia
Singapore	Indonesia
United Arab Emirates	Saudi Arabia
Kuwait	Others

① select
② set

4 Select your area

Channel Plan
Asia/W.Europe
CIS/E.Europe
China
Hong Kong
NZ/Indonesia
CATV/Other

① select
② access

When selecting CATV / Other, press the OK button, and then select the Channel Plan from Indian CATV, South Africa, American System, American CATV or Japan.

Auto Tuning starts

Auto Tuning	
2	CH4
Scan	1 ▮▮▮▮▮▮▮ 120
● EXIT	
● RETURN	

●Auto Tuning will start to search for TV channels and store them. The sorted channel order depends upon the TV signal, the broadcasting system and reception conditions.

5 Setup the network connection
Select the network type

Network Setup

Select Wired or Wireless
Wired Wireless Set later

ETHERNET

[Wired]: wired connection
  ➡ **(p. 15)**
[Wireless]: wireless connection
  ➡ **(p. 16)**

① select
② access

●To setup later on or skip this step

➡ Select [Set later] or EXIT

POWER
INFO
EXIT
OK
RETURN
R Y

1 2abc 3def
4ghi 5jkl 6mno
7pqrs 8tuv 9wxyz
0

Panasonic
TV

6 Select [Home]

Please select your viewing environment. *
| Home | Shop |
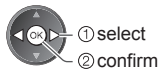
①select
②confirm

Auto Tuning is completed

＊**Viewing environment mode**
Home: Recommended mode for viewing at home. Select [Home] for optimal picture / power
  consumption. [Viewing Mode] is set as [Normal] (p. 35).
Shop : Demonstration mode to explain main features of this TV (for in-store display). [Viewing Mode] is
  set as [Dynamic] (p. 35).

To return to viewing environment selection mode if you selected [Shop]

RETURN

Shop

You have selected shop mode

Automatic Demo
| Off | On |

RETURN

Please select your viewing environment.
| Home | Shop |
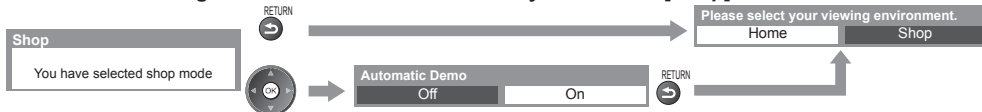
● To change viewing environment mode later on, reset all settings by accessing Shipping Condition.
  ➡ **[Shipping Condition] (p. 47)**

**If you connect the Wireless LAN Adaptor later on, the confirmation screen will be displayed for
the setup**

Wireless LAN adaptor connection
Wireless LAN adaptor connected, do you want to
set it up?
No - Exit
Current network type : Wireless
| Yes | No |
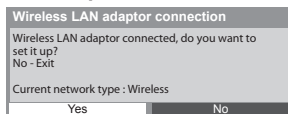
● To setup the Wireless LAN connection ➡ **(p. 63)**

Setup the network connection

Set up the network connection to enable the network service functions such as VIERA Connect, etc. (p. 17, 67)
● To set up the wireless connection, the Wireless LAN Adaptor is required.
● Please note that this TV does not support wireless public access points.
● Ensure the network connections and network environment are completed before starting setup.

1 **Connect the LAN cable or Wireless LAN Adaptor**

To enable the network service functions (VIERA Connect, etc.), you need to connect the TV to a broadband network environment.

Rear of the TV

Wireless connection

Wireless LAN Adaptor (supplied: TH-P65VT30D, TH-P65VT30K, TH-P65VT30T)
● Connect to the USB 1, 2 or 3 port.

Access point

Internet environment

■ **Setup Wireless LAN Adaptor**
Insert straight in

or

Wired connection

LAN cable

Internet environment

● If you do not have any broadband network services, please consult your retailer for assistance.
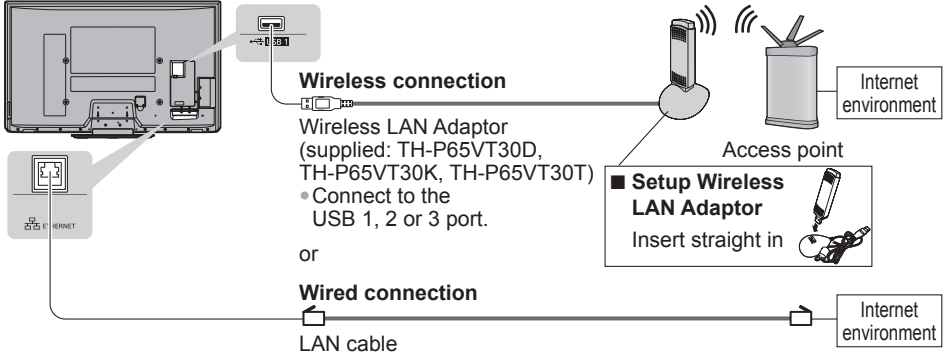● For more information of the network connections ➡ **(p. 59)**

Caution

● To use the Wireless LAN Adaptor, an Access Point needs to be obtained.
● It is recommended to use the Wireless LAN Adaptor with the extension cable.
● To avoid radio wave interference, keep the TV away from the devices such as other wireless LAN devices, microwaves and the devices that use 2.4 GHz and 5 GHz signals when using the Wireless LAN Adaptor.
Otherwise malfunction may occur.

2 **Select [Wired] or [Wireless]**

Network Setup

Select Wired or Wireless
Wired Wireless Set later

ETHERNET
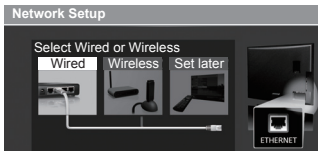
① select
② access

3 **Start the settings**
■ **[Wired]**
Select [Auto]

Acquire IP Address
Auto Manual

① select
② access

● To set manually, select [Manual] and set each item.
For details ➡ **(p. 61 - 62)**

Connection Test
☑ Check network cable connection.
☑ Check acquired IP address.
☑ Check for devices using same IP address.
☑ Check gateway connection.
☑ Check server connection.
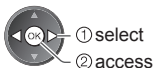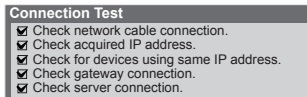
Automatically setup is done and the test of the network connection starts.

☑ **: succeeded**
The test is successful and the TV is connected to the network.

☒ **: failed**
Check the settings and connections, and then select [Retry].

Auto Tuning

15

3 ■ [Wireless]
Select the connection type

Connection Type
Please select network connection type.

Search for access point
WPS(Push button)

①select
②confirm

• If your access point supports WPS (Push button), then select this option. If not, select [Search for access point].

■ [Search for access point]
Access points found automatically are listed.

Available Access Points

No.	SSID	Wireless type	Encrypt	Reception
1	Access Point A	11n(2.4GHz)	🔒	▥▥▥
2	Access Point B	11n(5GHz)	🔒	▥▥▥
3	Access Point C	11n(5GHz)		▥▥▥

1 Select your desired access point

①select
②access

• To search access points again Y
• For the information of the highlighted access point INFO ⓘ
• To set manually (p. 63) R

Encryption Key Setting
Connection will be made with the following settings:-
SSID : Access Point A
Authentication type : WPA-PSK
Encryption type : TKIP

Please input the encryption key.

Encryption key

2 Access the encryption key input mode

• If the selected access point is not encrypted, the confirmation screen will be displayed. It is recommended to select the encrypted access point.

Access Point Settings
Encryption key

```
A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z    0 1 2 3 4 5 6 7 8 9 ! . : #
a b c d e f g h i j k l m n o p q r s t
u v w x y z ( ) + - . * _
```

3 Enter the encryption key of the access point
(Set characters one by one)

①select
②set

➡ Store RETURN ↩

• You can set characters by using numeric buttons.

Access Point Settings
Encryption key is set to:-
XXXXXXXX

Select 'Yes' to confirm.
Select 'No' to change.

Yes | No

4 Select [Yes]

①select
②set

• To re-enter the encryption key, select [No].
• If the connection has failed, check the encryption key, settings and positions of your access point. And then, follow the on screen instructions.

■ [WPS(Push button)]

WPS(Push button)
1) Please press the 'WPS' button on the access point until its light flashes.

2) When the light is flashing select 'Connect' on TV.

If you are unsure, please check the instruction manual of the access point.
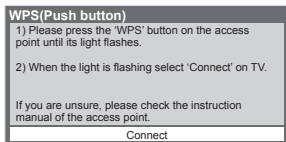
Connect

Press the WPS button on the access point until the light flashes. And then, press the OK button to connect the Wireless LAN Adaptor and the access point.

• Ensure that your access point supports WPS for this method.
• WPS: Wi-Fi Protected Setup™

Perform the connection test after the access point setting is finished

Connection Test
☑ Check access point connection.
☑ Check acquired IP address.
☑ Check for devices using same IP address.
☑ Check gateway connection.
☑ Check server connection.

☑ **: succeeded**
The test is successful and the TV is connected to the network.

☒ **: failed**
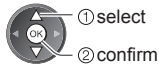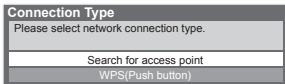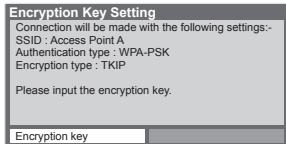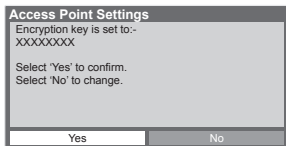Check the settings and connections, and then select [Retry].

• To set manually, select [Manual] and set each item. For details ➡ **(p. 63)**

4 Complete the network connection

(Press twice)

Using "VIERA Connect"

VIERA Connect is a gateway to the internet services unique to Panasonic and has expanded VIERA CAST features greatly.
VIERA Connect allows you to access some specific websites supported by Panasonic, and enjoy internet contents such as photos, videos, games, etc. from VIERA Connect home screen.
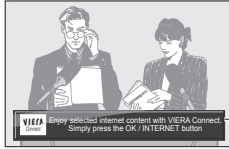● This TV has no full browser function and all features of websites may not be available.

1 Turn power on

● Mains power On / Off switch should be On. (p. 11)

Every time you turn on the TV, VIERA Connect introduction banner appears. The banner is subject to change.

VIERA Enjoy selected internet content with VIERA Connect
Connect Simply press the OK / INTERNET button

2 Access VIERA Connect

While the banner is displayed

or INTERNET **VIERA CAST**

● The button design varies depending on the remote control.

Example:

Welcome to VIERA Connect™

Don't show this message again
ENTER

● Depending on the usage conditions, it may take a while to read all the data.
● Messages might be displayed before VIERA Connect home screen.
Please read these instructions carefully and follow the on screen instructions.

Example: VIERA Connect home screen

● To go to the next level
➡ [MORE]
● To back to the previous level
➡ [BACK]

■ **To exit from VIERA Connect**

EXIT

● To set the VIERA Connect instruction banner display off
➡ **[VIERA Connect Banner] (p. 41)**

■ **How to operate VIERA Connect** (current as of January, 2011)
● To move the cursor / select the item

● To access

● To return to the previous screen
RETURN

● When the key words are displayed on colour bar

R G Y B

● When options with numbers are displayed

● To return to VIERA Connect home screen
INTERNET **VIERA CAST**

● Video communication requires an exclusive Communication Camera TY-CC10W.
➡ **"Optional accessories" (p. 8)**
For details, read the manual of the Communication Camera.
● You can connect a keyboard and a gamepad via USB port for character input and playing games in VIERA Connect. You can also operate the TV with a keyboard or a gamepad other than VIERA Connect features.
For more information ➡ **"USB connection" (p. 83)**

(Note)
● If you cannot access VIERA Connect, check the network connections and settings (p. 15 - 16).
● For more information of VIERA Connect ➡ **(p. 67)**

Watching TV

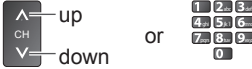|		
1	**Turn power on**	•Mains power On / Off switch should be On. (p. 11)

■ **VIERA Connect banner appears**

You can access to VIERA Connect and enjoy the various contents.
•To remove this banner, leave for about 5 seconds or press any buttons (except the buttons to access VIERA Connect).
•To set this banner display off
  ➡ **[VIERA Connect Banner] (p. 41)**

2	**Select TV mode**

3 Select a channel

∧ CH — up

∨ — down

or

•To select the two-digit channel number, e.g. 35
  3def 5jkl (in a short time)

•If one-digit channel number

  (quickly changes the channel)

•When the TV is switched to standby, there will be a clicking sound after a short delay. This is normal.

Other useful functions

Hold

Freeze / unfreeze picture

HOLD

Off Timer

Turn the TV off automatically after a fixed period of time [Off / 15 / 30 / 45 / 60 / 75 / 90 minutes]

1 Display the menu
MENU

2 Select [Timer]

VIERA Main Menu

- Picture
- Sound
- Timer
- Setup

3 Select [Off Timer] and set the time

Off Timer
Auto Standby

Off
15 minutes
30 minutes
45 minutes
60 minutes
75 minutes
90 minutes
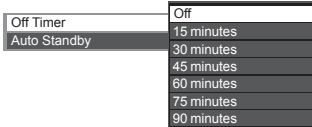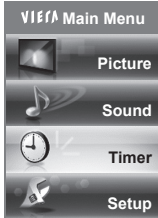
①select [Off Timer]
②access

③select the time
④store

•To cancel ➡ Set to [Off] or turn the TV off.
•To display the remaining time ➡ **"Display Information banner" (p. 19)**
•When the remaining time is within 3 minutes, the remaining time will flash on screen.

Display Information banner

Display Information banner

INFO
ⓘ • Also appears when changing a channel

TV —————— Input mode
1 ——————— Channel position
CH08 —————— Channel number
5.5MHz ————— Sound system
PAL ——————— Colour system
16:9 ——————— Aspect ratio

◯◯, I, II, ▽ Audio mode (p. 79)
� Sound mute On

1 - 90 Off Timer remaining time
• For settings ▶ **(p. 18)**

Teletext
(varies depending on the broadcasters)
Teletext service available

• To hide ▶ ◯ EXIT

Display the selectable settings for the current programme

1 Check or change the current programme status instantly
OPTION
◯

2 Select
①select
②access

3 Change
③select / change
④store
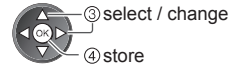
[Channel Colour Set]
Sets colour density ▶ **[Picture Menu] (p. 35)**

[Teletext Character Set]
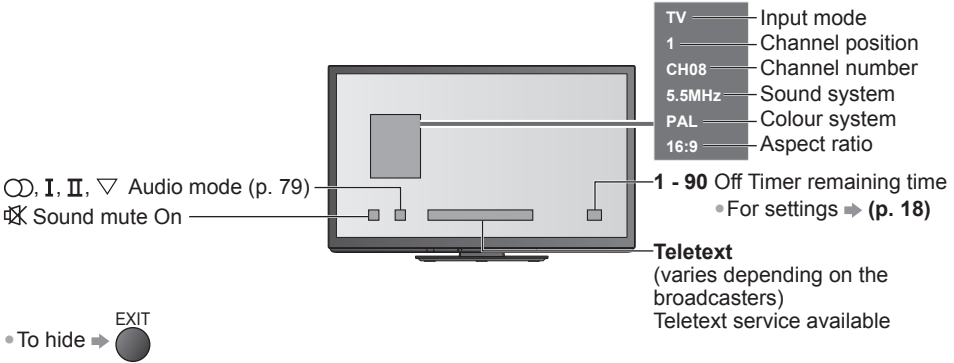Sets the teletext language ▶ **[Setup Menu] (p. 41)**

[MPX]
Selects multiplex sound (if available) ▶ **[Sound Menu] (p. 39)**

[Volume Correction]
Adjusts the volume of an individual channel or input mode ▶ **[Sound Menu] (p. 39)**

Last view

Switch to previously viewed channel or input mode easily
◯ • Press again to return to the present view.
LAST VIEW

(**Note**)
• Watching less than 10 seconds is not regarded as the previously viewed channel or input mode.

Change aspect ratio

Enjoy viewing the image at its optimum size and aspect.

Press repeatedly until you reach the desired mode

ASPECT

■ If Aspect Selection list is displayed

1 Display Aspect Selection list

ASPECT

Aspect Selection
16:9
14:9
Just
4:3
4:3 Full
Zoom1
Zoom2
Zoom3

2 While the list is displayed, select the mode

① select

② change

[16:9] Directly displays the image at 16:9 without distortion (anamorphic).

[14:9] Displays the image at the standard 14:9 without distortion.

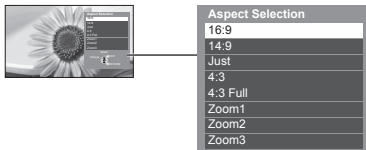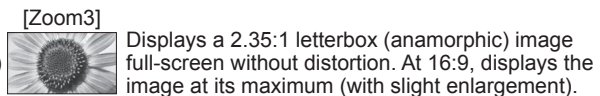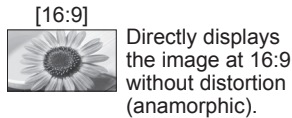[Just] Displays a 4:3 image full-screen. Stretching is only noticeable at the left and right edges.

[4:3] Displays the image at the standard 4:3 without distortion.

[4:3 Full] Displays a 4:3 image enlarged horizontally to fit the screen.
● HD signal only

[Zoom1] Displays a 16:9 letterbox or 4:3 image without distortion.

[Zoom2] Displays a 16:9 letterbox (anamorphic) image full-screen without distortion.

[Zoom3] Displays a 2.35:1 letterbox (anamorphic) image full-screen without distortion. At 16:9, displays the image at its maximum (with slight enlargement).

Note
- Only [16:9] and [4:3] are available in PC input mode.
- Aspect is fixed to [16:9] when [Viewing Mode] is set to [Game] in the Picture Menu.
- Not available in teletext service.
- Aspect mode can be memorised separately for each SD (Standard definition) and HD (High definition) signals.

Change OSD language

You can change language for on screen displays.

1 Display the menu
MENU

2 Select [Setup]

VIErA Main Menu

Picture
Sound
Timer
Setup

① select
② access

3 Select [OSD Language]

		1/2
Eco Navigation		
Child Lock		
Tuning Menu		
OSD Language	Access	
Display Settings		
VIERA Link Settings		
Network Setup		
DivX® VOD		
Advance(isfccc)	Off	
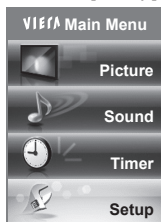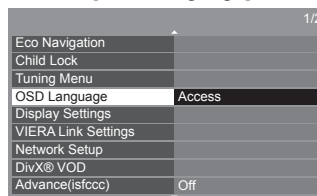
① select
② access

4 Select the language and set

OSD Language

English	ภาษาไทย	العربية
中文	Tiếng Việt	فارسی
हिन्दी	Indonesia	Français

① select
② set

Watching TV

Viewing Teletext

Teletext services are the text information provided by the broadcasters.
The features may vary depending on the broadcasters.

What is FASTEXT mode?

In FASTEXT mode, four differently coloured subjects are situated at the bottom of the screen. To access more information about one of these subjects, press the appropriately coloured button. This facility enables fast access to information on the subjects shown.

What is List mode?

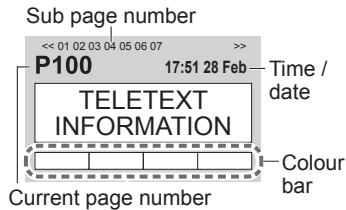In List mode, four differently coloured page numbers are situated at the bottom of the screen. Each of these numbers can be altered and stored in the TV's memory. ("Store frequently viewed pages" ⇒ p. 22)

■ **To change mode ⇒ [Teletext] in the Setup Menu (p. 41)**

1	**Switch to Teletext**
	• Displays the index page (content varies depending on the broadcasters)

Sub page number
```
<< 01 02 03 04 05 06 07        >>
P100            17:51 28 Feb
       TELETEXT
      INFORMATION
```
Time / date

Colour bar

Current page number

2	**Select the page**

up
or
down

R G Y B
(Corresponds to the colour bar)

■ **To adjust contrast**

MENU (press three times) ⇒ As the blue bar is displayed

■ **To return to TV** ⮕ TEXT or EXIT

Panasonic
TV

Functions (Teletext mode)

HOLD	Reveal hidden data
HOLD **Stop automatic updating** (If you wish to hold the current page without updating)	MENU ⇒ R Reveal hidden words e.g. quiz page answers
■ **To resume** HOLD	■ **To hide** R

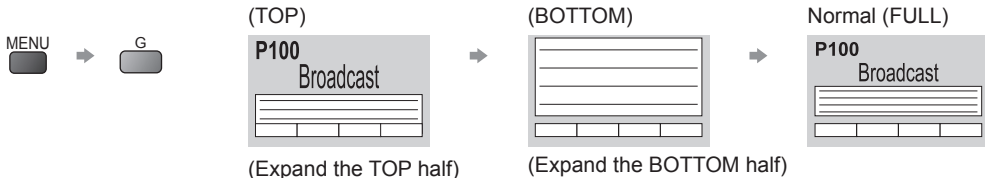| INDEX	Call up a favourite page
INDEX **Return to the main index page**	F.P. **View a favourite page stored** • Call up the page stored on the blue button (List mode). • Factory setting is "P103".

Viewing Teletext

View in multi window

Watch TV and Teletext in two windows at once

MENU
[ ] (press twice) ➡ [◄►/OK▲▼] Select Picture and text On or Off

● Operations can be made only in Teletext screen.

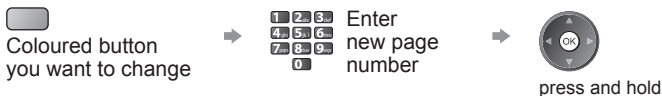## FULL / TOP / BOTTOM

| | (TOP) | (BOTTOM) | Normal (FULL) |

MENU [ ] ➡ [G]

P100 Broadcast (Expand the TOP half) ➡ (Expand the BOTTOM half) ➡ **P100** Broadcast

Store frequently viewed pages

Store frequently viewed pages in the colour bar (List mode only)

[ ] Corresponding colour button
(As page is displayed) ➡ [OK] press and hold

P100 Broadcast
| 101 | 200 | 400 | 888 | ── The number changes to white.

■ To change stored pages

[ ] Coloured button you want to change ➡ [1 2 3 / 4 5 6 / 7 8 9 / 0] Enter new page number ➡ [OK] press and hold
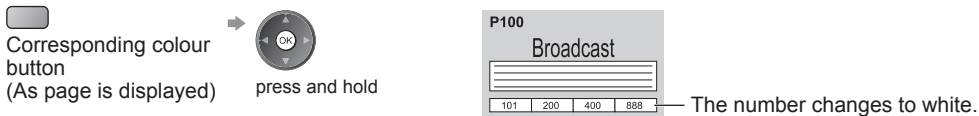
View sub page

View sub page (Only when teletext is more than one page)

[◄►/OK▲▼] `<<01 02 03 04 05` ── Appears at top of the screen

■ To view specific sub page

MENU [ ] ➡ [B]

T**** Broadcast ➡ Enter the 4-digit number example : P6
[0 0 0 6] ➡ T0006
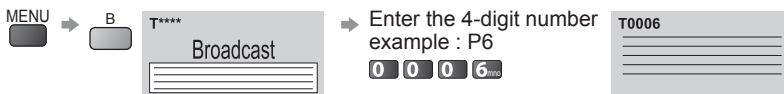
● Sub pages:
The number of sub pages varies depending on the broadcasters.
It may take some time for searching, during which time you can watch TV.

Watch TV while waiting for update

View the TV picture while searching for a teletext page

Teletext automatically updates itself when new information becomes available.

MENU [ ] ➡ [Y] ➡ **P108** Appears when updating is completed ➡ [Y] View the updated page
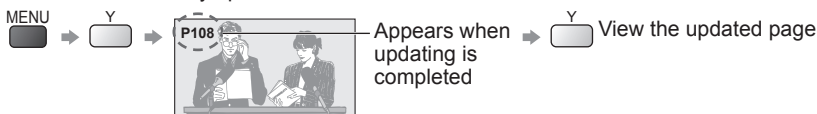
Changes to TV screen temporarily (You cannot change the programme.)

● The news page provides a function that indicates arrival of latest news ("News Flash").

Watching External Inputs

Connect the external equipment (VCRs, DVD equipment, PC, etc.) and you can watch through the input.
● To connect the equipment ➡ **(p. 10, 73 - 75)**

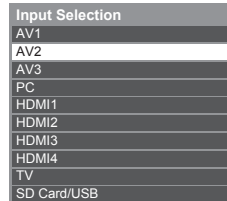**1** **Display the input selection menu**

When viewing PC ➡ PC (➡ skip to 3)

2 **Select the input mode connected to the equipment**

Example (AV2)

| Input Selection |
|---|
| AV1 |
| AV2 |
| AV3 |
| PC |
| HDMI1 |
| HDMI2 |
| HDMI3 |
| HDMI4 |
| TV |
| SD Card/USB |

① select
② watch

● You can also select the input using the AV button on the remote control or the side panel of the TV (p. 11).
Press the button repeatedly until the desired input is selected.
● You can label or skip each input mode ➡ **[Input Labels] (p. 46)**
Skipped inputs will not be displayed when the AV button is pressed.

3 **View**

Example (AV2)

AV2
PAL
16:9
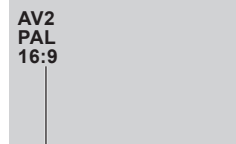
Displays the selected mode

● If the external equipment has an aspect adjustment function, set to [16:9].

Example (PC)

PC
640X480 / 60Hz
16:9

Displays the selected mode

● You can also listen to PC sound with the audio cable connected.
To connect ➡ **(p. 75)**
● You can setup some functions ➡ PC Setup (p. 40) in the Setup Menu.
● For HDMI-compatible PC, possible to connect to HDMI terminals (HDMI1 / HDMI2 / HDMI3 / HDMI4) by using HDMI cable (p. 77 - 78).

■ **To return to TV**
TV

Panasonic
TV

Watching External Inputs

23

Operating the equipment with the TV remote control

The Panasonic equipment connected to the TV can be directly operated with the below buttons of this TV remote control.

POWER ⏻	**Standby** Set to Standby mode / Turn on
▶	**Play** Playback videocassette / DVD
◼	**Stop** Stop the operation
◄◄ ◄◄	**Rewind / Skip / Search** VCR: Rewind, view the picture rapidly in reverse DVD / video content: Skip to the previous track, title or chapter Press and hold to search backward
►► ►►	**Fast-forward / Skip / Search** VCR: Fast-forward, view the picture rapidly forward DVD / video content: Skip to the next track, title or chapter Press and hold to search forward
⏸/▶	**Pause** Pause / Resume DVD: Press and hold to play at slow speed
CH ∨ ∧	**Programme Up / Down** Select programme
REC ●	**Record** Start recording

How to change the code for the type of the equipment

Each type of Panasonic equipment has its own remote control code.

Please change the code for each equipment you want to operate.

If you operate in Video mode of Media Player (p. 55) or the connected equipment in VIERA Link (p. 71), select the code "73".

POWER
Press and hold ⏻ during the following operations

Enter the appropriate code 1 2 3 4 5 6 7 8 9 0 ➡ Press ◼
(see table below)

Type of the equipment	Code
DVD Recorder / DVD Player	70 (default)
Player theatre / Blu-ray Disc theatre	71
VCR	72
Using in Video mode of Media Player ➡ (p. 55) The equipment using in VIERA Link ➡ "VIERA Link Control" (p. 71)	73

(**Note**)

● Confirm if the remote control works correctly after changing the code.

● The codes may be reset to default values if batteries are replaced.

● Some operations may not be possible on some equipment models.

Viewing 3D images

You can enjoy viewing 3D images with contents or programmes corresponding to the 3D effect by wearing the 3D Eyewear (supplied).
This TV supports [Frame Sequential]*[1], [Side by Side]*[2] and [Top and Bottom]*[3] 3D formats.
*1: The 3D format that the images for the left and right eyes are recorded with the high definition quality and alternately played back
*2, *3: Other available 3D formats

(Danger)
About Prohibition of Heating
● **Do not put 3D Eyewear in fire, heat it or leave it in places that can get hot.**
  3D Eyewear contains a lithium-ion polymer rechargeable battery, so heating may result in combustion or rupture that may cause burns or fire.

(Warning)
About Prevention of Accidental Ingestion
● **Do not store any 3D Eyewear parts in places where small children can reach.**
  There is a danger small children could swallow such parts by mistake.
  • If a child accidentally swallows such parts, seek immediate medical attention.
About Prohibition of Disassembly
● **Do not disassemble or modify the 3D Eyewear.**
  When disposing this product, refer "Disposal" (p. 32) and disassemble properly for removing the rechargeable battery.
About Charging
● **Charge by connecting the included charging cable to the USB terminal of a Panasonic TV supporting 3D.**
  Charging with other devices may result in battery leakage, heating or rupture.
● **Do not use the included charging cable for uses other than charging 3D Eyewear.**
  Doing so may result in heating, combustion or damage.

(Caution)
About 3D Eyewear
● **Do not drop, exert pressure on, or step on the 3D Eyewear.**
  Doing so may damage the glass section, which may result in injury.
  • Always store the 3D Eyewear in the case provided when not in use.
● **Be careful of the tips of the frame when putting on the 3D Eyewear.**
  Accidentally inserting the tip of the frame into the eye may cause injury.
● **Always keep the 3D Eyewear in a cool, dry place.**
  Failure to do so may cause fire or electric shock.
● **Be careful not to trap a finger in the hinge section of the 3D Eyewear.**
  Doing so may result in injury.
  • Pay special attention when children are using this product.
About Viewing of 3D Images
● **In the event that you experience dizziness, nausea, or other discomfort while viewing 3D images, discontinue use and rest your eyes.**
  When you set the effect by using [3D Adjustment], take into account that the vision of 3D images varies among different individuals.
● **Do not use the 3D Eyewear if you have a history of oversensitivity to light, heart problems, or have any other existing medical condition.**
  Using the 3D Eyewear may cause the symptoms to worsen.
● **Stop using the 3D Eyewear immediately if you feel tired, discomfort, or any other abnormality.**
  Continuing to use the 3D Eyewear in such cases may cause you to feel unwell. Please take the necessary rest before continuing use.
● **When watching 3D movies, take an appropriate length break after watching a movie.**
● **When watching 3D content on interactive devices such as 3D games or computers, take an appropriate length break after using for 30 - 60 minutes.**
  Prolonged use may cause eyesight fatigue.

- **When using the 3D Eyewear, be careful not to strike the television screen or other people by mistake.**
 As the images are in 3D, the distance between the user and screen may be mistaken, causing the user to strike the screen which may result in injury.
- **Use the 3D Eyewear when viewing 3D images.**
- **When using the 3D Eyewear, make sure your eyes are on an approximately horizontal level.**
- **If you suffer from myopia (short-sightedness), hyperopia (far-sightedness), astigmatism, or have eyesight differences between the left and right eyes, please use corrective glasses or other such methods to correct your eyesight before putting on the 3D Eyewear.**
- **Stop using the 3D Eyewear if you can clearly see double images when viewing 3D content.**
 Prolonged use may cause eyesight fatigue.
- **View the screen at a distance at least 3 times further than the effective height of the screen.**
 Recommended distance:
   For a 65-inch television, 2.4 m or more.
 Using the 3D Eyewear at a distance closer than the recommended distance may cause eyesight fatigue.

Using 3D Eyewear

- **As a guide, 3D Eyewear should not be used by children younger than about 5 - 6 years old.**
 As it is difficult to judge younger children's reactions to fatigue or discomfort, it may be difficult to prevent them from suddenly feeling unwell.
  • When this product is being used by a child, the parent or guardian should check to ensure that the child's eyes are not becoming tired.
- **When using the 3D Eyewear, do not place breakable objects near to the user.**
 The user may mistake the 3D objects they are viewing as real objects causing them to move, which may cause damage to surrounding objects that may lead to injury.
- **Do not move around while wearing the 3D Eyewear.**
 The surrounding area appears dark, which may result in falling or other accidents that may cause injury.
- **Only use the 3D Eyewear for the specified purpose.**
- **Do not use if the 3D Eyewear is cracked or broken.**
 Doing so may result in injury or eyesight fatigue.
- **If a malfunction or fault occurs in the 3D Eyewear, stop use immediately.**
 Continuing to use the 3D Eyewear may result in injury, eyesight fatigue, or may cause you to feel unwell.
- **Stop using the 3D Eyewear immediately if your skin feels unusual.**
 In rare cases, the paint or materials used in the 3D Eyewear may cause an allergic reaction.
- **Stop using the 3D Eyewear immediately if you experience any redness, pain, or itching on the nose or temples.**
 Prolonged use may cause such symptoms due to excess pressure, which may result in the user feeling unwell.
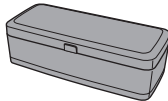
3D Eyewear

3D Eyewear set (2)
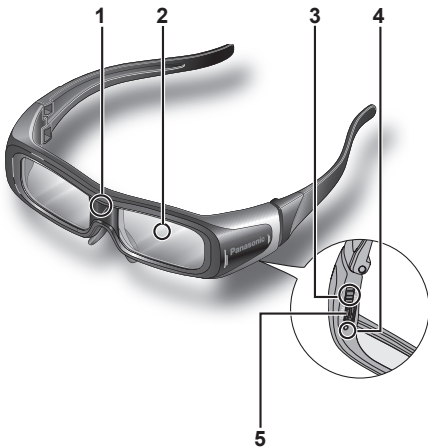- TY-EW3D2MA

3D Eyewear   **3D Eyewear case**   **Charging cable**
- N5ZZ00000224

- 3D Eyewear can be worn over vision correction glasses.

Part names and functions

1 **Infra-red receiver**
   Receives infra-red signals from the television.
   The liquid crystal shutter open/close timing is controlled by receiving infrared signals from the television, which provide 3D expression of the images.
   If the eyewear stops receiving infra-red signal from the television, the power automatically switches off after 5 minutes.

2 **Liquid Crystal Shutter (Lens)**
   Controls the images for 3D viewing.
   The left and right liquid crystal shutters are alternately opened and closed in time with the left side and right side images that are alternately displayed on the television to achieve the 3D effect.

3 **Power switch (bottom side of 3D Eyewear)**
   Switches on the 3D Eyewear power.
   The 3D Eyewear is turned on by setting the power switch to "ON". Set the power switch to "OFF" to turn off the 3D Eyewear.

4 **Indicator lamp**
   Lights or flashes during use or charging to show the status of the rechargeable battery.

5 **Charging port**
   Connect the charging cable. (p. 28)

■ Battery status shown by indicator lamp

Power/indicator lamp status	Battery status
Lights for 2 seconds when turned on	Sufficient battery level
Flashes 5 times when turned on	Low battery level
Flashes once every 2 seconds when in use	Operating normally
Lights continuously when off	Charging
Lamp off	Power off

Using Precautions

Liquid Crystal Shutter (Lens)
● **Do not apply pressure to the liquid crystal shutter. Also, do not drop or bend the 3D Eyewear.**
● **Do not scratch the surface of the liquid crystal shutter with a pointed instrument etc. Doing so may cause damage to the 3D Eyewear, and reduce the quality of the 3D image.**
Infra-red receiver section
● **Do not soil the infra-red receiver section or attach stickers etc. to it.**
   ● Doing so may prevent the receiver from receiving signals from the television, which may prevent the 3D Eyewear from operating normally.
● **If the 3D Eyewear is affected by other infra-red data communication equipment, the 3D images may not be displayed correctly.**
Cautions during viewing
● **Do not use devices that emit strong electromagnetic waves (such as cellular phones or personal transceivers) near the 3D Eyewear. Doing so may cause the 3D Eyewear to malfunction.**
● **The 3D Eyewear cannot operate fully at high or low temperatures.**
   Please use within the specified usage temperature range. ➡ (p. 88)
● **If the 3D Eyewear is used in a room in which fluorescent lights (50 Hz) are used, the light within the room may appear to be flickering. In this case, either darken or switch off the fluorescent lights when using the 3D Eyewear.**
● **Wear the 3D Eyewear correctly. 3D images will not be correctly visible if the 3D Eyewear is worn upside down or back-to-front.**
● **Other kinds of displays (such as computer screens, digital clocks, or calculators etc.) may be difficult to see while wearing the 3D Eyewear. Do not wear the 3D Eyewear when watching anything other than 3D images.**

Charging the 3D Eyewear (rechargeable type)

To charge when the TV is in the Standby mode

1. Display the menu

MENU

➡ "How to Use the Menu Functions" (p. 34)

2. Select [Setup]

3. Select [Other Settings]

		2/2
System Menu		
Other Settings	Access	

① select
② access

4. Select [USB Charge in Standby] and set [On]

Other Settings		
USB Charge in Standby	Off	
Power Save	On	

① select
[USB Charge
in Standby]
② access

③ select
[On]
④ store
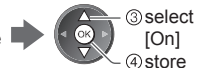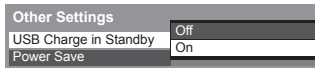
5. Turn off the television power, and set the 3D Eyewear power switch to "OFF"

6. Connect as shown

USB connector
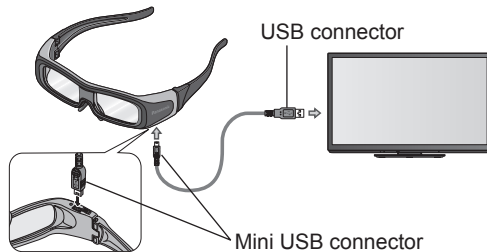
- The indicator lamp lights red, and charging starts.
- When the indicator lamp turns off, charging is complete. (Approximately 2 hours required)

Mini USB connector

7. Remove the charging cable

To charge when the TV is on
1. Turn off the television power, and set the 3D Eyewear power switch to "OFF"
2. Connect as shown above, and turn on the television power
  ● The indicator lamp of the 3D Eyewear lights red, and charging starts.
  ● When the indicator lamp turns off, charging is complete. (Approximately 2 hours required)
3. Turn off the television power, and remove the charging cable

Storage and Cleaning

● Clean using a soft, dry cloth.
  Wiping the 3D Eyewear with a soft cloth that is covered in dust or dirt may scratch the eyewear. Shake off any dust from the cloth before use.
● Do not use benzene, thinner, or wax on the 3D Eyewear, as doing so may cause the paint to peel off.
● Do not dunk the 3D Eyewear in liquid such as water when cleaning.
● Avoid storing the 3D Eyewear in hot or highly humid locations.
● During the long period of disuse, full charge the 3D Eyewear once every 6 months to keep the battery performance.

(**Note**)

● As the liquid crystal shutters (lens) are fragile and easily broken, be very careful when cleaning them.

Panasonic
TV

Viewing 3D images

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Available range for the 3D Eyewear

If the 3D Eyewear is placed outside the available area for about 5 minutes, the 3D Eyewear will be turned off automatically.
⬤ : Available area to use the 3D Eyewear
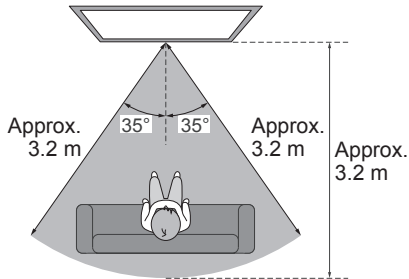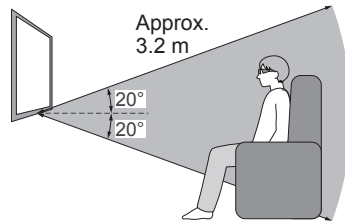
| View from the top | View from the side |

Note
● The range may be shortened depending on the obstacles between the infrared sensors on the TV and the 3D Eyewear, the dirt of the infrared sensors or the surrounding environment.
● If you do not look toward the TV screen for a while when viewing 3D images, the 3D Eyewear may be turned off automatically even if in the available area.

To view the 3D images

You can watch 3D images in the following cases:
● When a 3D image supporting Blu-ray Disc is played on a 3D image supporting player/recorder connected using a HDMI cable to a 3D image supporting television.
● 3D image supported broadcast (programme)
● 3D Photo, 3D Movie taken by LUMIX/Camcorder.
● 2D→3D (Converts 2D images into 3D) ➡ **"Change the view 3D ↔ 2D" (p. 30)**

To view the contents or programmes
1 Set the power switch to "ON"
   (The indicator lamp will light for approximately 2 seconds, then flash once approximately every 2 seconds.)
2 Put on the 3D Eyewear
3 Watch the 3D images
   When the HDMI receives information in which 3D mode is detected, 3D images are automatically displayed according to the signal.
   If the 3D images are not displayed correctly or the images cause discomfort, the images can be adjusted by [3D Mode Selection] or [3D Settings].
   ➡ **"Change the view 3D ↔ 2D", "[3D Settings] (Adjust 3D images)" (p. 30, 31)**

■ **After Use**
1 Set the 3D Eyewear power switch to "OFF"
   (The 3D Eyewear indicator lamp turns off, and the power turns off.)
2 After using the 3D Eyewear, store it in the case provided

Viewing 3D images

Change the view 3D ↔ 2D

Simply switches 3D ↔ 2D images (Auto mode)

3D Mode Selection	
2D→3D	▢→🔳
3D	🔳
2D	▢
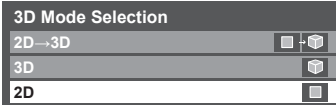
([2D → 3D]: 2D mode only)

① select
② set

R
• → Switches to Manual mode (see below)

■ **Change 3D format (Manual mode)**
1 Display [3D Mode Selection (Manual)]

R

2 Press 3D to cycle through the 3D format

3D Mode Selection (Manual)	
Original	
Frame Sequential - 3D	🔳
Frame Sequential - 2D	▢
Side by Side - 3D	▢▢→🔳
Side by Side - 2D	▢▢→▢
Top and Bottom - 3D	▤→🔳
Top and Bottom - 2D	▤→▢
2D→3D	▢→🔳
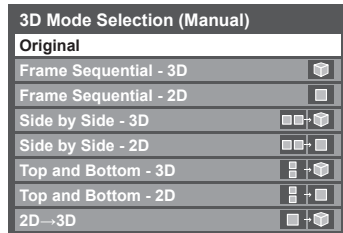
(example)

① select
② set

Table of images that can be seen for each [3D Mode Selection (Manual)] and the source image format
If the picture appears to be abnormal, refer to the table below to choose the correct 3D mode.

[3D Mode Selection] Source image format	[Original]	[Frame Sequential - 3D]	[Side by Side - 3D]	[Top and Bottom - 3D]	[2D→3D]
Frame Sequential	$\boxed{A}$	$\boxed{A}$ Normal 3D*¹	$\boxed{A}$	$\boxed{A}$	$\boxed{A}$
Side by Side (Full)	$\boxed{A}$	$\boxed{A}$	$\boxed{A}$ Normal 3D*¹	$\boxed{A}$	$\boxed{A}$
Side by Side	🄰 🄰	🄰 🄰	$\boxed{A}$ Normal 3D*¹	🄰🄰	🄰 🄰
Top and Bottom	⌅	⌅	◣◿	$\boxed{A}$ Normal 3D*¹	⌅
Normal format (2D)	$\boxed{A}$	$\boxed{A}$	◣◿	🄰🄰	$\boxed{A}$ Normal 3D

*1 : When selecting [Frame Sequential - 2D], [Side by Side - 2D] or [Top and Bottom - 2D], the images will be displayed without 3D effect.
• Depending on the player or broadcasts, the image may be different from the above illustrations.

[3D Settings] (Adjust 3D images)

1 Display the menu

MENU
⮕ "How to Use the Menu Functions" (p. 34)

2 Select [Picture]

3 Select [3D Settings]

	2/2
3D Settings	Access
Screen Display	On
Advanced Settings	
Lock Settings	
Copy Adjustment	
Reset to Defaults	Reset

① select
② access

4 Select the item and set

3D Settings	
2D→3D Depth	Min
3D Adjustment	Access
Picture Sequence	Normal
Edge Smoother	Off
3D Detection	On
3D Signal Message	On
Safety Precautions	Access

select
adjust
access / store

■ **3D Adjustment**
Changes 3D depth by adjusting left-right parallax.
1 Set [On] and adjusts [Effect]

3D Adjustment	
3D Adjustment	On
Effect	▬▬▬▬▬▬ +1

① select
② adjust

[3D Adjustment] ([On] / [Off])
[Effect] ([-3] to [+3])

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<div style="float:right">Viewing 3D images</div>

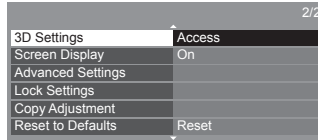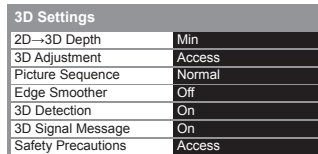| Item	Adjustments / Configurations (alternatives)
2D→3D Depth	Adjusts 3D depth. Available only when [2D→3D] is selected in [3D Mode Selection]. **[Min] / [Mid] / [Max]**
3D Adjustment	See above (except in [2D→3D] mode) (3D adjustment [On] / [Off], Effect [-3] to [+3])
Picture Sequence	Selects [Reverse] if you feel that the sense of depth is unusual (except in [2D→3D] mode) **[Normal] / [Reverse]**
Edge Smoother	Select [On] if you feel the contoured parts of an image are not smooth enough (except in [2D→3D] mode) **[Off] / [On]**
3D Detection	Automatically detects the 3D format signals **[Off] / [On] / [On (Advance)]** **[On (Advance)]:** Detects all the 3D format signals and displays the 3D image automatically. **[On]:** Detects the particular 3D format signals (Frame Sequential, etc.) and displays the 3D image automatically. ●To view 3D images without any notifications and operations, set to [On (Advance)].
3D Signal Message	Selects whether to give a notification message when a signal of 3D format is found **[Off] / [On]** ●For Component and HDMI ●This function is not available when [3D Detection] is set to [On (Advance)].
Safety Precautions	Displays the precautions for viewing 3D images.

*The perceived three dimensional effects of the 3D Eyewear differ from person-to-person.
*If a signal received from an external device is different from the 3D setting of the TV, such as 2D signal when the TV is set to 3D mode, the images may not be displayed correctly.

Disposal

A lithium-ion polymer rechargeable battery is built in to the 3D Eyewear. Please discard according to local regulations.
When disposing this product, disassemble properly by following the procedure below, and remove the internal rechargeable battery.

Do not disassemble this product except when disposing of it.

■ **Danger**
● **As the rechargeable battery is specifically for this product, do not use it for any other device.**
  • Do not charge the removed battery.
  • Do not throw the battery in a fire, or apply heat to it.
  • Do not pierce the battery with a nail, subject it to an impact, or dismantle or modify it.
  • Do not let the wires touch any other metal or each other.
  • Do not carry or store the battery with a necklace, hair pin, or the like.
  • Do not charge, use, or leave the battery in a hot location such as near a fire or under the hot sun.
    Doing so may cause the battery to generate heat, ignite, or rupture.

■ **Warning**
● **Do not place the removed battery, screws, and other items within reach of infants.**
  Accidental swallowing of such an item may have an adverse effect on the body.
  • In the event that you think such an item has been swallowed, consult a doctor immediately.
● **In the event of fluid leaking from the battery, take the following measure, and do not touch the fluid with bare hands.**
  Fluid entering into an eye may cause loss of eyesight.
  • Wash the eye with water immediately without rubbing it, and then consult a doctor.
  Fluid getting on your body or clothes may cause inflammation of the skin or injury.
  • Sufficiently rinse with clean water, and then consult a doctor.

■ **How to remove the battery**
  Disassemble this product after the battery has run out of power.

The following figures are intended to explain how to dispose of the product, not for describing how to repair.
The product cannot be repaired once it has been disassembled.

1 Fold the part of the frame without the power switch, and then remove the two screws on the inside of the hinge with a precision Phillips (plus +) screwdriver.
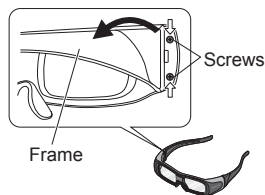
Screws
Frame

2 Bend the frame inwards and pull it off from the side cover.
  • If it is difficult to remove, insert a flat-blade (minus -) screwdriver and force it off.
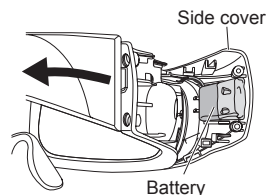
Side cover
Battery

3 Remove the battery from inside the side cover, and cut the two wires one by one with scissors.
  • Insulate the wire parts of the removed battery with cellophane tape.
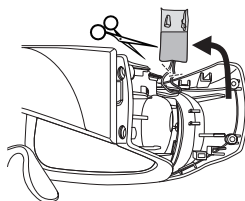
(Note)
●Take sufficient care when performing this work so as not to injure yourself.
●Do not damage or dismantle the battery.

Viewing 3D images

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How to Use VIERA TOOLS

You can access some special features easily by using the VIERA TOOLS function.

1 ## Display icons of the feature

2 ## Select a feature

① select
② access

■ **To return to TV**

EXIT

⬤ or VIERA TOOLS

■ **Follow the operations of each feature**

[VIERA Link Control]
➡ **"VIERA Link Control" (p. 71)**

When two or more compatible equipment are connected, a selection screen will be displayed. Please select the correct description and access.

[Photo]*
➡ **"Photo mode" (p. 50)**

[Video]*
➡ **"Video mode" (p. 54)**

[Music]*
➡ **"Music mode" (p. 57)**

[VIERA Connect]
➡ **"Using "VIERA Connect"" (p. 17)**

[Media Server]*
➡ **"Using DLNA® features" (p. 64)**

* When two or more available devices are connected, a selection screen will be displayed.
Please select the correct description and access.

> **Note**
> • If the selected feature is not available, the demonstration to explain how to use it can be displayed. Press the OK button to view the demonstration after selecting the unavailable feature.

How to Use VIERA TOOLS

How to Use the Menu Functions

Various menus allow you to make settings for the picture, sound, and other functions.

1 Display the menu
● Displays the functions that can be set (varies according to the input signal)

2 Select the menu

VIErA Main Menu
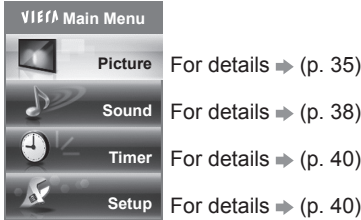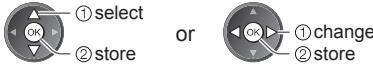
Picture For details ➡ (p. 35)

Sound For details ➡ (p. 38)

Timer For details ➡ (p. 40)

Setup For details ➡ (p. 40)

① select
② access

3 Select the item
① select
② access

4 Adjust or select
① select
② store

or

① change
② store

■ Choose from among alternatives

Colour Balance
| Cool |
| Normal |
| Warm |

■ Adjust using the slide bar

Sharpness   50

Moved

■ Go to the next screen

Child Lock   Access

Displays the next screen

■ To reset the settings
● To reset the picture settings only
 ➡ **[Reset to Defaults] in the Picture Menu (p. 38)**
● To reset the sound settings only
 ➡ **[Reset to Defaults] in the Sound Menu (p. 39)**
● To initialise all settings
 ➡ **[Shipping Condition] in the Setup Menu (p. 47)**

■ Enter characters by free input menu

You can enter names or numbers freely for some items.

User input
Name

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z		0	1	2	3	4	5	6	7	8	9	!	:	#
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
u	v	w	x	y	z	(	)	+	-	.	*	_								

Set characters one by one
① select
② set

RETURN
Store
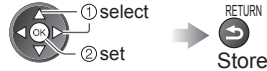
● To delete a character ➡ R   ● To delete all characters ➡ B

● You can set characters by using numeric buttons.

1 2 3
4 5 6
7 8 9
0

RETURN
Store

Every press changes the character by one. Leave it for a second to set the character, or press OK or any numeric button within a second. (Corresponding characters for each numeric button.)

Numeric buttons	Characters	Numeric buttons	Characters
1	. 1 ! : # + - * _ ( )	**6**mno	m n o 6 M N O
2abc	a b c 2 A B C	**7**pqrs	p q r s 7 P Q R S
3def	d e f 3 D E F	**8**tuv	t u v 8 T U V
4ghi	g h i 4 G H I	**9**wxyz	w x y z 9 W X Y Z
5jkl	j k l 5 J K L	**0**	Space 0

■ To return to TV at any time
EXIT

■ To return to the previous screen
RETURN

■ To change menu pages
CH ∧ — up

CH ∨ — down

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TV

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<table>
<tr><td colspan="2"> **Picture**</td><td>**Note**
• In each Viewing Mode and input, [Contrast], [Brightness], [Colour], [Sharpness], [Tint], [Colour Balance], [Vivid Colour], [Eco Mode], [P-NR] and [3D-COMB] can be adjusted and stored to suit your particular viewing requirement.
• Set for each input signal.</td></tr>
</table>

Item	Adjustments / Configurations (alternatives)
Viewing Mode • Dynamic • Normal • Cinema • THX (True Cinema) • Game • Photo • Professional1 • Professional2	Basic picture mode **[Dynamic]:** Provides enhanced picture contrast and sharpness when viewing in a bright room. **[Normal]:** Recommended for viewing under normal ambient room lighting conditions. **[Cinema]:** For watching movies in a darkened room with improving the performance of contrast, black and colour reproduction **[THX (True Cinema)]:** Precisely reproduces the original quality of the image without any revision. Recommended for playback of THX disc (disc with [THX] logo) THX mode is used to mirror the picture settings used by professional filmmakers, faithfully reproducing the image quality of THX Certified movies. • THX Certified movies have the [THX] logo on a disc • [True Cinema] is displayed instead of [THX] in the mode of Media Player and Network service operations **[Game]:** Fast response signal specifically to provide suitable images for playing games • Not valid on TV mode • A continuous record of time spent using Game mode can be displayed in the top right of the screen. ➔ [Playing Time Display] (p. 41) **[Photo]:** Set [Reversal Film Effect] to [On] to provide the suitable image quality for photos • For HDMI input, Media Player and Network service operations **[Professional1] / [Professional2]:** Allows you to set the professional picture settings in [Advanced Settings], [Lock Settings] and [Copy Adjustment] (p. 38) • This mode is available only when [Advance(isfccc)] in the Setup Menu is set to [On] • Not valid on VIERA Connect • If the certified professional dealer sets these modes, [Professional1] and [Professional2] may be displayed as [isf Day] and [isf Night]
Contrast	Increases or decreases the levels of these options according to your personal preference
Brightness	
Colour	
Sharpness	
Tint	The picture hue can be adjusted to suit your taste • For NTSC signal, Component or HDMI input • Not valid when [Viewing Mode] for HDMI input is set to [Photo]
Colour Balance • Cool • Normal • Warm	Allows you to set the overall colour tone of the picture • Not valid when [Viewing Mode] is set to [THX (True Cinema)], [Professional1] or [Professional2]
Channel Colour Set	Colour density varying between broadcast channels can be adjusted to three levels for each reception channel • Select the channel you want to adjust and set this function
Vivid Colour • Off • On	Automatically adjusts colours to vivid ones • Not valid on PC signal • Not valid when [Viewing Mode] is set to [Professional1] or [Professional2]
Reversal Film Effect • Off • On	Provides the picture effect such as the reversal film • This function is available when [Viewing Mode] is set to [Photo]
Colour Remaster • Off • On • Auto	**[Off]:** Display it in input source of colour gamut **[On]:** Display it in expand input source of colour gamut **[Auto]:** Auto-fit • For HDMI input and Media Player • Not valid when [Viewing Mode] is set to [THX (True Cinema)] or [Photo]

How to Use the Menu Functions

Eco Mode • Off • On			Automatically adjusts the screen brightness appropriately as the surrounding light level lowers to reduce the power consumption •Not available in Shop mode (Dynamic picture mode)
P-NR • Off • Min • Mid • Max			Picture Noise Reduction Automatically reduces unwanted picture noise and flicker noise in the contoured parts of a picture •Not valid on PC signal
3D-COMB • Off • On			Makes still or slow moving pictures look more vivid •Occasionally, while viewing still or slow moving pictures, colour patterning may be seen. Set to [On] to display sharper and more accurate colours. •For PAL or NTSC signal reception only •Not valid on Component, PC, HDMI and Media Player
3D Settings			Adjusts and sets to view 3D images (p. 31)
Screen Display • Off • On			Turns the screen off when you select [Off] •The sound is active even if the screen turns off. •Press any buttons (except Standby) to turn the screen on. •This function is effective in reducing power consumption when listening to the sound without watching the TV screen.
Advanced Settings	**White Balance***1	**R-Gain**	Adjusts the white balance of bright red area
		G-Gain	Adjusts the white balance of bright green area
		B-Gain	Adjusts the white balance of bright blue area
		R-Cutoff	Adjusts the white balance of dark red area
		G-Cutoff	Adjusts the white balance of dark green area
		B-Cutoff	Adjusts the white balance of dark blue area
		More Detailed Adjustment*3	Adjusts more detailed White Balance items **[Input Signal Level]:** Adjusts the input signal level **[R-Gain] / [G-Gain] / [B-Gain]:** Adjusts the detailed white balance of bright red, green or blue area **[Reset to Defaults]:** Press the OK button to reset to the default detailed White Balance
		Reset to Defaults	Press the OK button to reset to the default White Balance
	Colour Management*2	**R-Hue**	Adjusts the picture hue of red area
		G-Hue	Adjusts the picture hue of green area
		B-Hue	Adjusts the picture hue of blue area
		R-Saturation	Adjusts the saturation of red area
		G-Saturation	Adjusts the saturation of green area
		B-Saturation	Adjusts the saturation of blue area
		R-Luminance	Adjusts the luminance of red area
		G-Luminance	Adjusts the luminance of green area
		B-Luminance	Adjusts the luminance of blue area
		More Detailed Adjustment	Adjusts more detailed Colour Management items **[Y-Hue] / [C-Hue] / [M-Hue]:** Adjusts the picture hue of yellow, cyan or magenta area **[Y-Saturation] / [C-Saturation] / [M-Saturation]:** Adjusts the saturation of yellow, cyan or magenta area **[Y-Luminance] / [C-Luminance] / [M-Luminance]:** Adjusts the luminance of yellow, cyan or magenta area **[Reset to Defaults]:** Press the OK button to reset to the default detailed Colour Management
		Reset to Defaults	Press the OK button to reset to the default Colour Management

Advanced Settings	**Gamma**[*1]	**Gamma**
		• S Curve /
		  1.8 / 2.0 /
		  2.2 / 2.4 / 2.6
			Switches the gamma curve
			•Please note the numerical values are reference for the adjustment.

		More Detailed Adjustment[*3]	Adjusts more detailed Gamma items **[Input Signal Level]:** Adjusts the input signal level **[Gain]:** Adjusts the gain of gamma for selected signal level **[Reset to Defaults]:** Press the OK button to reset to the default detailed Gamma
		Reset to Defaults	Press the OK button to reset to the default Gamma
	Intelligent Frame Creation • Off • Mid • Max		Automatically compensates the picture frame rate and removes juddering movements to make the images smooth and clear •Depending on the contents, images may be noisy. To prevent the noise, change the setting. •This function is not available for selection (default to [Off]) when [Viewing Mode] is set to [Game] or in the mode of PC input or Network service operations.
	24p Smooth Film • Off • Mid • Max		Automatically compensates the picture frame rate to make the 24p source movie images smooth •This is available only for 24p signal input and displayed instead of [Intelligent Frame Creation]. •This function is not available for selection (default to [Off]) when [Viewing Mode] is set to [Game] or in the mode of PC input or Network service operations.
	Film Cadence Detection • Off • On		Automatically makes the film source movie images clear
	3D Refresh Rate • Auto • 100Hz • 120Hz		Changes the setting of the high-speed motion picture response
	Resolution Enhancer • Off • Mid • Max		Enhances the picture resolution to make the image sharper •This function is available for SD (Standard definition) signal. •As for HD (High definition) signal, this function is available when aspect mode is set to [16:9] ([16:9 Overscan] is set to [On]), [4:3 Full] or [Zoom]. •Not valid on VIERA Connect and Media Player
	Side Panel • Off • Low • Mid • High		Increases the brightness of the side panel •The recommended setting is [High] to prevent panel "image retention".
	16:9 Overscan • Off • On		**[On]:** Default - Image is overscanned by ~5% beyond the edge of the screen to hide edge video noise **[Off]:** Displays image in its original size including edge video noise such as lines, dashes, dots etc. •Applicable for video signals when TV aspect is set to [16:9] •Memorised separately for SD and HD channels / signals
	AV Colour System • Auto • PAL • SECAM • M.NTSC • NTSC		Selects optimum colour system based on video signals in AV mode
	Colour Matrix • SD • HD		Available only with 480p or 576p input on video signals in a natural colour from digital equipment connected to AV1 component or HDMI1 / HDMI2 / HDMI3 / HDMI4 terminals. Select [SD] or [HD] to adjust suitable colour parameters for [SD] (Standard definition) or [HD] (High definition) •**[SD]:** Input signal is a normal TV system •**[HD]:** Input signal is a high definition system

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Advanced Settings	**DVI Input Setting** • Normal • Full	Changes the black level in the image for HDMI input mode with DVI input signal manually •When the DVI input signal from the external equipment, especially from PC, is displayed, the black level may not be suitable. In this case, select [Full]. •The black level for HDMI input signal will be adjusted automatically. •For HDMI input mode with DVI input signal only
	Pixel Orbiter • Auto • On	Selects the mode for wobbling of the image to prevent panel "image retention" **[Auto]:** Automatically works only for the appropriate images and you rarely recognise the wobbling.
	Scrolling Bar	Scrolls the vertical bar to prevent panel "image retention" •Press the OK button to start scrolling and press any buttons (except Standby) to exit this mode.
Lock Settings		Locks for each Viewing Mode and input. Additionally, [Contrast], [Brightness], [Colour], [Sharpness], [Tint], [Colour Remaster] and [Reset to Defaults] in the Picture Menu can be locked for [Professional1] and [Professional2]. •Make a note of the PIN number in case you forget it.
Copy Adjustment		You can copy the selected [Professional1] or [Professional2] settings to that of the other input. The settings of [Contrast], [Brightness], [Colour], [Sharpness], [Tint], [Colour Remaster] and [Advanced Settings] will be copied. •You cannot copy to the locked mode.
Reset to Defaults		Press the OK button to reset the present Picture Viewing Mode of the selected input to the default settings

*1 : When [Advance(isfccc)] is [On] and [Lock Settings] is [Off], except [Viewing Mode] is [THX] or PC input mode
*2 : Only when [Viewing Mode] is [Professional1 (isf Day)] or [Professional2 (isf Night)] and [Lock Settings] is [Off]
*3 : Only when [Viewing Mode] is [Professional1 (isf Day)] or [Professional2 (isf Night)]

Sound

Item	Adjustments / Configurations (alternatives)
Mode • Music • Speech • User	Selects basic sound mode •The selected mode affects all input signals. **[Music]:** Improves sound quality for watching music videos, etc. **[Speech]:** Improves sound quality for watching news, drama, etc. •In Music and Speech modes, you can adjust [Bass] and [Treble] settings, and those settings will be stored for each mode. **[User]:** Adjusts the sounds manually by using the equaliser to suit your favourite sound quality. •For the User mode, [Equaliser] will appear on the Sound Menu instead of [Bass] and [Treble]. Select the [Equaliser] and adjust the frequency. ➡ [Equaliser] (p. 39)
Bass	Increases or decreases level to enhance or minimise lower, deeper sound output
Treble	Increases or decreases level to enhance or minimise sharper, higher sound output

Equaliser	Adjusts the frequency level to suit your favourite sound quality • This function is available when [Mode] is set to [User]. • Select the frequency and change the frequency level by using the cursor button. • If you want to enhance the bass sound, raise the level of the lower frequency. If you want to enhance the treble sound, raise the level of the higher frequency. • To reset the levels of each frequency to the default settings, select the [Reset to Defaults] by using the cursor button, and then press the OK button.
Balance	Adjusts the volume level of right and left speakers
Headphone Volume	Adjusts the volume of the headphones
Surround • Off • V-Audio • V-Audio Surround • V-Audio ProSurround	Surround sound settings **[V-Audio]:** Provides a dynamic enhancer of width to simulate improved spatial effects **[V-Audio Surround]:** Provides a dynamic enhancer of width and depth to simulate improved spatial effects **[V-Audio ProSurround]:** Provides a three-dimensional sound space with digital reverb effects
Volume Control (VAO) • TV • Audio Out (TV Off) • TV and Audio Out	Selects to adjust the volume of the audio output **[TV]:** Only the volume of TV speakers is adjustable. **[Audio Out (TV Off)]:** Only the volume of Audio Out is adjustable and mute the TV speaker's volume. **[TV and Audio out]:** The volume of TV speakers and Audio Out is adjustable.
Auto Gain Control • Off • On	Adjusts the current volume level if it is extremely different from the previous viewed channel or input mode
Volume Correction	Adjusts the volume of individual channel or input mode
Speaker Distance to Wall • Over 30cm • Up to 30cm	Adjusts the low frequency sound • If the back space between the TV and wall is over 30 cm, [Over 30cm] is recommended. • If the back space between the TV and wall is within 30 cm, [Up to 30cm] is recommended.
MPX • Stereo • Mono • M1 • M2	Selects multiplex sound mode (if available) **[Stereo]:** Use this normally **[Mono]:** When stereo signal cannot be received **[M1] / [M2]:** Available while mono signal is transmitted • TV mode only.
SPDIF Selection • Auto • PCM	SPDIF: A standard audio transfer file format Selects the initial setting for digital audio output signal from the DIGITAL AUDIO OUT terminal **[Auto]:** Dolby Digital Plus, Dolby Digital and HE-AAC (48 kHz) multi-channel are output as Dolby Digital Bitstream. MPEG is output as PCM. **[PCM]:** Digital output signal is fixed to PCM. • For Video mode (p. 54) or Network video contents (p. 67)
HDMI1 / 2 / 3 / 4 Input • Digital • Analogue	Selects to fit the input signal (p. 77) **[Digital]:** HDMI cable connection **[Analogue]:** HDMI-DVI adaptor cable connection • HDMI input mode only
Reset to Defaults	Press the OK button to reset settings of the present [Mode], [Balance], [Headphone Volume] and [Surround] in the Sound Menu to the default

Timer

Item	Adjustments / Configurations (alternatives)
Off Timer • Off • 15 / 30 / 45 / 60 / 75 / 90 minutes	Sets the time until the TV automatically goes into Standby mode
Auto Standby • Off • 2 / 4 hours	Sets the time the TV automatically goes into Standby mode when no operation is performed for the selected times ●Automatic input switching with the connected equipment affects this function and time-count will be reset. ●The notification message will appear 3 minutes before going into Standby mode.

Setup

	Item	Adjustments / Configurations (alternatives)
PC Setup	**Input Resolution**	Switches to a wide view ●VGA (640 × 480 pixels), WVGA (852 × 480 pixels), XGA (1,024 × 768 pixels), WXGA (1,280 × 768 pixels, 1,366 × 768 pixels) ●Options change depending on signals
	Clock	Sets to the minimum level if noise occurs
	H-pos	Adjusts horizontal position
	V-pos	Adjusts vertical position
	Clock Phase	Eliminates flicker and distortion ●Adjust after Clock adjustment ●Set to the minimum level if noise occurs
	Sync • H & V • On Green	PC sync signal type **[H & V]:** by the horizontal and vertical signals from your PC **[On Green]:** Sync on Green sync from your PC
	Reset to Defaults	Press the OK button to reset the PC Setup settings to the default

Eco Navigation		Automatically sets the TV to the most suitable energy-saving mode • If you press the OK button, the following items are set as below: [Eco Mode], [VIERA Link], [Power off Link], [Standby Power Save], [Power Save] ➡ [On] [Intelligent Auto Standby] ➡ [On (No reminder)] [Auto Standby] ➡ [2 hours]
Child Lock		Locks a channel / AV input to prevent access to it (p. 45)
Tuning Menu	**Channel List Edit**	Skips the unwanted channels or edits channels (p. 44)
	Auto Tuning	Sets all TV channels automatically (p. 44)
	Manual Tuning	Sets the TV channels manually (p. 44)
OSD Language • English • Thai • Arabic • Chinese • Vietnamese • Persian • Hindi • Indonesian • French		Changes language for on screen displays
Display Settings	**Teletext** • FASTEXT • List	Teletext display mode (p. 21)
	Teletext Character Set • English • CIS • E.Europe • Persian	Selects teletext language
	Input Labels	Labels or skips each input terminal (p. 46)
	Banner Display Timeout • 0 (No display) • 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 seconds	Sets how long the information banner stays on screen (p. 19)
	VIERA Connect Banner • Off • On	Sets the VIERA Connect introduction banner display (p. 17)
	Playing Time Display • Off • On	Sets to [On] to display a continuous record of time spent using Game mode every 30 minutes • This function is available when [Game] is selected in [Viewing Mode] (p. 35).

How to Use the Menu Functions

VIERA Link Settings	**VIERA Link** • Off • On	Sets to use VIERA Link functions •VIERA Link functions become available when [VIERA Link] is set to [On] (p. 69).
	HDMI Content Type • Off • Auto	Adjusts the picture settings according to the content type from the connected equipment via HDMI cable •This function is available if the connected equipment supports HDMI Content Type. •The content type information will be displayed for several seconds when this function works.
	Power on Link • Off • On	Sets to use Power on Link functions (p. 69)
	Power off Link • Off • On	Sets to use Power off Link functions (p. 69)
	Standby Power Save • Off • On	Controls the power consumption in Standby mode of the connected equipment to reduce the power consumption (p. 69) •This function is available when [VIERA Link] is set to [On] and [Power off Link] is set to [On].
	Intelligent Auto Standby • Off • On (With reminder) • On (No reminder)	Makes non-watched or non-used connected equipment go into Standby mode to reduce the power consumption (p. 69) •This function is available when [VIERA Link] is set to [On].
Network Setup		Sets the network setting to use in your network environment (p. 60)
DivX® VOD		Displays DivX VOD registration code (p. 82)
Advance(isfccc) • Off • On		Enables the advanced picture settings •Set to [On] to enable the mode of [Professional1] and [Professional2] in [Viewing Mode]. •Set to [On] to display the advanced items in the Picture Menu - [Advanced Settings], [Lock Settings] and [Copy Adjustment]. [Copy Adjustment] will be displayed when [Viewing Mode] is set to [Professional1] or [Professional2]. •[isfccc] is the picture setting for the certified professional dealer. For details, consult your local dealer.
System Menu	**Shipping Condition**	Resets all settings to the original condition (p. 47)
	Software Licence	Displays the software licence information
	System Information	Displays the system information of this TV
Other Settings	**USB Charge in Standby** • Off • On	Sets to use the USB Charge functions (p. 28) **[On]:** Available to charge by using any USB terminal after going into Standby mode(Active Standby Mode) •Go into Standby mode after 5 hours.
	Power Save • Off • On	Reduces brightness of the picture to economise on power consumption

•A different menu will be displayed in the mode of Media Player / Network service operations. (p. 48 - 67)
•Only available items can be selected.

42

Tuning and Editing Channels

You can make Auto Tuning, listing your favourite channels, skipping unwanted channels, etc.
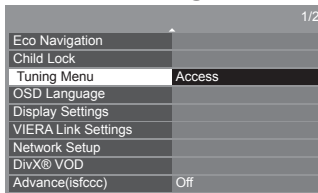
Preparations:

1 Select TV mode
TV

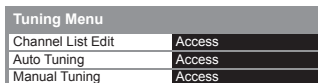**2** Display the menu
MENU

3 Select [Setup]

1 Select [Tuning Menu]

	1/2
Eco Navigation	
Child Lock	
Tuning Menu	Access
OSD Language	
Display Settings	
VIERA Link Settings	
Network Setup	
DivX® VOD	
Advance(isfccc)	Off

① select
② access

2 Select a function

Tuning Menu	
Channel List Edit	Access
Auto Tuning	Access
Manual Tuning	Access

① select
② access
● For details ➡ **(p. 44)**

■ **To return to TV**
EXIT

For Auto Tuning, using the buttons on the side panel of the TV (p. 11)

1 Press repeatedly until [Auto Tuning] appears   F
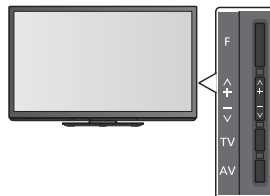
2 Access [Auto Tuning]   TV

3 Start [Auto Tuning]   TV
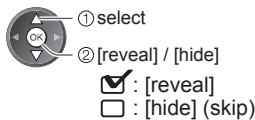
● To return to TV

F

[Channel List Edit] - Skip unwanted channels / Edit Channels (Change name, Move)

You can hide unwanted channels. The hidden channels cannot be displayed except in this function.
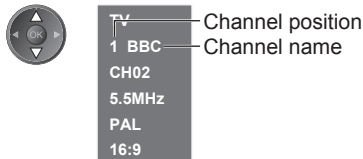Use this function to skip unwanted channels.

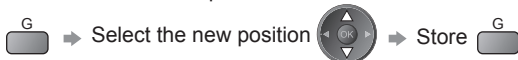**Select a channel and reveal / hide**

		Channel List Editor
☑	1	BBC1
☐	2	*****
☐	3	*****
☑	4	*****
☑	5	*****
☑	6	*****
☑	7	*****

① select

② [reveal] / [hide]

☑ : [reveal]
☐ : [hide] (skip)

• To reveal all channels Y

• To retune each channel (Manual Tuning)
R (see below)

■ To edit channels

You can also edit each channel in the Channel List.
Select a channel to edit and:

TV
1 BBC —— Channel position
—— Channel name
CH02
5.5MHz
PAL
16:9

• To move the channel position

G ➡ Select the new position ➡ Store G

• To rename the channel name

B ➡

Edit channel name
Name

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z		0	1	2	3	4	5	6	7	8	9	!	:	#
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
u	v	w	x	y	z	(	)	+	-	.	*								

① select

② set
Set characters

➡ Store RETURN ➡

• You can set characters by using numeric buttons ➡ **(p. 34)**
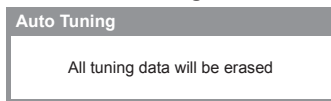
(maximum: five characters)
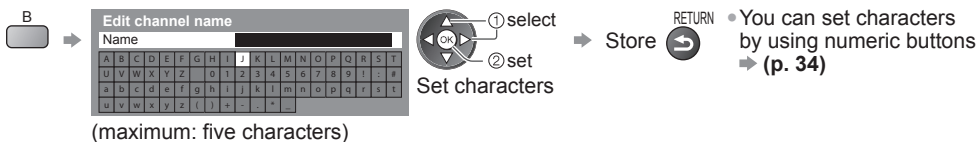
(Note)
• If a VCR is connected only with the RF cable, edit [VCR].

[Auto Tuning] - Set all TV channels automatically

1 Start Auto Tuning

Auto Tuning

All tuning data will be erased

2 Settings are made automatically

Auto Tuning	
2	CH3
Scan	1 ▮ 120
◄○► EXIT	

Automatically retune all channels received in the area.

• All the previous tuning settings are erased.
• When the operation is completed, the channel at channel position [1] will be displayed.
• Search begins in the order from the lower channels to the higher channels.
• If tuning has not been done completely ➡ **[Manual Tuning] (see below)**

[Manual Tuning] - Set TV channel manually

Manual Tuning	
0	CH57
Fine Tuning	▮
Manual Tuning	▮ 120
Sound System	5.5MHz
Colour System	Auto
Store	

Fine Tuning
• Use to make small adjustments to the tuning of an individual channel (affected by weather conditions, etc.)

Manual Tuning
Set TV channel manually after Auto Tuning.
• Set Sound System and Colour System, and then perform this function. Set Colour System [Auto] normally.
• If a VCR is connected only with the RF cable, select channel position [0].

1 Select a channel position
1 2 3
4 5 6
7 8 9
0

2 Select a channel
∧ CH ∨

3 Search

4 Select [Store]
① select
② store

Tuning and Editing Channels

Child Lock

You can lock specific channels / AV input terminals and control who watches them.
When the locked channel / input is selected, a message appears; by entering the PIN number, you can watch it.
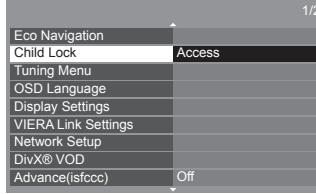
Preparations:
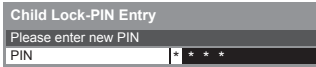
1 Display the menu
MENU

2 Select [Setup]

1 Select [Child Lock]

		1/2
Eco Navigation		
Child Lock	Access	
Tuning Menu		
OSD Language		
Display Settings		
VIERA Link Settings		
Network Setup		
DivX® VOD		
Advance(isfccc)	Off	

① select
② access

■ **To return to TV**
EXIT

[Child Lock] - Control channel audience

1 Enter the PIN number (4 digits)

Child Lock-PIN Entry	
Please enter new PIN	
PIN	* * * *

● Enter the PIN number twice at first setting.
● Make a note of the PIN number in case you forget it.

3 Select the channel / input to be locked

Child Lock List - TV and AV			
Name	Input	Type	Lock
2	TV	TV	
3	TV	TV	🔒
AV1	External	AV	
AV2	External	AV	
AV3	External	AV	
PC	External	AV	🔒
HDMI1	External	AV	
HDMI2	External	AV	

① select
② lock

🔒 : Appears when the channel / input is locked

2 Select [Child Lock List]

Child Lock	
Change PIN	
Child Lock List	Access

① select
② access

● To cancel ➡ **Select the locked channel / input**

● To lock all (G)

● To cancel all locks (Y)

● To jump to the top of the next input (B)

■ **To change the PIN number**

1 Select [Change PIN]

Child Lock	
Change PIN	Access
Child Lock List	

① select
② access

2 Enter a new PIN number twice

Note

● Performing [Shipping Condition] (p. 47) erases the PIN number and all settings.

Input Labels

For easier identification and selection of the input mode, you can label each input mode or skip terminals that are not connected to any equipment.
● To select the input mode ➡ **(p. 23)**
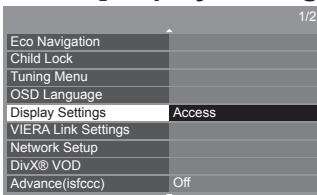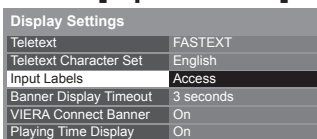
Preparations:
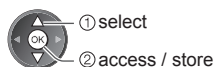
1 Display the menu
MENU

2 Select [Setup]

1 Select [Display Settings]

	1/2
Eco Navigation	
Child Lock	
Tuning Menu	
OSD Language	
Display Settings	Access
VIERA Link Settings	
Network Setup	
DivX® VOD	
Advance(isfccc)	Off

① select
② access

2 Select [Input Labels]

Display Settings

Teletext	FASTEXT
Teletext Character Set	English
Input Labels	Access
Banner Display Timeout	3 seconds
VIERA Connect Banner	On
Playing Time Display	On

① select
② access

3 Select an input terminal and set

Input Labels

AV1	DVD
AV2	AV2
AV3	AV3
PC	PC
HDMI1	HDMI1
HDMI2	HDMI2
HDMI3	HDMI3
HDMI4	HDMI4

① select
② access / store
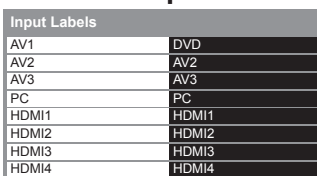
The labels you set will be displayed in [Input Selection] menu (p. 23) or banner.
● If [Skip] is selected, you cannot select the mode.

Panasonic
TV

■ **To return to TV**
EXIT

Input Labels

■ **User input**

You can name each input mode freely.

1 Select [User input]
① select
② access

2 Set characters one by one

User input
Name

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z	0	1	2	3	4	5	6	7	8	9	!	:	#
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
u	v	w	x	y	z	(	)	+	-	.	*	_							

① select
② set

(maximum: ten characters)

● You can set characters by using numeric buttons.
➡ **(p. 34)**

3 Store
RETURN

Shipping Condition (Reset settings)

Resets the TV to its original condition, i.e. no channels tuned in.
All settings are reset (channels, picture, sound settings, etc.).

Preparations:

1 Display the menu
MENU

2 Select [Setup]

MENU

EXIT

(OK)

Panasonic
TV

■ **To return to TV**
EXIT

1 Select [System Menu]

	2/2
System Menu	Access
Other Settings	

① select
② access

2 Select [Shipping Condition]

System Menu	
Shipping Condition	Access
Software Licence	
System Information	

① select
② access

[Shipping Condition] - Restore Settings

1 Check the message and reset

Shipping Condition

All tuning data will be erased
Are you sure ?
Are you sure ?

(confirm)

↓

(confirm)

↓

(start
[Shipping Condition])

2 Follow the on screen instructions

Reset to Factory Shipping Condition
Completed.
Please switch off TV.
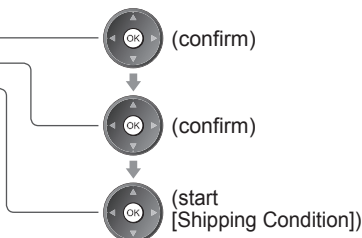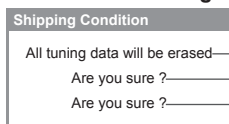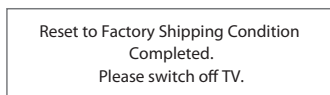
• [Auto Tuning] will automatically
start when Mains power On / Off
switch is next turned on (p. 13).

■ **To retune TV channels only, e.g. after moving house**
➡ **[Auto Tuning] in "Tuning and Editing Channels" (p. 44)**

Shipping Condition (Reset settings)

Using Media Player

Media Player allows you to enjoy photo, video or music recorded on an SD Card and a USB Flash Memory.
VIERA IMAGE VIEWER is the function of the easy viewing for photos or videos recorded on an SD Card on the TV screen by simply inserting into the SD Card slot.

Photo mode: Still pictures recorded by digital cameras will be displayed.

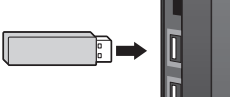Video mode: Moving pictures recorded by digital video cameras will be played back.

Music mode: Digital music data will be played back.

When these functions are used, the audio signal is output from audio output terminals.
● [Date] shows the date on which the recording was made by the recording equipment. The file without record of the date is shown "****/**/**".
● The picture may not appear correctly on this TV depending on the recording equipment used.
● Display may take some time when there are many files and folders.
● Partly degraded files might be displayed at a reduced resolution.
● Picture setting may not work depending on the conditions.
● The folder and file names may be different depending on the digital camera or digital video camera used.

To insert or remove the SD Card / USB Flash Memory
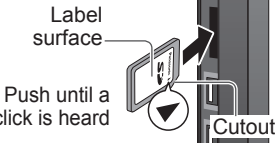
■ **USB Flash Memory**

● Insert or remove straightly and completely.

■ **SD Card**

| **To insert the SD Card** | | **To remove the SD Card** |

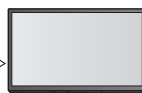Gently insert the SD Card label surface facing front.

Label surface

Push until a click is heard

Cutout

Push the centre of the card

● For more information of the SD Card, USB Flash Memory and supported file format ➡ **(p. 80 - 82)**

1 Insert the SD Card or USB Flash Memory
➡ **(p. 48)**
When the SD Card is inserted, switching to Media Player will be done automatically.

2 Switch to Media Player

3 Select the icon you want to access

Media Player

Drive Select

EXIT
Select
RETURN
Access   SD Card   Desktop
SD Card

selected device name

① select
② access
● If only one device is connected, this step will be skipped.

4 Select the content

Media Player

Contents Select

EXIT
Select
RETURN
Access   Photo   Video   Music
SD Card

① select
② access

[Photo]
➡ **"Photo mode" (p. 50)**
[Video]
➡ **"Video mode" (p. 54)**
[Music]
➡ **"Music mode" (p. 57)**

● You can also access each mode directly by using VIERA TOOLS.
➡ **"How to Use VIERA TOOLS" (p. 33)**

■ **To return to TV**

EXIT
or
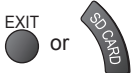
■ **To return to the previous screen**

RETURN

Change the device

You can change to the other device directly in the same mode if two or more devices are connected.

1 Display the menu
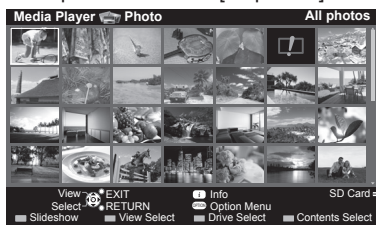
Y

2 Select the icon you want to access

Media Player   Photo   All photos

Drive Select

EXIT
Select
RETURN
Access   SD Card   Desktop
SD Card
Slideshow   View Select   Drive Select   Contents Select

① select
② access

selected device name

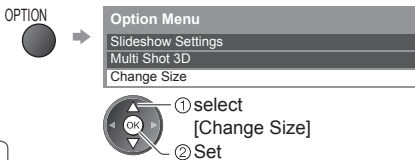Using Media Player

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Photo mode

Supported file format ➡ **(p. 80)**

The thumbnail of all the photos in the SD Card or USB Flash Memory will be displayed.
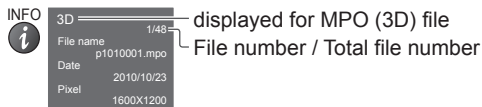Example: Thumbnail - [All photos]

Media Player 📷 Photo All photos	• To change the number of photos on a thumbnail screen at a time (7 × 4 ↔ 10 × 6)

View ➡ EXIT   ▯ Info   SD Card
Select 🔘 RETURN   📼 Option Menu
■ Slideshow   ■ View Select   ■ Drive Select   ■ Contents Select

🖼 : Error display   Selected Device Name

OPTION ➡

Option Menu
Slideshow Settings
Multi Shot 3D
Change Size

① select [Change Size]
② Set

• To change the background music ➡ **"Photo Setup" (p. 51)**
• To display the information of the highlighted photo

INFO ℹ
3D ⎯⎯ displayed for MPO (3D) file
      1/48 ⎯ File number / Total file number
File name   p1010001.mpo
Date   2010/10/23
Pixel   1600X1200

■ To sort by folder, recorded date or recorded month

1 Display the view selection

[G]

2 Select the sort type

Folder view
Sort by Date
Sort by Month

① select
② access
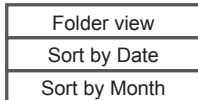
[Folder view]:
    Displays the thumbnail grouped by folder
     • The files which are not into a folder will be collected to the folder named "/".

[Sort by Date]:
    Displays the thumbnail grouped by the same date
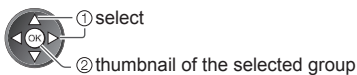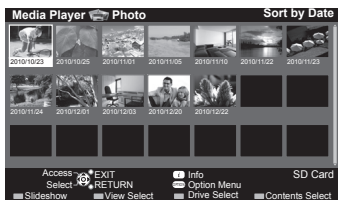   • The group of the photos without a recorded date is shown as [Unknown].

[Sort by Month]:
    Displays the thumbnail grouped by the same month
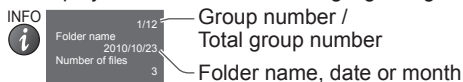   • The group of the photos without a recorded date is shown as [Unknown].

3 Select one of the sorted groups to display the thumbnail of the selected group

Media Player 📷 Photo   Sort by Date

2010/10/23   2010/10/25   2010/11/01   2010/11/05   2010/11/10   2010/11/22   2010/11/23
2010/11/24   2010/12/01   2010/12/03   2010/12/20   2010/12/22

Access ➡ EXIT   ▯ Info   SD Card
Select 🔘 RETURN   📼 Option Menu
■ Slideshow   ■ View Select   ■ Drive Select   ■ Contents Select

① select
② thumbnail of the selected group

• To return to the thumbnail of all photos

[G] ➡ ① select [All photos]
② access

• To display the information of the highlighted group

INFO ℹ
      1/12 ⎯ Group number / Total group number
Folder name
      2010/10/23
Number of files   3 ⎯ Folder name, date or month

Using Media Player

[Single view] - Photos are displayed one at a time.
Select the file from the thumbnail of photos to be viewed
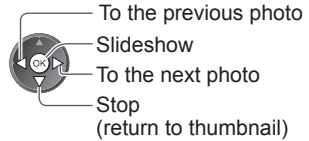
① select

② access

Example:

Operation guide

● To display / hide the
operation guide
INFO

● To return to thumbnail
RETURN

● To operate Single view

To the previous photo

Slideshow

To the next photo

Stop
(return to thumbnail)

● To rotate 90°
B

[Slideshow] - Slideshow will complete when all photos have been viewed within the present thumbnail.

1 Select the file from the thumbnail of photos for the first view

select

2 Start Slideshow

R

● To display / hide the operation guide
INFO

● To pause (return to Single view)

● To return to thumbnail
RETURN

Photo Setup

Setup the settings for Photo mode.

1 Display the option menu

OPTION

2 Select [Slideshow Settings]

Option Menu
Slideshow Settings
Multi Shot 3D
Change Size

① select

② access
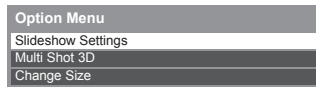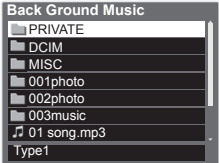
3 Select the items and set

Slideshow Settings	
Frame	Off
Colour Effect	Off
Transition Effect	Fade
Screen Mode	Normal
Burst Playback	Off
Interval	5 seconds
Repeat	On
Back Ground Music	

① select

② access / store
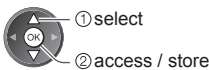
Note

● Picture quality may become lower depending on the slideshow settings.
● Picture setting may not work depending on the slideshow settings.

Using Media Player

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Item	Adjustments / Configurations (alternatives)
Frame	Selects the indication frame of the slideshow **[Off] / [Multi] / [Collage] / [Drift (+ calendar)] / [Drift] / [Gallery (+ calendar)]** **/ [Gallery] / [Cinema]** **[Multi]:** 9 division display like tiled design **[Collage]:** A photo is displayed at a random position and at a random scale. **[Drift (+ calendar) / Drift]:** Photos are displayed like flow images. • You can select to display the calendar or not. To change the month of the calendar, press the left or right cursor button while viewing the slideshow. **[Gallery (+ calendar) / Gallery]:** The various sizes of photos in the frame are displayed. • You can select to display the calendar or not. To change the month of the calendar, press the left or right cursor button while viewing the slideshow. **[Cinema]:** Photos are displayed like old films (sepia tone)
Colour Effect	Selects the colour effect of photos on Single view and Slideshow **[Off] / [Sepia] / [Gray scale]** • This function is not available when [Frame] is set to [Drift], [Gallery] or [Cinema].
Transition Effect	Selects the transition effect for switching the photo during the slideshow **[Off] / [Fade] / [Slide] / [Dissolve] / [Motion] / [Random]** **[Fade]:** The next photo fades in gradually. **[Slide]:** The next photo slides and appears from the left side. **[Dissolve]:** The photo is replaced by an indefinite block unit. **[Motion]:** The photo is replaced with enlarged, reduced, moved up or moved down. **[Random]:** Each transition is selected at random. • This function is available when [Frame] is set to [Off].
Screen Mode	Selects enlarged or normal viewing on Single view and Slideshow **[Normal] / [Zoom]** • This function is not available when [Frame] is set to [Collage], [Drift], [Gallery] or [Cinema]. • This function is not available when [Transition Effect] is set to [Motion]. • Depending on the photo size, the photo may not be enlarged.
Burst Playback	Selects whether the continuous shots are displayed in rapid interval during the slideshow **[Off] / [On]** • This function is not available when [Frame] is set to [Drift], [Gallery] or [Cinema]. • This function is not available when [Transition Effect] is set to [Motion].
Interval	Selects slideshow interval **[5] / [10] / [15] / [30] / [60] / [90] / [120] (seconds)** • This function is not available when [Transition Effect] is set to [Motion].
Repeat	Slideshow repeat **[Off] / [On]**
Back Ground Music	Selects the background music during Photo mode **[Off] / [Type1] / [Type2] / [Type3] / [User] / [Auto]** • [Type1], [Type2] and [Type3] are the fixed music each installed in this TV. **[User]:** Music data in the current device registered by yourself will be played back. **To register the music** 1 Select the music file 2 Select [File] or [Folder] Depending on the conditions of the current device, select folders until you reach the desired music file. **Back Ground Music** PRIVATE DCIM MISC 001photo 002photo 003music 01 song.mp3 Type1 ① select ② access **Register Slideshow BGM?** File Folder ① select ② set [File]: The selected music file will be registered as background music. [Folder]: All the music in the folder which contains the selected music file will be registered as background music. • If no music has been registered or the registered music device is removed, no sound will be produced. **[Auto]:** Music data stored in the root folder of the current device will be played back randomly. • If there is no available music data, no sound will be produced.

Using Media Player

Multi Shot 3D

This TV can create the 3D photo using a pair of photos in the SD Card and save it into the same
SD Card.
- This TV can also create the 3D photo from photos in the USB Flash Memory, but cannot save it.
- This function is available with photos recorded by digital cameras.
- Depending on the photos you select, the created 3D photo may not be suitable or the 3D photo
  creation may not be possible.
- It is recommended to take a photo (for L) and then move your camera to the right about 5 cm and take
  another photo (for R).
- To view the created 3D photo with 3D effect, you need the 3D Eyewear (supplied)
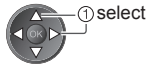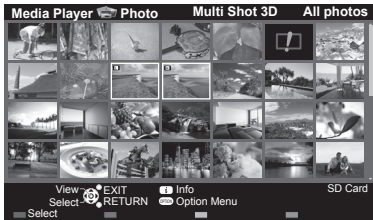
1 Display the option menu in the thumbnail view

OPTION

2 Select [Multi Shot 3D]

Option Menu
Slideshow Settings
Multi Shot 3D
Change Size

① select
② access

3 Select two photos for L (left) and R (right)

Media Player Photo   **Multi Shot 3D**   **All photos**

View — EXIT   Info   SD Card
Select — RETURN   Option Menu
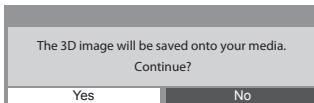Select

① select

② set
R

- You can only select photos of the same recorded date and
  same pixels.
- You may not be able to view the created 3D photo properly if
  you select the photos for L and R oppositely.

4 Create the 3D photo

- If your selected photos are not suitable for the 3D photo, the error message will be displayed
  and will return to the photo selection screen.
- To save the 3D photo in the SD Card

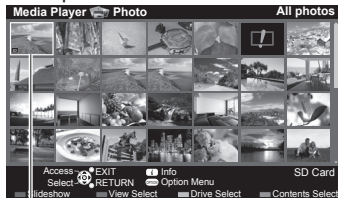| The 3D image will be saved onto your media. |
| --- |
| Continue? |
| Yes | No |

① select [Yes]
② save

After finishing saving the photo, the photo selection screen will be displayed (step 3). Select
photos again to create another 3D photo or exit from [Multi Shot 3D] mode.

■ To enjoy the saved 3D photos

You can enjoy viewing the saved 3D photos.

Example: Thumbnail

Media Player Photo   **All photos**

Access — EXIT   Info   SD Card
Select — RETURN   Option Menu
Slideshow   View Select   Drive Select   Contents Select

Saved 3D photo

- Single view ➡ **(p. 51)**
- Slideshow ➡ **(p. 51)**

Using Media Player

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Change the contents

You can switch to the other mode of Media Player from the thumbnail view.

1 While the thumbnail is displayed, display the contents selection

B

2 Select the contents

Media Player 🖼 Photo　　　　　　　　**All photos**

Contents Select

EXIT Select
RETURN
Access
SD Card

Photo　　Video　　Music

① select
② access

[Photo] ➡ **"Photo mode" (p. 50)**
[Video] ➡ **"Video mode" (below)**
[Music] ➡ **"Music mode" (p. 57)**

Video mode

Supported file format ➡ **(p. 81)**

The thumbnail of video titles in the SD Card or USB Flash Memory will be displayed.

Example: Thumbnail - [Title view]

Media Player 🎞 Video　　　　　　　　**Title view**

Trip1　Trip2　Trip3　Trip4　Trip5　Room　Nature1

Nature2　Nature3　Nature4　Nature5　Nature6　2010_4　2010_7

2010_9

Access EXIT Info SD Card
Select RETURN Option Menu
Play Drive Select Contents Select

The preview will start when the title is highlighted if it supports a preview.
• To turn off the preview ➡ **"Video Setup" (p. 55)**
• To display the information of the highlighted title

INFO ⓘ

3D ⎯ displayed for 3D video file
ᴀᴠᴄʜᴅ
1/15 ⎯ File format
Title
　　　Trip1 ⎯ Title number /
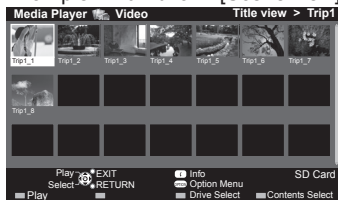Date & Time　　　　　Total title number
　　2010/02/19 11:21
Number of scenes
　　　8
Duration
　　　00h15m39s

🖼 : Error display
▢ : The file does not support thumbnail view.

• To view the scenes of the title
Select the title
Example: Thumbnail - [Scene view]

Media Player 🎞 Video　　　　　　　　**Title view > Trip1**

Trip1_1　Trip1_2　Trip1_3　Trip1_4　Trip1_5　Trip1_6　Trip1_7

Trip1_8

Play EXIT Info SD Card
Select RETURN Option Menu
Play Drive Select Contents Select

① select
② access

The preview will start when the scene is highlighted if it supports a preview.
• To turn off the preview
➡ **"Video Setup" (p. 55)**
• To display the information of the highlighted scene

INFO ⓘ

3D ⎯ displayed for 3D video file
ᴀᴠᴄʜᴅ
1/8 ⎯ File format
Scene
　　　Trip1_1 ⎯ Scene number /
Date & Time　　　　　Total scene number
　　2010/02/19 11:21
Duration
　　　00h04m12s
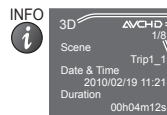
■ Playback from Title view

Playback of the selected title will start.
• To repeat playback ➡ **"Video Setup" (p. 55)**

1 Select the title

select

2 Start playback

R

■ Playback from the selected scene in the title

Playback will start from the selected scene to the end of the title.
• To repeat playback ➡ **"Video Setup" (p. 55)**

1 Select the title

① select
② access

2 Select the scene

select

3 Start playback

R

Note

• The structure of titles and scenes may vary depending on the digital video camera used.

Using Media Player

■ How to operate playback

Example: Playback

Operation guide   Information banner

●You can also use the following buttons ➤ **(p. 24)**
Set the remote control code to "73"

⏮	⏭
◀◀	▶▶	▶	■	❚❚/❚▶

■ **To change the content ➤ "Change the contents" (p. 54)**

●To display / hide the operation guide and information banner
INFO
ⓘ

●To operate playback

◀◀ Rewind
❚❚/▶ Pause / Playback
▶▶ Fast forward
■ Stop

●To change aspect
ASPECT
⊞

●To the previous title / scene
R

●To the next title / scene
G

●To return to thumbnail
RETURN
↰

Video Setup

Setup the settings for Video mode.

1 Display the option menu in the thumbnail view

OPTION

2 Select [Video Setup]

Option Menu
Video Setup

access

3 Select the items and set

Video Setup Menu	
Video Preview	On
Repeat	Off
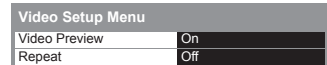
① select
② access / store

Item	Adjustments / Configurations (alternatives)
Video Preview	Sets to start the preview of the title or scene in the thumbnail view **[Off] / [On]** ●Image may not be displayed for an instant in the thumbnail view. Set the preview [Off] to resolve this.
Repeat	Playback repeat within the title or selected file (depending on the content) **[Off] / [On]**

Confirm or change the current status

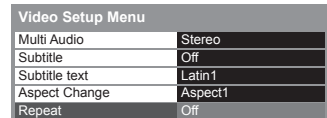You can confirm or change the current status of the content.
●Menu items and selectable options vary depending on the content.

1 Display the option menu during playback

OPTION

2 Select [Video Setup]

Option Menu
Video Setup

access

3 Select the items and set

Video Setup Menu	
Multi Audio	Stereo
Subtitle	Off
Subtitle text	Latin1
Aspect Change	Aspect1
Repeat	Off

① select
② access / store

Item	Adjustments / Configurations (alternatives)
Multi Audio	Allows you to select between selectable sound tracks (if available) ●It may take several seconds to change the sound.
Subtitle	Turn the subtitle on/off and select the subtitle file (if available) **[Off] / [Subtitle1] (/ [Subtitle2] ...)**
Subtitle text	Selects the font type, if the subtitles text is not displayed correctly. **[Latin1] / [Latin2] / [Cyrillic] / [Turkish] / [Unicode] / [Chinese1] / [Chinese2]** ●Some subtitles text may not be displayed correctly.
Aspect Change	**[Aspect1]:** Displays the content enlarged without distortion **[Aspect2]:** Displays the content full-screen **[Original]:** Displays the content original size ●You can also change the aspect using the ASPECT button. ●Aspect change may not work depending on the content.

Audio output Settings

You can enjoy the multi-channel sound via an amplifier connected to the DIGITAL AUDIO OUT terminal.
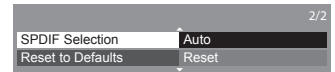●To confirm or change the current sound status ➡ **"Confirm or change the current status" (p. 55)**

1 Display the menu
MENU

2 Select [Sound]

VIEᴦA **Main Menu**

Picture
Sound
Timer
Setup

①select
②access

3 Select [SPDIF Selection] and set

2/2
SPDIF Selection — Auto
Reset to Defaults — Reset

①select
②access / store

Item	Adjustments / Configurations (alternatives)
SPDIF Selection	SPDIF: A standard audio transfer file format Selects the initial setting for digital audio output signal from the DIGITAL AUDIO OUT and HDMI2 (ARC function) terminals **[Auto] / [PCM]** **[Auto]:** Dolby Digital Plus, Dolby Digital and HE-AAC (48 kHz) multi-channel are output as Dolby Digital Bitstream. DTS is output as DTS. MPEG is output as PCM. **[PCM]:** Digital output signal is fixed to PCM.

Music mode

Supported file format **(p. 82)**

The thumbnail of music folders in the SD Card or USB Flash Memory will be displayed.
Example: Thumbnail - [Folder view]

Media Player ♫ Music	Folder view
My Music_1 My Music_2 My Music_3	

Access — EXIT
Select — RETURN
■ Play Folder   ■ Info   ■ Drive Select   ■ Contents Select   SD Card
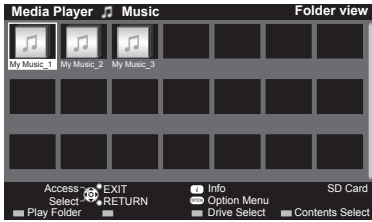
• To display the information of the highlighted folder

INFO
ⓘ
1/3	— Folder number / Total folder number
Folder name	
My Music_1	
Number of files	
11	

■ Playback from Folder view

All the files in the selected folder will be played back.

1 Select the folder

select

2 Start playback

R

■ Playback from File view

Selected file will be played back.

1 Select the folder

① select
② access

2 Select the file

Media Player ♫ Music	Folder view > My Music_1
My Song_1 My Song_2 My Song_3 My Song_4 My Song_5 My Song_6 My Song_7	
My Song_8 My Song_9 My Song_10 My Song_11	

Play — EXIT
Select — RETURN
■ Play Folder   ■ Info   ■ Drive Select   ■ Contents Select   SD Card

select

3 Start playback

R

• To display the information
of the highlighted title

INFO
ⓘ
	1/11	— File number / Total file number
Title	My Song_1	
Album	My Music_1	
Artist	My Favorite	
Track No.	1	
Duration	00h03m29s	
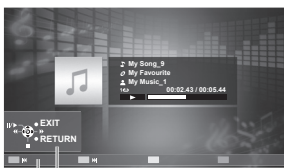
■ How to operate playback

• To display / hide the operation guide
INFO ⓘ

• To operate playback

♫ My Song_9	
♪ My Favourite	
♫ My Music_1	
00:02:43 / 00:05:44	

II/► — EXIT
— RETURN

Operation guide

◄◄ Rewind
II/► Pause / Playback
►► Fast forward
■ Stop

• To the previous track
R

• To the next track
G

• To return to thumbnail
RETURN

Music Setup

Setup the setting for Music mode.

1 Display the option menu

OPTION

2 Select [Music Setup]

Option Menu
Music Setup

access
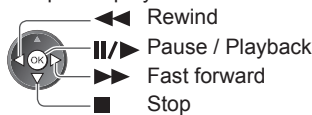
3 Set

Music Setup Menu	
Repeat	One

① select
② access

[Folder]: Playback repeats within the selected folder
[One]: Playback repeats of the selected one file

Using Network Services

DLNA®

This TV is a DLNA Certified™ product.
DLNA (Digital Living Network Alliance) is a standard that makes DLNA Certified digital electronics easier and more convenient to use on a home network. To learn more, visit www.dlna.org.
It allows you to share photos, videos and music stored in a DLNA Certified media server (for example, PC with windows 7 installed (with suitable CODEC pack plug-in), etc.) connected to your home network, and enjoy them on the TV.

Supported file format ⇒ **(p. 80 - 82)**

Media server
Ensure the connected equipment is a DLNA Certified media server.
To use a PC, install the server software on the PC for obtaining a media server.
Store photos, videos or music into the media server, and then you can watch them on the TV.
"TwonkyMedia server 6" and "Windows 7" are the server software that has been tested for the performance with this TV (current as of January, 2011).
For installing, read the manual of the server software.
● When the server software for the media server is installed on the PC, the data may be at risk of being accessed by other people. Please take care of the settings and connections under the network circumstances at the office, hotel or even at home when not using a router.

DLNA Remote Control
This TV supports the DLNA control function.
● To use this function, set the [Network Link Settings] (p. 60)
● "Windows 7" is the OS that has been tested for compatibility of this TV (current as of January, 2011). For the operations, refer to the help functions of Windows 7.

Network connection
⇒ **"Example 1" or "Example 2" in "Network connections" (p. 59)**

Network setup
⇒ **(p. 60 - 63)**

DLNA operations
⇒ **(p. 64 - 67)**

VIERA Connect

VIERA Connect is a gateway to the internet services unique to Panasonic and expands VIERA CAST functions greatly.
VIERA Connect allows you to access some specific websites supported by Panasonic, and enjoy internet contents such as photos, videos, games, etc. from VIERA Connect home screen.
● This TV has no full browser function and all features of websites may not be available.

Network connection
⇒ **"Example 1" or "Example 3" in "Network connections" (p. 59)**

Network setup
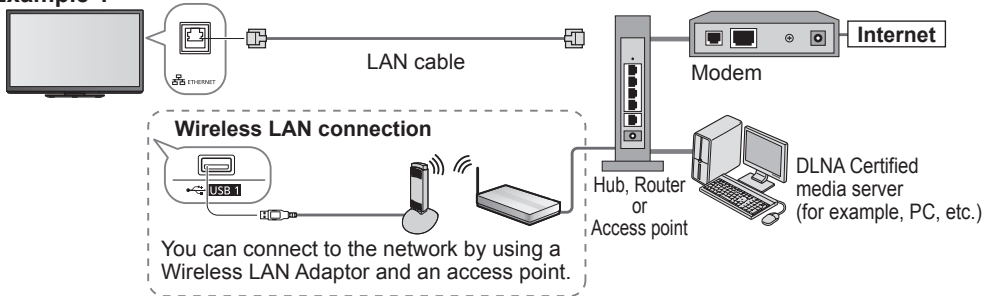⇒ **(p. 60 - 63)**

VIERA Connect operations
⇒ **(p. 17, 67)**

Network connections

To use only DLNA features, you can operate the features without a Broadband network environment.
To use VIERA Connect features, you need a Broadband network environment.
● If you do not have any Broadband network services, please consult your retailer for assistance.
● Confirm the terms and conditions of the contracts with your Internet Service Provider (ISP) or telecommunications company.
● Set up and connect any equipment required for the network environment.
● Required speed (effective): at least 1.5 Mbps for SD and 6 Mbps for HD picture quality, respectively. If the transfer speed is not enough, contents may not be played back properly.
● Read the manual of the network equipment, too.

Example 1

LAN cable

Modem

Internet

Wireless LAN connection

USB 1

Hub, Router or Access point

DLNA Certified media server (for example, PC, etc.)

You can connect to the network by using a Wireless LAN Adaptor and an access point.

● Ensure to use a LAN straight cable for this connection.
● If your modem has no broadband router functions, use a broadband router.
● If your modem has broadband router functions but there are no vacant ports, use a hub.
● Ensure that the Broadband routers and hubs are compatible with 10BASE-T / 100BASE-TX.
● If you use the equipment compatible only with 100BASE-TX, category 5 LAN cables are required.

Example 2

You can connect the TV and the equipment directly to use DLNA features.

LAN cable

DLNA Certified media server (for example, PC, etc.)
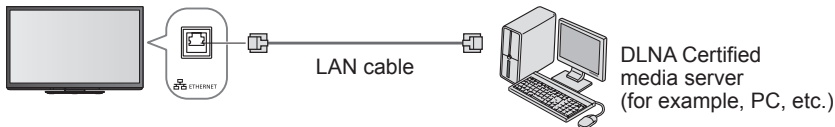
● Ensure to use a LAN cross cable for this connection.

Example 3

You can connect the TV and the telecommunication equipment directly to use VIERA Connect features.

LAN cable

Internet

Modem
If you cannot use VIERA Connect features, use Example 1 connection.
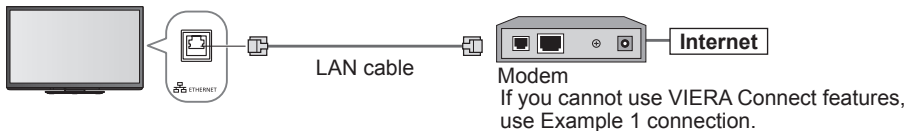
(Note)

● Depending on the ISP or telecommunications company, the required equipment and the Internet connection procedure are different. Ensure that you use network equipment that is authorised by your ISP and telecommunications company.
● You cannot make settings for the network equipment on this TV. You may be required to make settings on your computer.
● Depending on the terms and conditions of the contracts with your ISP or telecommunications company, additional fees may be charged or multiple connections to the Internet may be impossible.
● Please contact your ISP or telecommunications company if you require further assistance regarding the network equipment.

Using Network Services

59

[Network Setup]

● Ensure the connections are completed before starting Network Setup.
  ➡ **"Network connections" (p. 59)**

Preparations:

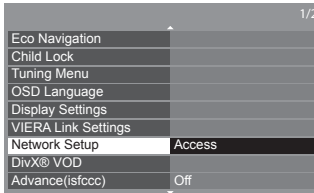**1** Display the menu   **2** Select [Setup]
MENU

1 Select [Network Setup]

	1/2
Eco Navigation	
Child Lock	
Tuning Menu	
OSD Language	
Display Settings	
VIERA Link Settings	
Network Setup	Access
DivX® VOD	
Advance(isfccc)	Off

① select
② access

■ **To return to TV**
EXIT

Network Link Settings

Sets the link settings to control this TV from the network equipment via the network.

1 Select [Network Link Settings]

Network Setup	
Connection Test	
Network Type	Wired
Access Point Settings	
IP/DNS Settings	
Network Link Settings	Access
Software Update	
MAC Address	ab-cd-ef-gh-ij-kl

① select
② access

2 Select the items and set

Network Link Settings	
VIERA Name	VIERA
DLNA Remote Control	On
DLNA Remote Volume	Off
Network Remote Control	On

select
access / store

Item	Adjustments / Configurations (alternatives)
VIERA Name	Sets your favourite name for this TV and this name will be used to display the name of this TV on the screen of the other DLNA compatible equipment.
DLNA Remote Control	Enables to control the TV using Windows 7 via the network **[Off] / [On]**
DLNA Remote Volume	Enables to control the volume of the TV using Windows 7 via the network **[Off] / [On]**
Network Remote Control	Enables to control the TV from the network equipment (Smartphone, etc.) **[Off] / [On]** ● Depending on the area, this function may not be available. For details, consult your local Panasonic dealer. ● For more information of this function, visit the following website. (English only) http://panasonic.jp/support/global/cs/tv/

Using Network Services

Network settings for the LAN Cable connection

This setting is for the network connection by using the LAN cable.

1 **Select [Network Type] and set to [Wired]**

Network Setup

Connection Test	
Network Type	Wired
Access Point Settings	
IP/DNS Settings	
Network Link Settings	
Software Update	
MAC Address	12-34-56-78-9a-bc

① select

② access / store
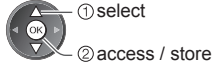
If you make the network connection like "Example 2" (p. 59), you do not have to set [DNS Address], [Proxy] and [Proxy Port].

2 **Select [IP/DNS Settings] and set the items**

Network Setup

Connection Test	
Network Type	Wired
Access Point Settings	
IP/DNS Settings	Access
Network Link Settings	
Software Update	
MAC Address	12-34-56-78-9a-bc

① select

② access

After settings, return to [Network Setup] screen

RETURN

■ **[Acquire IP Address]**
■ **[Acquire DNS Address]**

Sets [IP Address], [Subnet Mask], [Gateway] and [DNS Address].
For most users, the recommended method of connection to your network is by using [Auto] feature.

Select [Acquire IP Address] and then set to [Auto]
Select [Acquire DNS Address] and then set to [Auto]

IP/DNS Settings

Acquire IP Address	Auto
IP Address	192.168.11.5
Subnet Mask	255.255.255.0
Gateway	192.168.11.1
Acquire DNS Address	Auto
DNS Address	192.168.11.1
Proxy Settings	

① select

② access / store

● The available settings are displayed automatically.

2 ■ [Proxy Settings]

Set only if specified by the provider. It is not required for normal household use.

Select [Proxy Settings] and set the items

IP/DNS Settings	
Acquire IP Address	Auto
IP Address	192.168.11.5
Subnet Mask	255.255.255.0
Gateway	192.168.11.1
Acquire DNS Address	Auto
DNS Address	192.168.11.1
Proxy Settings	Access

① select

② access

After settings, return to [Network Setup] screen

RETURN

[Proxy]

Sets Proxy address.

● This is the address of the relay server that is connected to the target server instead of the browser and sends data to the browser. Setting is required if specified by the provider.

1. Select [Proxy]

Proxy Settings	
Proxy	
Proxy Port	0

① select

② access

2. Enter the address
Set characters one by one

Proxy	
Host	

A B C D E F G H I J K L M N O P Q R S T
U V W X Y Z 0 1 2 3 4 5 6 7 8 9 ! : #
a b c d e f g h i j k l m n o p q r s t
u v w x y z ( ) + - . , * _

① select

② set

● You can set characters by using numeric buttons.

3. Store

RETURN

[Proxy Port]

Sets Proxy port number.

● This number is also specified by the provider with the Proxy address.

1. Select [Proxy Port]

Proxy Settings	
Proxy	
Proxy Port	0

select

2. Move the cursor and enter the number

move ➡

3 Select [Connection Test] and access to test

Network Setup	
Connection Test	Access
Network Type	Wired
Access Point Settings	
IP/DNS Settings	
Network Link Settings	
Software Update	
MAC Address	12-34-56-78-9a-bc

① select

② access

● Performs automatic testing of the network connection for the TV. (It takes a while to test.)

Connection Test

☑ Check network cable connection.
☑ Check acquired IP address.
☑ Check for devices using same IP address.
☑ Check gateway connection.
☑ Check server connection.

☑ : succeeded

The test is successful and the TV is connected to the network.

☒ : failed

Check the settings and connections, and then perform this function again.

Network settings for the Wireless LAN connection

This setting is for the network connection by using a Wireless LAN Adaptor.
● Confirm the encryption key, settings and positions of your access point before starting setup.
  For details, read the manual of the access point.

1 Select [Network Type] and set to [Wireless]

Network Setup	
Connection Test	
Network Type	Wireless
Access Point Settings	
IP/DNS Settings	
Network Link Settings	
Software Update	
MAC Address	12-34-56-78-9a-bc

① select
② set

2 Select [Access Point Settings]

Network Setup	
Connection Test	
Network Type	Wireless
Access Point Settings	Access
IP/DNS Settings	
Network Link Settings	
Software Update	
MAC Address	12-34-56-78-9a-bc

① select
② access

3 Select the connection type and set

Connection Type
Please select network connection type.
WPS(Push button)
WPS(PIN)
Search for access point
Manual

① select
② access
[WPS(Push button)] ➡ **(p. 16)**
[WPS(PIN)]: Sets by entering the PIN code to the access point
[Search for access point] ➡ **(p. 16)**
[Manual]: Sets manually by entering the SSID of access point
● Follow the on screen instructions

4 Select [Connection Test] and access to test

Network Setup	
Connection Test	Access
Network Type	Wireless
Access Point Settings	
IP/DNS Settings	
Network Link Settings	
Software Update	
MAC Address	12-34-56-78-9a-bc

Connection Test
☑ Check access point connection.
☑ Check acquired IP address.
☑ Check for devices using same IP address.
☑ Check gateway connection.
☑ Check server connection.

① select
② access

Performs automatic testing of the network connection for the TV. (It takes a while to test.)

☑ : succeeded

The test is successful and the TV is connected to the network.

☒ : failed

Check the settings and connections, and then perform this function again.
If you continue to have difficulty, please contact your internet service provider.

Update TV's software

Accesses the specific web site to update TV's software and search if any software updates are available.

Network Setup	
Connection Test	
Network Type	Wired
Access Point Settings	
IP/DNS Settings	
Network Link Settings	
Software Update	Access
MAC Address	12-34-56-78-9a-bc

① select [Software Update]
② access
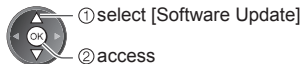
● Follow the on screen instructions

(Note)

Network Setup	
Connection Test	
Network Type	Wired
Access Point Settings	
IP/DNS Settings	
Network Link Settings	
Software Update	
MAC Address	12-34-56-78-9a-bc

[MAC Address]
● MAC address is a unique address that identifies hardware in the network.
(for information only)

Using Network Services

63

Using DLNA® features

● Ensure the preparation of the media server, network connections and network settings are completed.
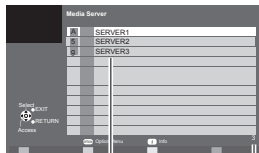   ➡ **"Media server" (p. 58), "Network connections" (p. 59), "Network Setup" (p. 60 - 63)**

1 Display icons of the feature

2 Select [Media Server]

VIERA LINK CONTROL   PHOTO   VIDEO   MUSIC   VIERA   Media Server

◀ (OK) ▶ — ① select
            ② access

3 Select one of the media servers you want to access

Media server list

Media Server	
SERVER1	
SERVER2	
SERVER3	

Select · EXIT
⊕ · RETURN
Access

Option Menu   Info   3

Available media servers

Total listed number

(OK) — ① select
       ② access

● To display the information of the highlighted media server
INFO
ⓘ

4 Select the file to be viewed

File list

Media Server			
SERVER1			
	P000102	2009-10-05	09:54
	P000135	2009-11-20	13:18
	P000180	2009-12-07	11:31
	P000214	2009-12-10	15:20
	P000251	2009-12-19	12:39
	P000276	2009-12-25	14:06
	P000293	2010-01-06	13:52
	M10025	2010-01-12	15:56
	M10042	2010-01-20	10:08
	M10054	2010-01-28	14:48
	M10078	2010-02-09	19:58

Pixel 3648x2736
Format JPEG

Select · EXIT
⊕ · RETURN
View

Option Menu   Info   28

Slideshow

(OK) — ① select
       ② access
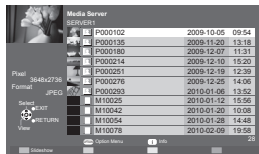
● Depending on the conditions of the media server, you may need to select the folder before selecting the file.
● Slideshow ➡ **(p. 65)**
● To display the information of the highlighted file
INFO
ⓘ

Note
● Non-playable files are also listed but cannot be selected.
● Turn the TV off, and then on again when changing or reconnecting the network connection.

■ **To return to TV**
EXIT

■ **To return to the previous screen**
RETURN

Panasonic
TV

Using Network Services

For photo file

[Single view] - Displayed one at a time

Operation guide

- To display / hide the operation guide `INFO`
- To operate Single view
  - To the previous photo
  - To the next photo
  - Slideshow
  - Stop (return to list)
- To rotate 90° `B`
- To return to the list `RETURN`

[Slideshow] - Slideshow will be started from the selected photo file and completed within the list.

Start Slideshow `R` → `OK`

- To display / hide the operation guide `INFO`
- To pause (return to Single view) `OK`
- To return to the list `RETURN`

For video file

Playback - Playback will start

Operation guide

- To display / hide the operation guide and information banner `INFO`
- To operate playback
  - ◀◀ Rewind
  - [Manual skip]
    (Skip to a fixed period forward manually
    for MPEG-2 (PS format and TS format) only)
  - ❙❙/▶ Pause / Playback
  - ▶▶ Fast forward
  - ■ Stop
- To the previous content `R`
- To the next content `G`
- To change aspect `ASPECT`
- To return to the list `RETURN`

For music file

Playback - Playback will start
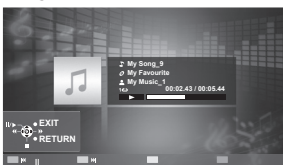
Operation guide

- To display / hide the operation guide `INFO`
- To operate playback
  - ◀◀ Rewind
  - ❙❙/▶ Pause / Playback
  - ▶▶ Fast forward
  - ■ Stop
- To the previous track `R`
- To the next track `G`
- To return to the list `RETURN`

Photo Setup (for photo contents)
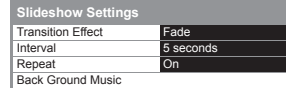
Setup the settings for Photo.

1 Display the option menu
OPTION

2 Select [Slideshow Settings]

Option Menu
Slideshow Settings
Video Setup
Music Setup

① select
② access

3 Select the items and set

Slideshow Settings	
Transition Effect	Fade
Interval	5 seconds
Repeat	On
Back Ground Music	

① select
② access / store

Item	Adjustments / Configurations (alternatives)
Transition Effect	Selects the transition effect for switching the photo during the slideshow **[Off] / [Fade] / [Slide] / [Dissolve] / [Motion] / [Random]** **[Fade]:** The next photo fades in gradually. **[Slide]:** The next photo slides and appears from the left side. **[Dissolve]:** The photo is replaced by an indefinite block unit. **[Motion]:** The photo is replaced with enlarged, reduced, moved up or moved down. **[Random]:** Each transition is selected at random.
Interval	Selects slideshow interval **[5] / [10] / [15] / [30] / [60] / [90] / [120] (seconds)**
Repeat	Slideshow repeat **[Off] / [On]**
Back Ground Music	Selects the background music while photo **[Off] / [Type1] / [Type2] / [Type3]** • [Type1], [Type2] and [Type3] are the fixed music each installed in this TV.

Video Setup (for video contents)
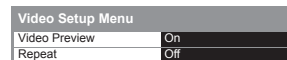
Setup the settings for Video mode.

1 Display the option menu
OPTION

2 Select [Video Setup]

Option Menu
Slideshow Settings
Video Setup
Music Setup

① select
② access

3 Select the items and set

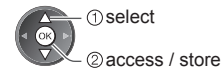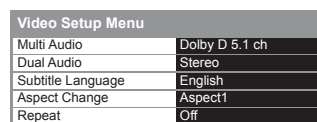| Video Setup Menu	
Video Preview	On
Repeat	Off

① select
② access / store

• For details ➡ **(p. 55)**

Confirm or change the current status (for video contents)

1 Display the option menu during playback
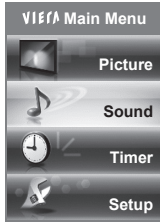OPTION

2 Select the items and set

Video Setup Menu	
Multi Audio	Dolby D 5.1 ch
Dual Audio	Stereo
Subtitle Language	English
Aspect Change	Aspect1
Repeat	Off

① select
② access / store

• For details ➡ **(p. 55, 56)**

Item	Adjustments / Configurations (alternatives)
Dual Audio	Selects multiplex sound (if available)
Subtitle Language	Allows you to select the language in which subtitles should appear (if available)

Audio output settings (for video contents)

You can enjoy the multi-channel sound via an amplifier connected to the DIGITAL AUDIO OUT terminal.

1 Display the menu
MENU

2 Select [Sound]

VIErA Main Menu

- Picture
- Sound
- Timer
- Setup

① select
② access

3 Select [SPDIF Selection] and set

		2/2
SPDIF Selection	Auto	
Reset to Defaults	Reset	

① select
② access / store

● For details
 ➡ **(p. 56)**

Music Setup

Setup the setting for Music mode.

1 Display the option menu
OPTION

2 Select [Music Setup]

Option Menu
Slideshow Settings
Video Setup
Music Setup

① select
② access

3 Set

Music Setup Menu
Repeat   One

① select
② access / store

[Folder]: Playback repeats within the selected folder
[One]: Playback repeats of the selected one file

VIERA Connect

You can access a selection of internet services from VIERA Connect home screen.
● VIERA Connect requires a broadband internet connection. Dial-up internet connections cannot be used.
● Ensure the network connections and network settings are completed.
 ➡ **"Network connections" (p. 59), "Network Setup" (p. 60 - 63)**
● For details about VIERA Connect operation ➡ **"Using "VIERA Connect"" (p. 17)**
● Setup menu (Items in the [Setup] may change without notice.)

Customize HomeScreen	Changes the position of each services on VIERA Connect home screen
My Account	Confirms or removes the account information of the TV you entered on VIERA Connect
Lock	Sets to restrict access to some services
Beep	Sets beep sound On or Off when operating VIERA Connect
Notices	Displays the information of VIERA Connect

Note
● Be sure to update the software when a software update notice is displayed on the TV screen. If the software is not updated, you will not be able to use VIERA Connect.
 You can update the software later manually [Software Update] in the Network Setup Menu. ➡ **(p. 63)**
● VIERA Connect home screen is subject to change without notice.
● The services through VIERA Connect are operated by their respective service providers, and service may be discontinued either temporarily or permanently without notice. Therefore, Panasonic will make no warranty for the content or the continuity of the services.
● Some content may be inappropriate for some viewers.
● Some content may only be available for specific countries and may be presented in specific languages.
● Depending on the connection environment, the internet connection may be slow or may not be successful.
● Turn the TV off, and then on again when changing or reconnecting the network connection.
● Registration is required to access certain Internet contents. Refer registration steps shown on the screen when accessing Internet contents feature.

Using Network Services

67

VIERA Link Functions

VIERA Link "HDAVI Control™"

Enjoy additional HDMI interoperability with Panasonic products which have "HDAVI Control" function.
This TV supports "HDAVI Control 5" function.
Connections to equipment with HDMI cable such as a DIGA Recorder, HD Video Camera, Player theatre, Amplifier, etc., allow you to interface to them automatically.
These features are limited to models incorporating "HDAVI Control" and "VIERA Link".
- Some functions are not available depending on the equipment's version of HDAVI Control. Please confirm the connected equipment's version of HDAVI Control.
- VIERA Link "HDAVI Control", based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers' equipment that supports HDMI CEC cannot be guaranteed.
- Please refer to individual manuals for the external equipment. About applicable Panasonic equipment, consult your local Panasonic dealer.

Summary of features

Features \ Connected equipment with VIERA Link function	DIGA Recorder*1	DVD Player / Blu-ray Disc Player*1	HD Video Camera / LUMIX Camera*1	Player theatre*2	Blu-ray Disc theatre*2	Amplifier*2
Channel download	○*4	–	–	–	–	–
Easy playback	○	○	○	○*7	○*7	–
Power on link	○	○	○	○	○	–
Power off link	○	○	○	○	○	○
Reduce unnecessary power consumption in standby	○*5	○*5	–	–	○*5	–
Auto standby for unnecessary equipment	○*3	○*3	–	○*3*8	○*3*8	○*3
Pause Live TV programme	○*4 *6	–	–	–	–	–
Direct TV Recording	○*4	–	–	–	–	–
Control the menu of the connected equipment by VIERA remote control	○*3	○*3	○*3	○*3	○*3	–
Speaker control	–	–	–	○	○	○

*1: HDMI Connection only
*2: HDMI and Audio out connections
*3: available with equipment which has "HDAVI Control 2 or later" function
*4: available with equipment which has "HDAVI Control 3 or later" function

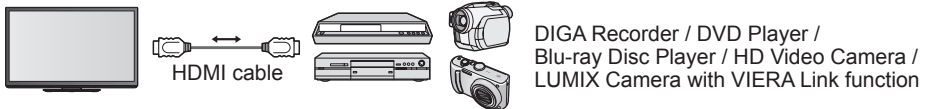*5: available with equipment which has "HDAVI Control 4 or later" function
*6: available with a DIGA Recorder which has HDD
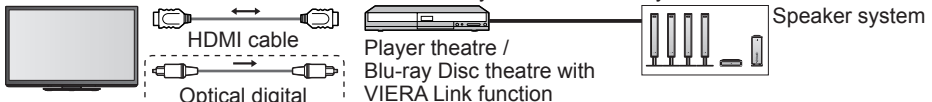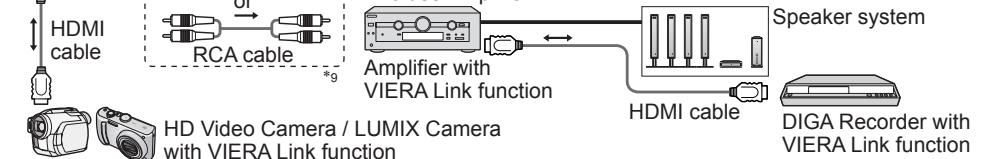*7: while playing a disc
*8: except for watching a disc

Connection

- To use DIGA Recorder / DVD Player / Blu-ray Disc Player / HD Video Camera / LUMIX Camera:

HDMI cable

DIGA Recorder / DVD Player / Blu-ray Disc Player / HD Video Camera / LUMIX Camera with VIERA Link function

HDMI cable

Optical digital audio cable
or
RCA cable *9

HDMI cable

HD Video Camera / LUMIX Camera with VIERA Link function

- To use Player theatre / Blu-ray Disc theatre:

Speaker system

Player theatre / Blu-ray Disc theatre with VIERA Link function

- To use Amplifier:

Speaker system

Amplifier with VIERA Link function

HDMI cable

DIGA Recorder with VIERA Link function

*9: If the connected equipment has "HDAVI Control 5" function, you do not have to use this audio cable (Optical digital audio cable or RCA cable). In this case, connect the equipment to the TV's HDMI2 terminal via an HDMI cable.

> **Note**
> - For a DIGA Recorder / DVD Player / Blu-ray Disc Player / HD Video Camera / LUMIX Camera with VIERA Link function, connect to HDMI1, HDMI2, HDMI3 or HDMI4 terminal via an HDMI cable.
> - For a Player theatre / Blu-ray Disc theatre / Amplifier, connect to HDMI1, HDMI2, HDMI3 or HDMI4 terminal via an HDMI cable, and also connect either the optical digital audio cable or RCA cable for audio output from the TV.
> - Use fully wired HDMI compliant cable. Non-HDMI-compliant cables cannot be utilised.
>   A recommended Panasonic's HDMI cable part number:
>   • RP-CDHS15 (1.5 m)   • RP-CDHS30 (3.0 m)   • RP-CDHS50 (5.0 m)

Preparations
- Connect the equipment supporting VIERA Link.
- Set up the connected equipment. Read the manual of the equipment.
- For optimal recording, the settings of the recorder may need to be changed. For details, read the manual of the recorder.
- Set [VIERA Link] [On] in the Setup Menu ➡ **[VIERA Link] (p. 42)**
- Set up the TV
  ➡ **After connection, turn the equipment on and then switch the TV on.**
    Select the input mode to HDMI1, HDMI2, HDMI3 or HDMI4 (p. 23), and make sure that an image is displayed correctly.
  This setup should be done each time when the following conditions occur:
  • for the first time   • when adding or reconnecting equipment   • when changing setup

Features available

Channel download

Channel settings can be downloaded to the recorder.

Easy playback

Automatic input switching - When connected equipment is operated, the input mode is switched automatically.

[Power on Link]

Set Power on Link [On] in the Setup Menu to use this function ➡ [Power on Link] (p. 42)
When the connected equipment starts playback or direct navigator / function menu for the equipment are activated, the TV is automatically turned on. (Only when the TV is in Standby mode.)

[Power off Link]

Set Power off Link [On] in the Setup Menu to use this function ➡ [Power off Link] (p. 42)
When the TV is set to Standby mode, the connected equipment is also automatically set to Standby.
- This function will work even if the TV enters Standby mode automatically by auto power standby function.

[Standby Power Save] - Reduce unnecessary power consumption in standby

Set Standby Power Save [On] in the Setup Menu to use this function ➡ [Standby Power Save] (p. 42)
The power consumption in Standby mode of the connected equipment is controlled higher or lower in synchronisation with the TV On / Off state to reduce the consumption.
When the TV is set to Standby mode, the connected equipment is automatically set to Standby and the power consumption in Standby mode of the connected equipment is automatically minimised.
When the TV is turned on, the connected equipment is still in Standby mode, but the power consumption is increased to make startup time early.
- This function is effective if the connected equipment can change the power consumption in Standby mode and is set to higher consumption.
- This function will work when [Power off Link] is set to [On].

[Intelligent Auto Standby] - Auto standby for unnecessary equipment

Set Intelligent Auto Standby [On (With reminder)] or [On (No reminder)] in the Setup Menu to use this function ➡ [Intelligent Auto Standby] (p. 42)
When the TV is On, non-watched or non-used connected equipment goes into Standby mode automatically to reduce the power consumption. For example, when the input mode is switched from HDMI, when Speaker Selection is changed to [TV] (except for watching a disc).
- If you select [On (With reminder)], the on screen message will be displayed to be noticed before working this function.
- This function may not work properly depending on the connected equipment. If required, set to [Off].

Features available (Using VIERA Link Menu)

[Pause Live TV]

You can pause the live TV programme and resume later.
Live TV programmes will be recorded on HDD of the connected DIGA Recorder.
● This function is available with a DIGA Recorder which has HDD.
● If you connect a variety of recorders including other manufacturers' recorders at the same time, please connect DIGA Recorder which has a HDD to the TV's lower HDMI terminal number. For example, if you use HDMI1 and HDMI2 for two recorders, in this case connect DIGA Recorder which has HDD to HDMI1.
● If you cannot operate, check the settings and the equipment
➡ **"Summary of features", "Connection", "Preparations" (p. 68 - 69)**

Access and pause the live TV programme

1 Display [VIERA Link Menu]

2 Select [Pause Live TV] and pause
The TV picture will be paused.

VIERA Link Menu	
Pause Live TV	Start
Direct TV Rec	Start
VIERA Link Control	Recorder
Speaker Selection	Home Cinema

①select
②pause

● The live TV programme is recorded on HDD from where it was paused
● If the paused TV picture disappears after a few minutes,

➡ OPTION ⬤ (the paused picture will be restored)

■ To operate Pause Live TV

search backward
pause
search forward
playback
stop
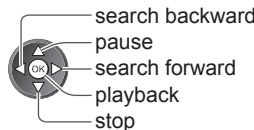
● Operations may be different depending on the recorder. In this case, follow the operation guide or read the manual of the recorder.

■ To return to Live TV
(stop playback of Pause Live TV / cancel pause)

TV ➡

Pause Live TV	
Stop Pause Live TV?	
Yes	No

①select [Yes]
②stop
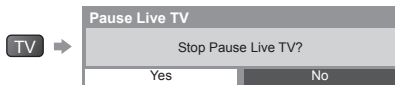
● If you stop playback or cancel pause, the recorded programme will be deleted from HDD.

[Direct TV Rec] - What you see is What you record

Recording the current programme in DIGA Recorder immediately.
● If you connect a variety of recorders including other manufacturers' recorders at the same time, please connect DIGA Recorder to the TV's lower HDMI terminal number. For example, if you use HDMI1 and HDMI2 for two recorders, in this case connect DIGA Recorder to HDMI1.
● If you cannot operate, check the settings and the equipment
➡ **"Summary of features", "Connection", "Preparations" (p. 68 - 69)**

1 Display [VIERA Link Menu]

2 Select [Direct TV Rec] and start recording

VIERA Link Menu	
Pause Live TV	Start
Direct TV Rec	Start
VIERA Link Control	Recorder
Speaker Selection	Home Cinema

①select
②start

■ To stop recording
Select [Stop] in [Direct TV Rec] and stop recording

VIERA Link Menu	
Pause Live TV	Start
Direct TV Rec	Stop
VIERA Link Control	Recorder
Speaker Selection	Home Cinema

①select
②stop

VIERA Link Functions

You can control some functions of the connected equipment with this TV remote control by pointing at the TV's signal receiver.
- If you cannot operate, check the settings and the equipment
  ➡ **"Summary of features", "Connection", "Preparations" (p. 68 - 69)**
- For details of the operations for the connected equipment, read the manual of the equipment.
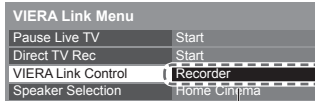
Access and operate the menu of the equipment

1 Display [VIERA Link Menu]

2 Select [VIERA Link Control]

VIERA Link Menu	
Pause Live TV	Start
Direct TV Rec	Start
VIERA Link Control	Recorder
Speaker Selection	Home Cinema
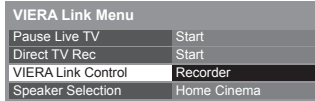
① select
② access

3 Select the equipment you want to access
The type of the connected equipment is displayed.
Select the type of the equipment and access.

VIERA Link Menu	
Pause Live TV	Start
Direct TV Rec	Start
VIERA Link Control	Recorder
Speaker Selection	Home Cinema

① select
② store

[Recorder] / [Player] / [Home Cinema] / [Video Camera] / [LUMIX] / [Digital Camera] / [Other]

- You can also access directly by using VIERA TOOLS ➡ **(p. 33)**
- The displayed item may vary depending on the connected equipment.
- [Home Cinema] means Player theatre, Blu-ray Disc theatre or Recorder theatre.
- [Other] means Tuner set top box.

The menu of the accessed equipment
(Input mode will be changed automatically)

4 Operate the connected equipment

- To display the operation guide OPTION

- Move the cursor / select the menu

- Move the cursor / access / adjust

- Store / set / access

- Return to the previous menu RETURN
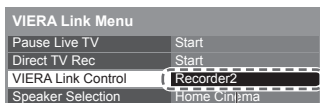
- Exit the menu EXIT

When the key words are displayed on colour bar R G Y B
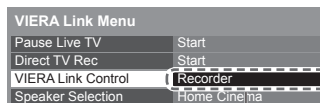
Note
- Some operations may not be available depending on the equipment. If so, use its own remote control.

■ **If multiple recorders or players are connected**

VIERA Link Menu	
Pause Live TV	Start
Direct TV Rec	Start
VIERA Link Control	Recorder2
Speaker Selection	Home Cinema

[Recorder1-3 / Player1-3]

The number is given from the TV's lower HDMI terminal number connected to the same type equipment. For example, two recorders to HDMI2 and HDMI3, in this case the recorder connected to HDMI2 is displayed as [Recorder1], and the recorder connected to HDMI3 is displayed as [Recorder2].

■ **If you access non-VIERA Link equipment**

VIERA Link Menu	
Pause Live TV	Start
Direct TV Rec	Start
VIERA Link Control	Recorder
Speaker Selection	Home Cinema

Type of the connected equipment is displayed

You can access the menu of the equipment, but you cannot operate it. Use its own remote control to operate the equipment.

VIERA Link Functions

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[Speaker Selection] - Speaker control

You can control the theatre speaker with this TV remote control by pointing at the TV's signal receiver.
● If you cannot operate, check the settings and the equipment
➡ **"Summary of features", "Connection", "Preparations" (p. 68 - 69)**

Access and control the speaker volume

1 Display [VIERA Link Menu]

2 Select [Speaker Selection]

VIERA Link Menu	
Pause Live TV	Start
Direct TV Rec	Start
VIERA Link Control	Recorder
Speaker Selection	Home Cinema

① select
② access

3 Set to [Home Cinema] or [TV]

① select
② store

[Home Cinema]

Player theatre, Blu-ray Disc theatre or Amplifier will be automatically turned on if it is in Standby mode and the sound is from theatre speakers connected to the equipment.

● Volume up / down [VOL +/−]

● Mute [MUTE]

● The sound of TV speakers is mute.
● When the equipment is turned off, TV speakers will be active.

[TV]

TV speakers are active.

Multi-channel sound

● If you wish to enjoy the multi-channel sound (e.g. Dolby Digital 5.1ch) via an Amplifier, connect with HDMI cable and Optical digital audio cable (p. 68), and then select [Home Cinema]. If your Amplifier has "HDAVI Control 5" function, you can connect only with HDMI cable. In this case, connect your Amplifier to the TV's HDMI2 terminal.
To enjoy the sound from the DIGA Recorder in multi-channel sound, connect an HDMI cable from the DIGA Recorder to the Amplifier (p. 68).

Panasonic
TV

> **Note**
> ● These functions may not work properly depending on the connected equipment.
> ● Image or sound may not be available for the first few seconds when the Input mode is switched.
> ● Easy playback may be available by using the remote control for Player theatre, Blu-ray Disc theatre or Amplifier. Read the manual of the equipment.
> ● "HDAVI Control 5" is the newest standard (current as of December, 2010) for HDAVI Control compatible equipment. This standard is compatible with conventional HDAVI equipment.
> ● To confirm this TV's version of HDAVI Control ➡ **[System Information] (p. 42)**

VIERA Link Functions
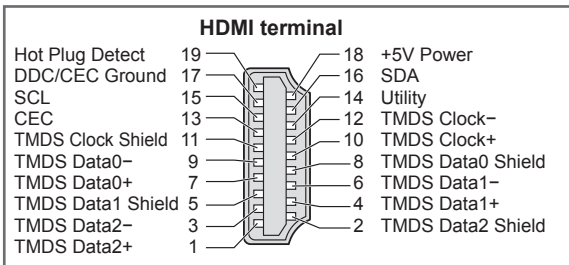
External Equipment

These diagrams show our recommendations for connection of your TV to various pieces of equipment. For other connections, consult the instructions for each piece of equipment, the table below, and the specifications (p. 87).

Types of connectable equipment to each terminal

Equipment	AV1 IN*1	AV2 IN*1	AV3 IN*1	AUDIO OUT*1	DIGITAL AUDIO OUT*1	HDMI 1 - 4
To play back videocassettes / DVDs (VCR / DVD Recorder)	○	○	○			*2 ○
To watch DVDs (DVD Player)	○	○	○			○
To watch satellite broadcasts (Set top box)	○	○	○			○
To watch camcorder images (Video camera)	○	○	○			○
To play games (Game equipment)	○	○	○			○
To use amplifier with speaker system				○	○	*3 ○
VIERA Link						○

Equipment	ETHERNET	USB 1 - 3
To use Network services	○	○

○ : Recommended Connection
*1: To connect the equipment, the terminal adaptor (supplied) is necessary.
*2: Only for DVD Recorder
*3: Use HDMI2 for connecting an amplifier. This connection is applicable when using an amplifier that has ARC (Audio Return Channel) function.

HDMI terminal

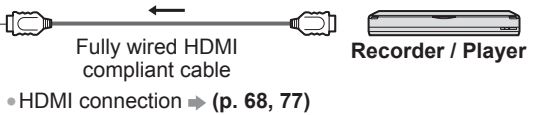|			
Hot Plug Detect	19	18	+5V Power
DDC/CEC Ground	17	16	SDA
SCL	15	14	Utility
CEC	13	12	TMDS Clock−
TMDS Clock Shield	11	10	TMDS Clock+
TMDS Data0−	9	8	TMDS Data0 Shield
TMDS Data0+	7	6	TMDS Data1−
TMDS Data1 Shield	5	4	TMDS Data1+
TMDS Data2−	3	2	TMDS Data2 Shield
TMDS Data2+	1		

Panasonic does not guarantee operation and performance of peripheral devices made by other manufacturers; and we disclaim any liability or damage arising from operation and/or performance from usage of such other maker's peripheral devices.

External Equipment
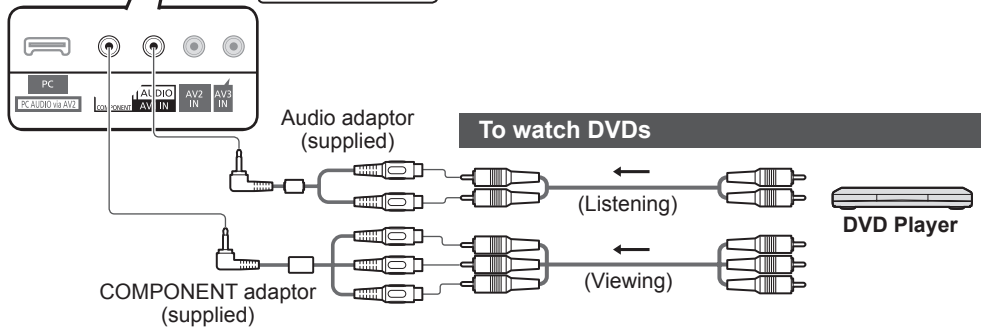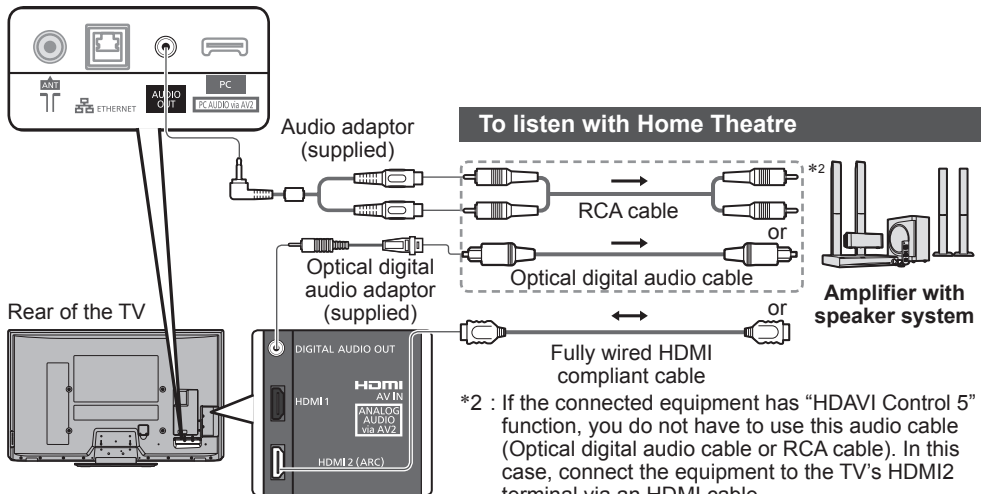
To play back

RF adaptor (supplied)

Aerial

ANT
ETHERNET
AUDIO OUT
PC
PC AUDIO via AV2
COMPONENT
AUDIO AV1 IN
AV2 IN
AV3 IN

RF cable

DVD Recorder
or
VCR

Composite adaptor (supplied)

or

Rear of the TV

HDMI 1
HDMI AV IN
ANALOG AUDIO via AV2

Fully wired HDMI compliant cable*1
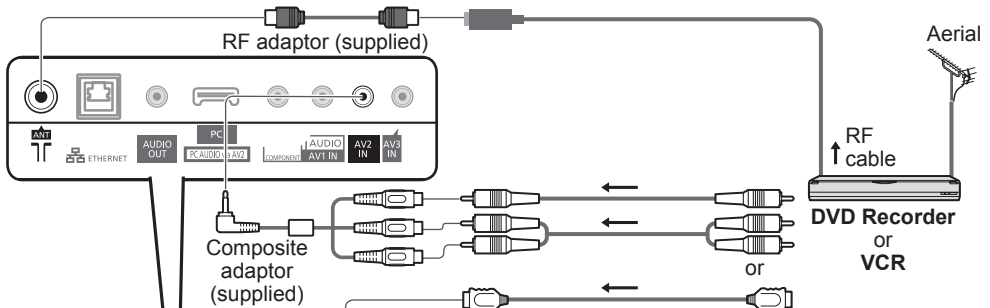
*1 : Only for DVD Recorder

HDMI equipment

HDMI 2 (ARC)

HDMI 3

HDMI 4

Fully wired HDMI compliant cable

Recorder / Player

● HDMI connection ➡ **(p. 68, 77)**

PC
PC AUDIO via AV2
COMPONENT
AUDIO AV1 IN
AV2 IN
AV3 IN

Audio adaptor (supplied)

To watch DVDs

(Listening)

DVD Player

COMPONENT adaptor (supplied)

(Viewing)

ANT
ETHERNET
AUDIO OUT
PC
PC AUDIO via AV2

Audio adaptor (supplied)

To listen with Home Theatre

RCA cable

*2

or

Optical digital audio adaptor (supplied)

Optical digital audio cable

Amplifier with speaker system

Rear of the TV

DIGITAL AUDIO OUT

HDMI 1
HDMI AV IN
ANALOG AUDIO via AV2

HDMI 2 (ARC)

or

Fully wired HDMI compliant cable
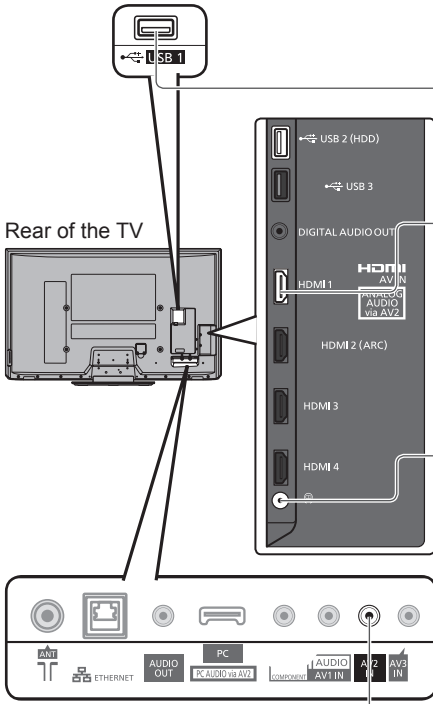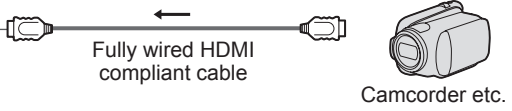
*2 : If the connected equipment has "HDAVI Control 5" function, you do not have to use this audio cable (Optical digital audio cable or RCA cable). In this case, connect the equipment to the TV's HDMI2 terminal via an HDMI cable.
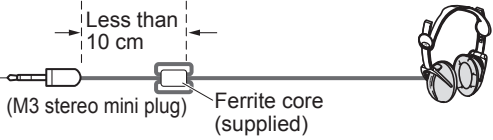
External Equipment

USB devices

USB 1

USB cable
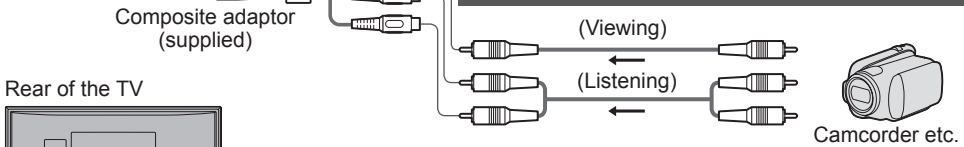
Rear of the TV

USB 2 (HDD)

USB 3

DIGITAL AUDIO OUT

HDMI 1

HDMI AV IN

ANALOG AUDIO via AV2

HDMI 2 (ARC)

HDMI 3

HDMI 4

Camcorder / HDMI equipment

Fully wired HDMI compliant cable

Camcorder etc.

Headphones

Less than 10 cm

(M3 stereo mini plug)

Ferrite core (supplied)

Installing the Ferrite core

① Pull back the tab

② Wind the cable twice

③ Press the cable through and close

- To adjust volume
  ➡ **[Headphone Volume] in the Sound Menu (p. 39)**

ANT
ETHERNET
AUDIO OUT
PC
PC AUDIO via AV2
COMPONENT
AUDIO AV1 IN
AV2
AV3 IN

Composite adaptor (supplied)

Rear of the TV

Camcorder / Game equipment

(Viewing)

(Listening)

Camcorder etc.

Network

Internet

Modem

Hub or Router

LAN cable

ANT
ETHERNET
AUDIO OUT
PC
PC AUDIO via AV2
COMPONENT
AUDIO AV1 IN
AV2
AV3 IN

PC

PC adaptor (supplied)

Composite adaptor (supplied)

(Listening)

(Viewing)

Conversion adaptor (if necessary)

Computer

External Equipment

75
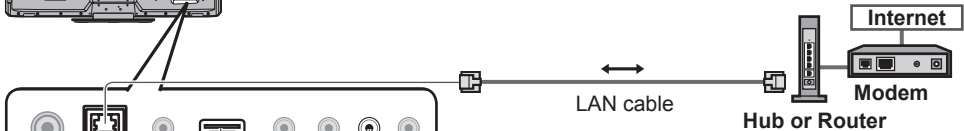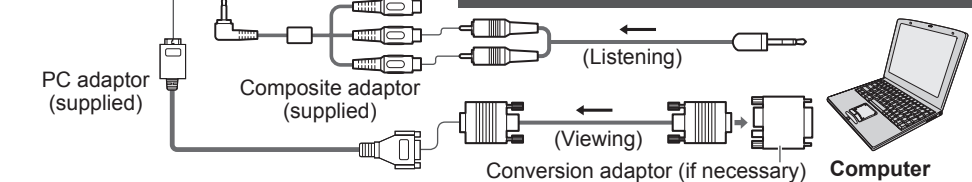
Technical Information

Channel Allocation

Channel Plan	Asia/ W.Europe	CIS/ E.Europe	China	Hong Kong	NZ/ Indonesia	Indian CATV	South Africa	American System	American CATV	Japan
CH DISPLAY	Receive channel									
0	–	–	–	–	–	–	–	–	–	–
1	–	1	1	–	–	1	1	–	1	1
2	2	2	2	–	2	2	2	2	2	2
3				–		3				
4				–		4				
5				–		S'1				
6				–		S'2				
7				–		S'3				
						S1				
11	11	11		–	11	S2	11			
12	12	12	12	–	–	S3	12			12
13	–	–	13	–	–	S4	13	13		13
14	–	–		–	–		–	14		
15	–	–		–	–		–			
16	–	–		–	–		–			
19	–	–		–	–	S10	–			
20	–	–		–	–	5	–			
21	21	21		21	21	6	21			
22										
23										
24						12				
28						S11				
57			57			S40				
58			–			S41				
59			–			21				
62	62	62	–	62	62	24	62	62	62	62
63	63	63	–	63	63	25	63	63	63	C13
69	69	69	–	69	69	31	69	69		
70	–	–	–	–	–	32	–	–		
73	–	–	–	–	–		–	–		
74	S'1	S'1	–	S'1	S'1		S'1	–		
75	S'2	–	–	S'2	S'2		S'2	–		
76	S'3	–	–	S'3	S'3		S'3	–		
77	–	–	–	–	–		–	–		
78	–	–	–	–	–		–	–		
79	–	–	–	–	–	41	–	–		
80	S1	S1	–	S1	S1	42	S1	–		
81	S2	S2	Z1	S2	S2		S2	–		
89	S10	S10	Z9	S10	S10	51	S10	–		
90	S11	S11	Z10	S11	S11	52	-	–		
91	S12	S12	Z11	S12	S12		-	–		
92	S13	S13	Z12	S13	S13		-	–		
93	S14	S14	Z13	S14	S14		S14	–		
94	S15	S15	Z14	S15	S15		S15	–		
95	S16	S16	Z15	S16	S16		S16	–		
96	S17	S17	Z16	S17	S17		S17	–		
97	S18	S18	Z17	S18	S18		S18	–		
98	S19	S19	Z18	S19	S19		S19	–		
99	S20	S20	Z19	S20	S20	61	S20	–	99	C49
100	S21	S21	Z20	S21	S21	62	S21	–	100	–
107						69		–		–
						70				
117			Z37			–		–		–
118			–			–		–		–
120	S41	S41	–	S41	S41	–	S41	–		–
125	–	–	–	–	–	–	–	–	125	–

HDMI connection

HDMI (high-definition multimedia interface) is the world's first complete digital consumer AV interface complying with a non-compression standard.
HDMI allows you to enjoy high-definition digital images and high-quality sound by connecting the TV and the equipment.
HDMI-compatible equipment*1 with an HDMI or DVI output terminal, such as a DVD player, a set top box or game equipment, can be connected to the HDMI terminal using an HDMI compliant (fully wired) cable.
About connections, see "External Equipment" (p. 73 - 75).

Applicable HDMI features
● Input audio signal: 2ch Linear PCM (sampling frequencies - 48 kHz, 44.1 kHz, 32 kHz)
● Input video signal: 480i, 480p, 576i, 576p, 720p, 1080i and 1080p
➡ **"Input signal that can be displayed" (p. 78)**
Match the output setting of the digital equipment.
● Input PC signal: ➡ **"Input signal that can be displayed" (p. 78)**
Match the output setting of the PC.
● VIERA Link (HDAVI Control 5): ➡ **[VIERA Link] (p. 68)**
● Audio Return Channel*2 (HDMI2 terminal only)

DVI connection
If the external equipment has only a DVI output, connect to the HDMI terminal via a DVI to HDMI adaptor cable*3. When the DVI to HDMI adaptor cable is used, connect the audio cable to AV2 audio terminal with the supplied Composite adaptor.

(**Note**)
● Audio settings can be made on the [HDMI1 / 2 / 3 / 4 Input] in the Sound Menu. (p. 39)
● If the connected equipment has an aspect adjustment function, set the aspect ratio to [16:9].
● These HDMI connectors are "type A".
● These HDMI connectors are compatible with HDCP (High-Bandwidth Digital Content Protection) copyright protection.
● Equipment having no digital output terminal may be connected to the input terminal of "COMPONENT" or "VIDEO" to receive analogue signals.
● This TV incorporates HDMI™ technology.
*1: The HDMI logo is displayed on HDMI-compliant equipment.
*2: Audio Return Channel (ARC) is a function to be able to send digital sound signals via an HDMI cable.
*3: Enquire at your local digital equipment retailer shop.

PC connection

A PC may be connected to this TV so that the PC screen is displayed and sound is heard from the TV.
● PC signals that can be inputted: Horizontal scanning frequency 31 to 69 kHz; vertical scanning frequency 59 to 86 Hz (more than 1,024 signal lines could result in incorrect display of the image).
● A PC adaptor is not necessary for the DOS/V-compliant D-sub 15-pin connector.

(**Note**)
● Some PC models cannot be connected to this TV.
● When using PC, set the colour display quality of PC to the highest position.
● For details of the applicable PC signals, see p. 78.
● Max. display resolution

Aspect	4:3	1,440 × 1,080 pixels
	16:9	1,920 × 1,080 pixels

● D-sub 15-pin connector signal

Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name
①	R	⑥	GND (Ground)	⑪	NC (not connected)
②	G	⑦	GND (Ground)	⑫	NC (not connected)
③	B	⑧	GND (Ground)	⑬	HD
④	NC (not connected)	⑨	NC (not connected)	⑭	VD
⑤	GND (Ground)	⑩	GND (Ground)	⑮	NC (not connected)

Input signal that can be displayed

COMPONENT (Y, P$_B$/C$_B$, P$_R$/C$_R$), HDMI

◯ Mark: Applicable input signal

Signal name	COMPONENT	HDMI
525 (480) / 60i	◯	◯
525 (480) / 60p	◯	◯
625 (576) / 50i	◯	◯
625 (576) / 50p	◯	◯
750 (720) / 60p	◯	◯
750 (720) / 50p	◯	◯
1,125 (1,080) / 60i	◯	◯
1,125 (1,080) / 50i	◯	◯
1,125 (1,080) / 60p		◯
1,125 (1,080) / 50p		◯
1,125 (1,080) / 24p		◯

PC (from D-sub 15P)
Applicable input signal for PC is basically compatible to VESA standard timing.

Signal name	Horizontal frequency (kHz)	Vertical frequency (Hz)
640 × 400 @70 Hz	31.47	70.07
640 × 480 @60 Hz	31.47	59.94
640 × 480 @75 Hz	37.50	75.00
800 × 600 @60 Hz	37.88	60.32
800 × 600 @75 Hz	46.88	75.00
800 × 600 @85 Hz	53.67	85.06
852 × 480 @60 Hz	31.44	59.89
1,024 × 768 @60 Hz	48.36	60.00
1,024 × 768 @70 Hz	56.48	70.07
1,024 × 768 @75 Hz	60.02	75.03
1,024 × 768 @85 Hz	68.68	85.00
1,280 × 1,024 @60 Hz	63.98	60.02
1,280 × 768 @60 Hz	47.70	60.00
1,366 × 768 @60 Hz	48.39	60.04
Macintosh13" (640 × 480)	35.00	66.67
Macintosh16" (832 × 624)	49.73	74.55
Macintosh21" (1,152 × 870)	68.68	75.06

PC (from HDMI terminal)
Applicable input signal for PC is basically compatible to HDMI standard timing.

Signal name	Horizontal frequency (kHz)	Vertical frequency (Hz)
640 × 480 @60 Hz	31.47	60.00
1,280 × 720 @60 Hz	45.00	60.00
1,920 × 1,080 @60 Hz	67.50	60.00

(**Note**)
● Signals other than above may not be displayed properly.
● The above signals are reformatted for optimal viewing on your display.
● PC signal is magnified or compressed for display, so that it may not be possible to show fine detail with sufficient clarity.

Technical Information

Stereo / Bilingual Sound Selection

When you receive the stereo / bilingual sound system, sound output modes can be selected by using the [MPX] in the Sound Menu.

Audio Signal	STEREO	MAIN I	SUB II	MONO
Mode Indicator	∞	I	II	▽

NICAM ....Used in New Zealand, Singapore, Hong Kong etc.

Type of broadcast	Regular broadcast (Standard Audio)	Regular + NICAM MONO I (MAIN I)	NICAM STEREO	NICAM DUAL MONO (MAIN I / SUB II)
Mode Indicator	No Indicator ⟷ ▽	I ⟷ ▽	∞ ⟷ ▽	I ⟶ II / ▽ ⟵

A2 (German) ....Used in Australia, Malaysia etc.

Type of broadcast	Regular broadcast (Standard Audio)	BILINGUAL or DUAL MONO: MAIN I / SUB II	STEREO
Mode Indicator	No Indicator ⟷ ▽	I ⟷ II	∞ ⟷ ▽

- If the stereo signal is poor or the receiving conditions are not optimum or if STEREO:MONO automatic switching occurs, it is recommended you switch from STEREO to MONO.
- Even when the contents of the receiving signal undergo changes, selection mode is kept intact.
- When the receiving conditions deteriorate, listening will be easier if the mode is set to the MONO position, using the Sound Selection button.
- DUAL, also known as DUAL MONO or as BILINGUAL is not currently transmitted in some countries.

SD Card

Card format: SDXC Card - exFAT
　　　　　　SDHC Card / SD Card - FAT16 or FAT32

Compliant card type (maximum capacity): SDXC Card (64 GB), SDHC Card (32 GB), SD Card (2 GB),
　　　　　　　　　　　　　　　　　　　　miniSD Card (2 GB) (requiring miniSD adaptor)

- If miniSD Card is used, insert / remove it together with the adaptor.
- Check the latest information on the card type at the following website.
  (English only)
  http://panasonic.jp/support/global/cs/tv/
- Use an SD Card which meets SD standards. If not, it may cause the TV
  to malfunction.
- Do not remove the card while the TV is accessing data (this can damage
  the card or TV).
- Do not touch the pins on the back of the card.
- Do not subject the card to high pressure or impact.
- Insert the card in the correct direction (otherwise, the card may be
  damaged).
- Electrical interference, static electricity, or erroneous operation may
  damage the data or card.
- Back up the recorded data at regular intervals in case of deteriorated or
  damaged data or erratic operation of the TV. (Panasonic is not liable for
  any deterioration or damage of recorded data.)

2.1 mm

32 mm

24 mm
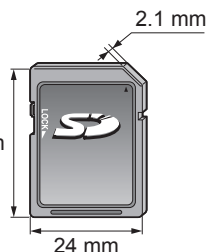
USB Flash Memory

Format: FAT16, FAT32 or exFAT

On screen messages

Message	Meaning / Action
Cannot read file	• The file is broken or unreadable. Check applicable data format. → **(p. 80 - 82)** • The TV does not support the format.
No Device Inserted	• Confirm SD Card or USB device is inserted correctly.
No valid file to play	• The card has no data.
This operation is not possible	• Your operation is not available.
An internal error occurred	• Check the settings. → **(p. 60 - 63)**
Communication with the server failed	• This might be a problem of the media server. Read the manual of the server software.
Server not found	• There is no available media server on your home network. Check the connections and settings. → **(p. 59 - 63)**

Supported file format in Media Player / DLNA

■ **Photo**

Format	File extension	Image resolution (pixel)	Details / Restrictions
JPEG	.jpg .mpo	8 × 8 to 30,719 × 17,279	DCF*1 and EXIF*2 standards Sub-sampling: 4:4:4, 4:2:2, 4:2:0 • Progressive JPEG is not supported.

*1 : Design rule for Camera File system - unified standard established by Japan Electronics and
　　Information Technology Industries Association (JEITA)
*2 : Exchangeable Image File - image file format used by digital cameras

■ **Video**

Container	File extension	Video codec	Audio codec	Details / Restrictions
SD-Video	.mod	MPEG1 MPEG2	MPEG Dolby Digital	SD-Video Standard Ver. 1.3 (Entertainment Video Profile) • The data may not be available if a folder structure on the current device is modified.
AVCHD	.mts	H.264	Dolby Digital	AVCHD Standard (including 3D videos recorded by the 3D-compatible Video Camera) • The data may not be available if a folder structure on the current device is modified.
AVI	.avi .divx	DIV3 DIV4 DIVX DX50 DIV6 XviD MPEG4 SP/ASP	MP3 Dolby Digital MPEG	DivX video file ➡ "DivX" (p. 82) DivX Certified® to play DivX® video up to HD 1080p, including premium content.
MKV	.mkv	H.264 BP/MP/HP	MP3 Dolby Digital MPEG AAC DTS core	–
ASF	.asf .wmv	Windows Media Video v9 VC-1	WMA	• Copy-protected files cannot be played back. • WMA Pro and WMA Lossless are not supported.
MP4	.mp4	H.264 BP/MP/HP	MP3 Dolby Digital AAC	–
MOV	.mov	Motion JPEG H.264 BP/MP/HP	RAW TWOS SOWT MP3 Dolby Digital LPCM AAC	• This TV supports Motion JPEG recorded by Panasonic LUMIX Camera. • Some files may not be played back depending on these recording condition. • Motion JPEG can be played back only in Media Player.
PS	.mpg .mpeg	MPEG1 MPEG2	MPEG MP3 Linear PCM	–
TS	.ts .tp	MPEG2 H.264	Dolby Digital Dolby Digital Plus HE-AAC AAC MP3	• This container can be played back only in DLNA feature.

■ **Music**

Codec	File extension	Restrictions
MP3	.mp3	–
AAC	.m4a	●Copy-protected files cannot be played back.
WMA	.wma	●Copy-protected files cannot be played back. ●WMA Pro and WMA Lossless are not supported.

⎯ **Note** ⎯
●The above table is generalised in nature. Due to file encoding variances, some media files that play on other devices, may not play on the TV even though they fulfill the generalised conditions.
●Do not use two-byte characters or other special codes for data.
●The card may become unusable with this TV if the file or folder names are changed.

DivX

DivX Certified® to play DivX® and DivX Plus™ HD (H.264/MKV) video up to 1080p HD including premium content.

ABOUT DIVX VIDEO:
DivX® is a digital video format created by DivX, Inc. This is an official DivX Certified® device that plays DivX video.
Visit www.divx.com for more information and software tools to convert your files into DivX video.

Subtitle text file of DivX
Subtitles format - MicroDVD, SubRip, TMPlayer
●The DivX video file and subtitles text file are inside the same folder, and the file names are the same except for the file extensions.
●If there are more than one subtitles text files inside the same folder, they are displayed in the following order of priority: ".srt", ".sub", ".txt".
●To confirm or change the current subtitle status while playing DivX content, press the OPTION button to display Option Menu.
●Depending on the methods used to create the file or the state of recording, only parts of the subtitles may be displayed, or the subtitles may not be displayed at all.
●Some subtitles text may not be displayed correctly.

⎯ **Note** ⎯
●Depending on how you make SD Card or USB Flash Memory, files and folders may not be displayed in the order you numbered.
●Depending on how you create the files and the structure of folders, the files and folders may not be displayed.
●When there are many files and folders, operation may take time to complete or some files may not be displayed or playable.

ABOUT DIVX VIDEO-ON-DEMAND:
This DivX Certified® device must be registered in order to play purchased DivX Video-on-Demand (VOD) movies. To obtain your registration code, locate the DivX VOD section in your device setup menu. Go to vod.divx.com for more information on how to complete your registration.

To show DivX VOD registration code
➡ [DivX® VOD] in the Setup Menu (p. 42)
●If you want to generate the new registration code, you have to deregister the present registration code. After playing DivX VOD content once, the confirmation screen to deregister will be displayed in [DivX® VOD] in the Setup Menu. If you press the OK button on the confirmation screen, the deregistration code will be generated and you will not be able to play any contents that you purchased using the present registration code.
You will obtain the new registration code by pressing the OK button on the deregistration code screen.
●If you purchase DivX VOD content using a registration code different from this TV's code, you will not be able to play this content. ([Your device is not authorized to play this DivX protected video.] is displayed.)

Regarding DivX content that can only be played a set number of times

Some DivX VOD content can only be played a set number of times.
When you play this content, the remaining number of plays is displayed. You cannot play this content when the number of remaining plays is zero. ([This DivX rental has expired.] is displayed.)
● When playing this content, the number of remaining plays is reduced by one in the following conditions:
  • If you exit the current application.
  • If you play the other content.
  • If you go to the next or previous content.

VIERA Connect

On screen messages

Message	Meaning / Action
Connection to the server failed.	● Check the connections and settings. ➡ **(p. 59 - 63)**
The software update is not completed.	● Network download failed. Check the connections and settings. ➡ **(p. 59 - 63)**

USB connection

● It is recommended to connect the USB Flash Memory directly to the TV's USB ports.
● Some USB devices or USB HUB may not be used with this TV.
● You cannot connect any devices by using USB card reader.
● You cannot use two or more same kind of USB devices simultaneously except USB Flash Memory.

(Note)
● Additional information for USB devices may be on the following web site. (English only)
  http://panasonic.jp/support/global/cs/tv/

USB Keyboard

● The USB Keyboard which requires the driver is not supported.
● Characters may not be displayed correctly on the TV screen depending on the connected keyboard or the keyboard layout setting.
● Some of the keys of USB keyboards correspond to the operation of the remote control.

USB Keyboard	Remote Control	USB Keyboard	Remote Control
↑ / ↓ / ← / →	Cursor buttons	F2	VIERA TOOLS
Enter	OK	F3	MENU
Backspace	RETURN	F4	INPUT (AV)
Esc	EXIT	F5 / F6	Channel Down / Up
0 - 9 / Character	Numeric buttons	F7 / F8	Volume Down / Up
F1	-	F9 / F10 / F11 / F12	Coloured buttons

Gamepad

● Check the gamepads that have been tested for the performance with this TV at the following website. (English only)
  http://panasonic.jp/support/global/cs/tv/
● Some of the keys of gamepads correspond to the operation of the remote control.

Example:
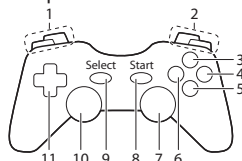
	Remote Control		Remote Control
1	Volume Up / Down	**7**	VIERA TOOLS
2	Channel Up / Down	**8**	EXIT
3	-	**9**	INPUT (AV)
4	OK		
5	RETURN	**10**	MENU
6	VIERA Connect	**11**	Cursor buttons

FAQs

Before requesting service or assistance, please follow these simple guides to resolve the problem.
If the problem still persists, please contact your local Panasonic dealer for assistance.

White spots or shadow images (noise)
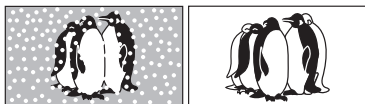
- Check the position, direction, and connection of the aerial.

Neither image nor sound is produced
- Is the TV in "AV mode"?
- Is the mains lead plugged into the socket outlet?
- Is the TV turned On?
- Check the Picture Menu (p. 35 - 38) and volume.
- Check all required cables and connections are firmly in place.

An error message appears
- Follow the message's instructions.
- If the problem persists, contact your local Panasonic dealer.

"VIERA Link" function does not work and an error message appears
- Confirm the connection. (p. 68)
- Turn the connected equipment on and then switch the TV On. (p. 69)

Permanently lit spots on screen
- Due to production process involved in this technology this may result in some pixels which are permanently lit or unlit. This is not a malfunction.

Contrast is reduced
- Contrast is lowered in the following conditions without any user operation for a few minutes:
  - no signal in AV mode
  - selected locked channel
  - selected invalid channel
  - displayed menu
  - thumbnail or still picture

	Problem	Actions
Screen	**Chaotic image, noisy**	• Change the setting of [P-NR] in the Picture Menu (to remove noise). ➡ **(p. 36)** • Check nearby electrical products (car, motorcycle, fluorescent lamp).
	No image can be displayed	• Is [Colour] or [Contrast] in the Picture Menu set to the minimum? ➡ **(p. 35)**
	Blurry or distorted image (no sound or low volume)	• Reset channels ➡ **(p. 44)**
	Unusual image is displayed	• Turn the TV Off with Mains power On / Off switch, then turn it On again.
Sound	**No sound is produced**	• Is "Sound Mute" active? ➡ **(p. 12)** • Is the volume set to the minimum?
	Sound level is low or sound is distorted	• Sound signal reception may be deteriorated. • Set [MPX] in the Sound Menu to [Mono] ➡ **(p. 39)**
	Unusual sound from the TV	• When power is on, whirring sound of cooling fan or drive noise may be heard from inside the TV (not a sign of faulty operation).

	Problem	Actions
HDMI	**Sound is unusual**	• Set the sound setting of the connected equipment to "2ch L.PCM". • Check the [HDMI1 / 2 / 3 / 4 Input] setting in the Sound Menu. ⇒ **(p. 39)** • If digital sound connection has a problem, select analogue sound connection. ⇒ **(p. 77)**
	Pictures from external equipment are unusual when the equipment is connected via HDMI	• Check the HDMI cable is connected properly. ⇒ **(p. 68, 74 - 75)** • Turn the TV and equipment Off, then turn them On again. • Check an input signal from the equipment. ⇒ **(p. 78)** • Use equipment compliant with EIA/CEA-861/861D.
Network	**Cannot connect to the network**	• Check the LAN cable or Wireless LAN Adaptor is connected properly. ⇒ **(p. 59)** • Check the connections and settings. ⇒ **(p. 59 - 63)** • Check the network equipment and network environment. • If the problem persists, consult your Internet Service Provider or telecommunications company.
	Cannot select the file during DLNA operations	• Is the media server prepared? ⇒ **(p. 58)** • Check applicable data format. ⇒ **(p. 80 - 82)**
	Cannot operate VIERA Connect	• Check the connections and settings. ⇒ **(p. 59 - 63)** • The server or connected line might be busy now.
3D	**Cannot see 3D images**	• Has the 3D Eyewear been switched On? • Ensure that [3D Mode Selection] is set to [3D]. ⇒ **(p. 30)** • Some 3D image signals may not be automatically recognised as 3D images. Set [3D Mode Selection (Manual)] to match the picture format. ⇒ **(p. 30)** • Check that there are no obstacles between the infrared sensors on the TV and the 3D Eyewear. If the 3D Eyewear stops receiving the infrared signal for about 5 minutes, the 3D Eyewear will be turned off automatically. • Check the available area to use the 3D Eyewear. ⇒ **(p. 29)** • Depending on the person, the 3D images may be difficult to see, or cannot be seen, especially in users that have a different level of eyesight between the left and right eyes. Take the necessary steps (wearing glasses etc.) to correct your eyesight before use.
	3D Eyewear is turned off automatically	• Check that there are no obstacles between the infrared sensors on the TV and the 3D Eyewear or that the 3D Eyewear is placed inside the coverage area (p. 29). If the 3D Eyewear stops receiving the infrared signal for about 5 minutes, the 3D Eyewear will be turned off automatically.
	There is something wrong with the 3D images	• Check the setting of [Picture Sequence] or [Edge Smoother]. ⇒ **(p. 31)**
	The indicator lamp does not light when pressing the power button on the 3D Eyewear	• The battery may be running low or flat. Charge it.

Frequently Asked Questions

Problem	Actions
The TV goes into Standby mode	● Auto power standby function is activated. ● The TV enters Standby mode about 30 minutes after broadcasting ends.
The remote control does not work or is intermittent	● Are the batteries installed correctly? ➡ **(p. 6)** ● Has the TV been switched On? ● Point the remote control directly at the front of the TV (within about 7 m and a 30 degree angle of the front of the TV). ● Situate the TV away from sunshine or other sources of bright light not to shine on the TV's remote control signal receiver.
Parts of the TV become hot	● Even when the temperature of parts of the front, top and rear panels has risen, these temperature rises will not pose any problems in terms of performance or quality.

Maintenance

First, remove the mains plug from the socket outlet.

Display panel, Cabinet, Pedestal

For regular care:
Gently wipe the surface of the display panel, cabinet, or pedestal by using a soft cloth to clean the dirt or fingerprints.

For stubborn dirt:
Dampen a soft cloth with clean water or diluted neutral detergent (1 part detergent to 100 parts water). Then wring the cloth and wipe the surface. Finally, wipe away all the moisture.

Caution

● Do not use a hard cloth or rub the surface too hard. This may cause scratches on the surface.
● Take care not to subject the TV's surfaces to water or detergent. Liquid inside the TV could lead to product failure.
● Take care not to subject the surfaces to insect repellent, solvent, thinner, or other volatile substances. This may degrade surface quality or cause peeling of the paint.
● The surface of the display panel is specially treated and may be easily damaged. Take care not to tap or scratch the surface with your fingernail or other hard objects.
● Do not allow the cabinet and pedestal to make contact with a rubber or PVC substance for a long time. This may degrade surface quality.

Mains plug

Wipe the mains plug with a dry cloth at regular intervals. Moisture and dust may lead to fire or electrical shock.

Specifications

TV	TH-P65VT30D TH-P65VT30K TH-P65VT30M TH-P65VT30T	TH-P65VT30P
Power Source	AC 220 - 240 V, 50 / 60 Hz	AC 110 - 240 V, 50 / 60 Hz
Power Consumption — **Power Rating**	500 W	515 W
Power Consumption — **Standby condition**	0.4 W	0.4 W
Display panel — **Aspect Ratio**	16:9	
Display panel — **Visible screen size**	165 cm (diagonal) 1,434 mm (W) × 806 mm (H)	
Display panel — **Number of pixels**	2,073,600 (1,920 (W) × 1,080 (H)) [5,760 × 1,080 dots]	
Sound — **Speaker**	Front speaker (180 mm × 25 mm) × 2, Woofer (Φ 80 mm) × 1	
Sound — **Audio Output**	22 W (6 W + 6 W + 10 W)	
Sound — **Headphones**	M3 (3.5 mm) stereo mini Jack × 1	
PC signals	VGA, SVGA, WVGA, XGA SXGA, WXGA ⋯⋯ (compressed) Horizontal scanning frequency 31 - 69 kHz Vertical scanning frequency 59 - 86 Hz	

Receiving Systems / Band name

17 Systems	Function	17 Systems	Function
1 PAL B, G, H	Reception of broadcast transmissions and Playback from Video Cassette Tape Recorders	8 NTSC 4.43/5.5 MHz	Playback from Special VCR's or DVD
2 PAL I		9 NTSC 4.43/6.0 MHz	
3 PAL D, K		10 NTSC 4.43/6.5 MHz	
4 SECAM B, G		11 NTSC 3.58/5.5 MHz	
5 SECAM D, K		12 NTSC 3.58/6.0 MHz	
6 SECAM K1		13 NTSC 3.58/6.5 MHz	
7 NTSC M (NTSC 3.58/4.5 MHz)		14 SECAM I	
		15 PAL 60 Hz/5.5 MHz	Playback from Special Disc Players and Special VCR's or DVD
		16 PAL 60 Hz/6.0 MHz	
		17 PAL 60 Hz/6.5 MHz	

Receiving Channels (Analogue TV)

VHF BAND	UHF BAND	CATV
2-12 (PAL/SECAM B, K1) 0-12 (PAL B AUST.) 1-9 (PAL B N.Z.) 1-12 (PAL/SECAM D) 1-12 (NTSC M Japan) 2-13 (NTSC M USA)	21-69 (PAL G, H, I/SECAM G, K, K1) 28-69 (PAL B AUST.) 13-57 (PAL D, K) 13-62 (NTSC M Japan) 14-69 (NTSC M USA)	S1-S20 (OSCAR) 1-125 (USA CATV) C13-C49 (JAPAN) S21-S41 (HYPER) Z1-Z37 (CHINA) 5A, 9A (AUST.)

Aerial - Rear	VHF / UHF
Operating Conditions	**Temperature** : 0 °C - 40 °C **Humidity** : 20 % - 80 % RH (non-condensing)

Connection Terminals

AV1 Input	**AUDIO L - R**	RCA PIN Type × 2	0.5 V[rms]
	COMPONENT	Y P$_B$/C$_B$, P$_R$/C$_R$	1.0 V[p-p] (including synchronisation) ±0.35 V[p-p]
AV2 Input	**AUDIO L - R**	RCA PIN Type × 2	0.5 V[rms]
	VIDEO	RCA PIN Type × 1	1.0 V[p-p] (75 Ω)
AV3 Input	**AUDIO L - R**	RCA PIN Type × 2	0.5 V[rms]
	VIDEO	RCA PIN Type × 1	1.0 V[p-p] (75 Ω)
Audio Output	**AUDIO L - R**	RCA PIN Type × 2	0.5 V[rms] (high impedance)
Others	**HDMI1 - 4 Input**	TYPE A Connectors	● This TV supports "HDAVI Control 5" function.
	PC Input	HIGH-DENSITY D-SUB 15PIN	R / G / B: 0.7 V[p-p] (75 Ω) HD / VD: TTL Level 2.0 - 5.0 V[p-p] (high impedance)
	DIGITAL AUDIO OUT	PCM / Dolby Digital / DTS, Fiber optic	
	Card slot	SD Card slot × 1	
	USB 1/2/3	USB 2.0 TYPE A Connectors	DC 5 V, Max. 500 mA
	ETHERNET	10BASE-T / 100BASE-TX	

Dimensions (W × H × D)	1,570 mm × 994 mm × 400 mm (With Pedestal) 1,570 mm × 956 mm × 60 mm (TV only)
Mass	63.0 kg Net (With Pedestal) 56.0 kg Net (TV only)

Specifications

3D Eyewear

Lens type	Liquid Crystal Shutter
Usage temperature range	0 °C - 40 °C
Charging power supply	DC 5 V (supplied by USB terminal of a Panasonic TV)
Battery	Lithium-ion polymer rechargeable battery DC 3.7 V, 70 mAh Operation time*[1]: Approx. 30 hours Charging time*[1]: Approx. 2 hours
Viewing range*[2]	Transmitter for 3D Eyewear Within 3.2 m from front surface (Within ± 35° horizontal, ± 20° vertical)
Materials	Main body: Resin Lens section: Liquid crystal glass
Dimensions (not including nose pad part)	Width	170.1 mm
	Height	41.2 mm
	Overall length	169.8 mm
Mass	38 g Net

*[1] Operation time/charging time
● The battery deteriorates after repeated use, and the operation time eventually becomes short. The figures above are at shipping from the factory, and are not a guarantee of performance.
*[2] Viewing range
● The location of the 3D Eyewear transmitter differs depending on the model of television.
● There are differences in the viewing range of the 3D Eyewear among individuals.
● The 3D Eyewear may not operate correctly at the outside of the viewing range.

Wireless LAN Adaptor (TH-P65VT30D, TH-P65VT30K, TH-P65VT30T)

Power supply	DC 5V (USB powered) 500mA
Antenna	Tx 1, Rx 2
Interface	USB 2.0
Standard Compliance	IEEE802.11n / IEEE802.11a / IEEE802.11g / IEEE802.11b
Transmission system	MISO-OFDM system, OFDM system, DSSS system
Frequency Range*[1]*[2]	IEEE802.11n / IEEE802.11a: 5.150 GHz - 5.850 GHz IEEE802.11g / IEEE802.11b / IEEE802.11n: 2.400 GHz - 2.4835 GHz
Transfer rate (standard)*[3]	IEEE802.11n: Tx Max. 150Mbps, Rx Max. 300Mbps IEEE802.11g / IEEE802.11a: Max. 54Mbps IEEE802.11b: Max. 11Mbps
Access Mode	Infrastructure mode
Security	WPA2-PSK (TKIP/AES) / WPA-PSK (TKIP/AES) / WEP (64bit/128bit)
Dimensions (W × H × D)	30.00 mm × 10.72 mm × 94.85 mm
Mass	25 g Net

*[1] The frequency and channel differ depending on the country.
*[2] 802.11b/g/n CH1 - CH11 only use for North America, Canada, and Taiwan.
*[3] Transfer rates are theoretical values; however, actual communication rate will vary according to communication environment or connected equipment.

(Note)
● Design and Specifications are subject to change without notice. Mass and Dimensions shown are approximate.

Customer's Record

The model number and serial number of this product may be found on its rear panel. You should note the model number and the serial number in the space provided below and retain this book, plus your purchase receipt, as a permanent record of your purchase to aid in identification in the event of theft or loss, and for Warranty Service purposes.

Model Number	Serial Number

Panasonic Corporation