

English



Table of Contents

This operator's manual supports you during the installation and operation of the plasma display. Detailed descriptions and drawings as well as the user-friendly user guidance per on-screen display facilitate installation and operation even for inexperienced users. The contents of this manual can change without prior notification on account of further technical developments. Ensure that you always utilise the newest version of this operator's manual.

Chapter	Description	Pages
	Standards	5
	Important Notes On Safety	6
1	Product Introduction	8
2	Installation And Start-up	10
2.1	Checking The Scope Of Delivery	10
2.2	Packing/Unpacking	10
2.3	For Your Information And Safety	11
2.4	Reference For Wall Mounting	12
2.5	Reference For Table Mounting	13
2.6	Installation Of Connecting Line	15
2.7	Start-up	15
2.7.1	Connection Of Signal Sources	15
2.7.2	Connection Of Sound	15
2.7.3	Remote Control	16
2.7.4	Connection Of Mains Cable	17
2.7.5	Turning On The Plasma Display	18
3	Interconnection Options	18
3.1	Appliance Coupler Summary	18
3.2	Connection To Compatible PCs	19
3.3	Operating Modes	21
4	Remote Control	22
4.1	Direct Functions	22
4.2	Everyday Settings	25
4.2.1	On-Screen Display (OSD)	25
5.0	Format Adjustments	39
5.1	Video Signal Source	39
6	Error Analysis And Possible Recovery	40
6.1	Repairs	41
6.2	Cleaning The Display And Housing	42
6.3	Declaration Of Return	42
7	Technical Specifications	43
7.1	Product Attributes	43
7.2	Display	44
7.3	Resolution	44

Chapter	Description	Pages
7.4	Colour Display	44
7.5	Operation	44
7.6	PC Frequency Range	44
7.7	Video/Synchronisation	44
7.8	Video/Standards	44
7.9	Video/PC Inputs	44
7.10	Audio	44
7.11	Operating Conditions	44
7.12	Conformities	45
7.13	Dimensions & Weight	45
7.14	IR Remote Control	45
7.15	Loudspeaker (optionally)	45

Important: The supplier constantly strives to improve the quality of product documentation. As our customer, you can contribute to this. We ask that you inform us about vague descriptions, drawings or ambiguous terms. We look forward to your suggestions, which improve the utilisation of this operator's manual.

Standards

The plasma display at hand is an information technology device.

The plasma display complies with the following guidelines and standards:

- 89/336/CEE from 3 May 1989 with subsequent modifications (Directive 92/31/CEE from April 1992 and Directive 93/68/CEE from 22 July 1993)
- 73/23/CEE from 19 February 1973 with subsequent modifications (Directive 93/68/CEE from 22 July 1993)
- EN55022, EN55024, EN61000-2-2/-3 (Electromagnetic Compatibility)
- EN60950 (Safety Requirements)

The conformity with the requirements is characterised by the CE symbol attached to the product.

REFERENCE:

This is a Class A device. This device can cause radio disturbances in the living area; in this case the operator can be required to implement appropriate measures.

Suitable measures could be:

- In the event of disturbances, connect the device with a different socket
- Align the antenna of a disturbed radio receiver differently
- Increase the distance between the disturbed device and this product

The manufacturer cannot be held liable for operation beyond the operating conditions as described in the manual. In addition, your product liability and warranty claims expire as a result of such action.



WARNING

Important notes on safety!

6

Read and heed the notes on safety so that no hazard to your health arises during contractual use. Errors during installation and connection can damage the device or subsequently related devices.

Always keep the operating instructions within reach. Heed the warnings on the device and in the operating instructions.

- **General reference**

Before you connect the plasma display, please carefully read through the general notes on safety and the operating instructions. Only in this manner can you utilise all functions safely and reliably.

As far as possible, keep the operating instructions together with the device so that you can use it to look up information.

Heed the warnings on the device and in the operating instructions.

Never allow children to utilise electrical devices without supervision.

- **Environmental conditions**

Never operate the plasma display under environmental conditions which differ from those of the technical data. Divergent conditions can lead to endangerment, fire or breakdown of the device.

Protect the plasma display against moisture. This pertains to permanent high humidity, the proximity to water, water drops and water splashes as well as rain. Do not place any water-filled containers (e.g. vases) on the device.

Protect the device against heat. Avoid the proximity to fire, heating devices, ovens or permanent exposure to direct sunlight.

Protect the display against heat accumulation. Do not cover the ventilation slots. Maintain a distance of at least 10 cm above and below the ventilation slots as well as laterally to furniture and to the ceiling. Do not furnish the device with curtains.

The display is designed for mounting in vertical position on walls or installations.

- **Mains connection**

The mains input and the mains switch are located on the rear side. The mains input is located on the upper right and the mains switch is placed in the

upper middle. For safe disconnection of the display from the mains voltage, the mains switch is to be turned off and the mains cable is to be removed from the mains input module.

Connect the plasma display only to a socket with earthing contacts installed according to regulations, and whose main voltage conforms with the device's technical data. See to it that the mains plug and the socket are accessible at all times. Install the mains cable in such a fashion that nobody can get caught in it. Use only the supplied mains cable. Protect it against damages, and do not make any alterations to it. Never use a damaged mains cable.

- **Signal inputs**

Always turn the plasma display and the signal source off before you establish a connection between both devices.

- **Disturbances**

In the event of damages to the mains cable or the device, immediately pull the mains plug from the socket.

Under no circumstances should you attempt to open and/or to repair the device yourself. Instead, contact our Service Hotline or another suitable professional workshop.

- **Batteries**

Batteries can be life-threatening when swallowed. That's why you should safeguard batteries from the reach of small children. Immediate medical assistance should be utilised if a battery has been swallowed.

Always take the exhausted batteries out of the remote control immediately, since these leak and can cause damage as a result.

The enclosed batteries may not be charged or reactivated by other means, not taken apart, thrown in fire or short-circuited.

Important notes on safety!

Exhausted batteries do not belong in household waste. The batteries must be disposed of at the collection points provided for this purpose.

- **Cleaning and maintenance**

Before cleaning, turn the device off, and pull the mains plug from the socket. Wait a few minutes so that the capacitors in the device can be completely discharged.

Use only a slightly dampened, soft cloth for cleaning. You should avoid chemical solvents and cleaning agents, because these can damage the surfaces.

- The plasma display generates high voltage internally for the gas discharge. Turn the device off and pull the mains plug from the socket during installation, maintenance and repairs. Wait a few minutes so that the capacitors in the device can be completely discharged.
- In case foreign elements such as water, liquids, metal parts, etc. get into the plasma display, pull the mains plug out immediately. Never attempt to touch anything inside the device with any kind of objects. The danger of an electric shock or accident exists.
- Pull out the mains plug immediately if smoke, unpleasant odour or unusual noises are emitted from the device. Also proceed in the same manner if the display is no longer able to present an image after being turned on or during operation. Never attempt to continue operating the display in this condition.
- In the event of lengthy absence or during thunderstorms, pull the mains plug from the socket, and pull the house antenna socket from the antenna jack.
- Never plug-in or pull-out the mains plug with wet hands. Never operate the mains switch with wet hands.
- Utilise only the supplied mains cable. Protect it against damages, and do not make any alterations to it. Never use a damaged mains cable.
- The plasma display has a glass surface. Should the device be subjected to excessive loading (e.g. through shock, vibration, bending and heat shock), the glass surface can break. Do not subject the glass surface to any pressure or shock. Should the glass be broken, immediately pull the mains plug and do not touch the broken glass with bare hands.
- When the plasma display has been switched to the stand-by mode it is still connected to the mains. You must switch the mains switch into the 0 position or pull the mains plug from the socket for complete disconnection.
- For ergonomic reasons it is recommended to avoid using red and blue fonts or symbols on dark backgrounds. Such a display causes poor readability due to the lower contrast, and prematurely fatigues the eyes. Therefore, please use high-contrast displays as much as possible, e.g. black font on a white background.
- During the connection of external loudspeakers, pay attention to the loudspeaker output technical data. In the event of insufficient dimensioning of the loudspeaker, the loudspeaker and/or the built-in amplifier can be damaged.
- Packaging and packing resources which are no longer needed are able to be recycled, and should always be turned in for recycling.

1 Product Introduction

8

State of the art signal processing, a flat 16:9 plasma display with 106 cm screen diagonal, and an attractive housing which features lesser modular depth in combination with a user-friendly, interactive remote control present a new generation of information presentation.

The utilisation of the newest plasma display generation guarantees high-contrast, brilliant video images as well as computer displays and presentations. A variety of interconnection options facilitate integration into existing and new systems of visualisation.

- **Display: flat - large - slim**
The new plasma display offers 852 x 480 pixel resolution on a screen surface of 920mm x 512mm. 16.77 million colours with 256 RGB gradations (8 bit resolution) offer unlimited colour display and true-to-detail image playback. Enjoy video and data images on a 106 cm screen diagonal, and be impressed by the slight depth of only 129 mm.
- **Quiet**
A new type of cooling system enables the operation of the plasma display without disturbing fan noises. Quiet like a conventional television, the plasma display provides the new standard for the living room and for the conference room.
A remaining audio noise level of approx. 25 dB A in consequence of plasma technology corresponds to the current state of the art.
- **Everything in one housing**
Display, power supply and image & sound signal processing are accommodated in one housing. This facilitates mounting on the wall. Hanging on a wall like a painting, all signal inputs and outputs are easily accessible. Both of the loudspeaker jacks offer well-balanced listening pleasure in connection with external loudspeakers.
- **Video / Computer VGA / Audio**
The broad connection capability provides the PAL/NTSC/SECAM video standards (CSCC, RGB and SVHS), multistandard TV tuner (which offers up to 99 TV channels with automatic and manual programming), VGA/SVGA, and even includes a 16:9 VGA format with 848 x 480 pixel resolution.
- **User interface**
IR remote control and On-Screen-Display (OSD) make operation a matter of child's play. The OSD offers clearly structured menus for the selection of signal sources, image and sound.
- **Digital signal processing**
The plasma display is equipped with the latest standard of digital signal processing in 8-bit technology. It offers – to name just a few things – characteristics such as efficient algorithms in order to present 4:3 video and data images in high quality while filling the screen on a 16:9 display.
- **Images: High-contrast and distortion-free under all circumstances**
In order to maintain the high contrast ratio and the outstanding readability even under critical lighting conditions, the new front glass pane is provided with fine etching on the front side.
- **Installation: Simple and fast**
Various attachment devices are provided to you for installation – no matter whether the display is attached to the wall, or even installed on the floor or a table.
- **Advantages of digital technique**
Digital graphics cards offer superior imaging performances. With the digital DVI connection the plasma display offers convincing performances, and remains downwardly compatible to existing analogue graphics cards.
- **Digital noise suppression**
You can activate motion-adaptive noise suppression per OSD, and align the quality of the image material accordingly. The automatic reduction of noise suppression ensures artefact-free reproduction of rapidly moving image components.
- **Exact and constant colour rendition**
The superior, finely-nuanced colour rendition is supplemented by the possibility of gamma adjustment. You can make the optimal gamma, colour temperature, contrast and brightness adjustment for every input per OSD.

PC FORMATS	DOS Modes 640 x 400 and 720 x 400 VGA (640 x 480) @ 50Hz – 85Hz repetition rate SVGA (800 x 600) @ 50Hz – 85Hz repetition rate WVGA (848 x 480) @ 50Hz – 85Hz repetition rate XGA (1024 x 768) @ 50Hz – 85Hz repetition rate
IMAGE FORMATS	4:3, 16:9, zoom, user zoom, screen-filling, automatic non-linear
INPUTS/VIDEO	Mini DIN Y/C / Hi 8 (PAL, SECAM, NTSC) Cinch CVBS Video In (PAL, SECAM, NTSC) SCART 1 Y/C, CVBS, RGB (PAL, SECAM, NTSC), CVBS output SCART 2 Y/C, CVBS (PAL, SECAM, NTSC), CVBS output RF Tuner VHF/UHF/HYPERBAND for terrestrial antennas or cable networks (47MHz to 861MHz) (PAL/SECAM)
PC	DVI (I) VGA/SVGA/WVGA/XGA Analogue and digital (DVI)
AUDIO INPUTS	Y/C (S-Video) CVBS SCART 1 SCART 2 PC
OUTPUTS	Audio Line Out . . adjustable loudspeaker 2 x 7W sine @ 4 Ω
CONTROL	On-Screen Display Menu 4 languages (D, E, F, I) IR remote control CMM3
VIDEOTEXT	TOP FLOF 256 pages of memory control with special keys on the remote control
VOLTAGE	220V – 240V AC alternating voltage 50Hz/60Hz
CURRENT	1,8A

2 Installation and Start-up

2.1 Checking the Scope of Delivery

10

Your plasma display has been tested with great care and packed before delivery. It is available for use immediately after unpacking. After unpacking the display, please check for possible transport damages and completeness of delivery. In the event of transport damages, the supplier can only allow your claims if you inform them about this before the initial start-

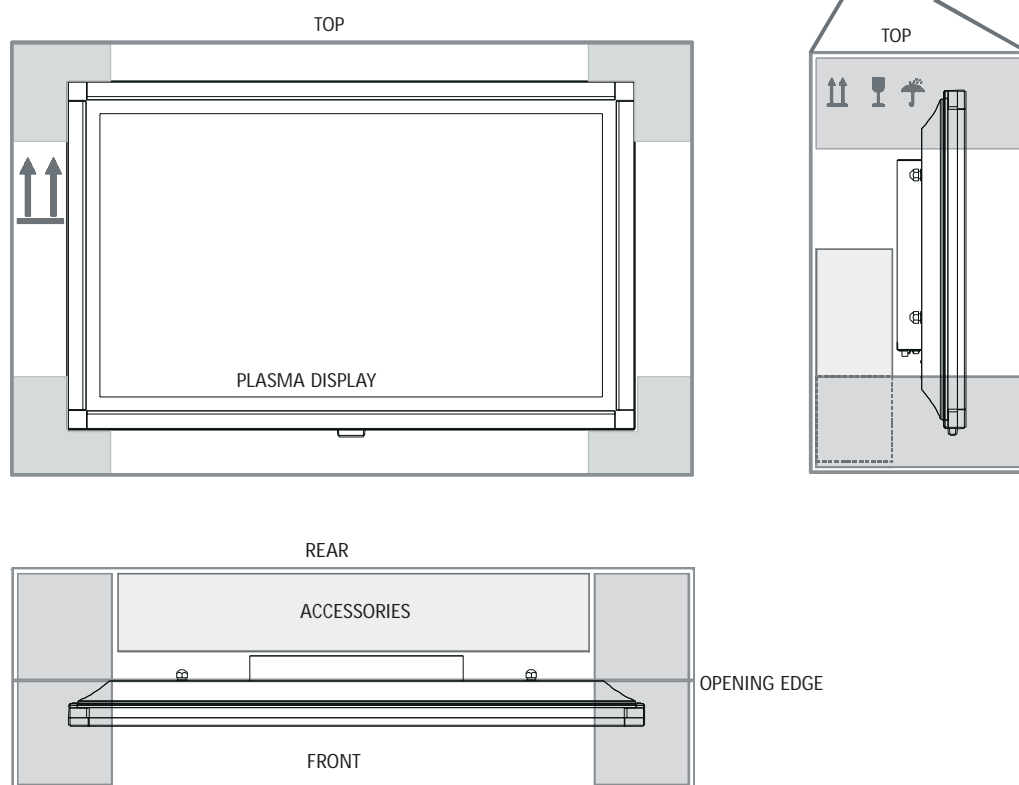
up. If a part of the scope of delivery is missing, please contact the Service Hotline. The missing component will be sent to you immediately without charge. Please always keep this operator's manual in the vicinity of the installation site so that it is available at your side for support at all times.

Scope of delivery:

1. Plasma Display
2. Loudspeaker (optionally)
3. Wall mounting device
4. Table base
5. Mounting material (4 x screws M8, 1 x Allen wrench size 5)
6. Remote control
7. 2 x LR03 batteries
8. Mains cable 2.5 m
9. HD-Sub on DVI-I video cable 2.0 m
10. Operator's manual
11. Warranty card
12. Drilling template

2.2 Packing/Unpacking

Packing dimensions H x W x D: approx. 760 x 1160 x 370 mm



- Place the carton upright with the underside on firm ground. You will recognise the top side by the direction of the arrowheads on the longitudinal side.
- Open the packaging tape on the opening edge, and fold back both lids outwardly.
- Remove both of the packing elements which are lying on the top, as well as the packing element which is located on the back side of the device.
- Now remove the carton, along with the accessory parts which are located on the back side, from the packaging.
- Remove the wall bracket from the back side of the device. For this purpose, please slightly tilt the display forward at first, and pull out the Styrofoam block which is situated between the back side of the device and the wall bracket. After that you can pull out (upwardly) the wall bracket from the packaging.
- Depending on your choice, you can either mount the wall bracket on the mounting site, or place the standing pedestal on a secure base surface.
- After mounting the wall bracket or the table base, remove the protective foil on the upper side of the display so that you can remove the display from the packaging.
- Always remove the display from the packaging only with two people. Trying to remove the display by yourself is hazardous to your health.
- Hang the removed display either in the wall mounting bracket unit or place the display on the standing base.
- Please pay attention that you do not place the display on its underside, because the infrared sensor is located there.

2.3 For Your Information and Safety

2.3.1 Installation references

Select the installation site according to the following criteria:

1. Line of vision

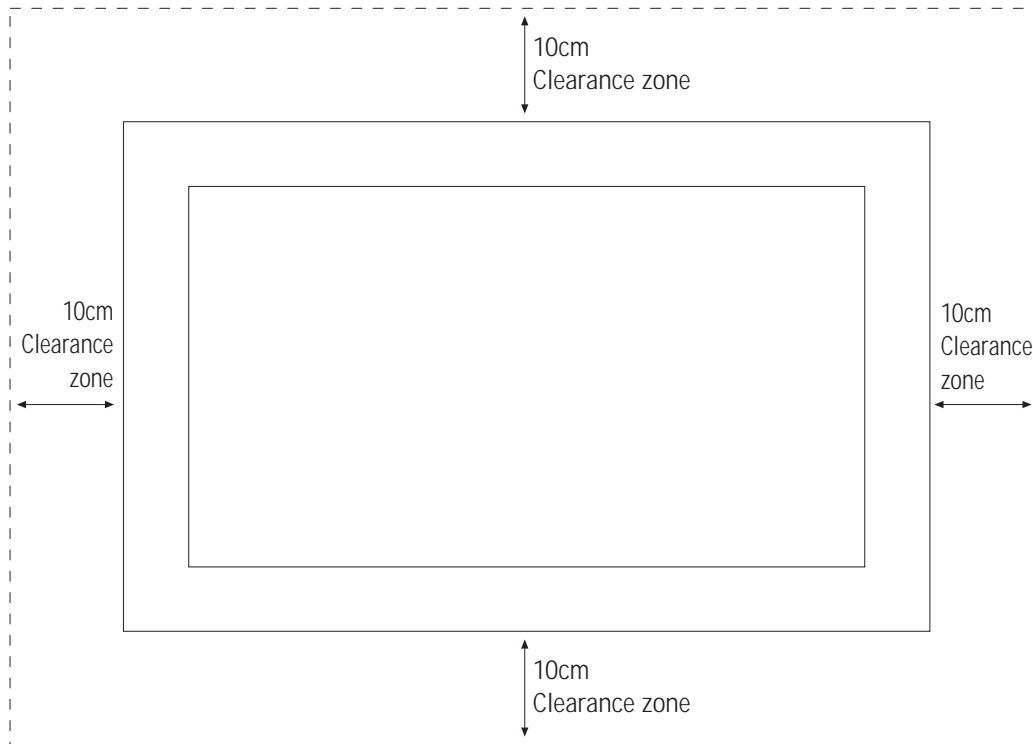
Despite its very large line of vision, the plasma display provides the best performance in a directly vertical line of vision. Align the display along the axis of the most frequently utilised line of vision.

2. Installation site

A suitable installation site should comply with the following criteria:

- | | |
|-------------------------|---|
| • Light reflections | Avoid installation opposite windows or other light sources. |
| • Access to mains input | The mains input and mains switch should be easily accessible at all times. |
| • Ventilation | Maintain a distance of at least 10 cm above and beneath the ventilation slots to furnishings or to the ceiling. |
| • Ambient temperature | It must lie between 5° and 35°C for safe and reliable operation. |

2.4 Reference (instructions) for Wall Mounting



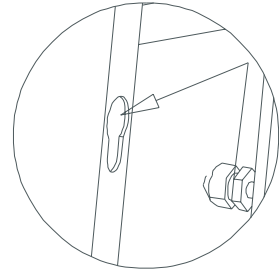
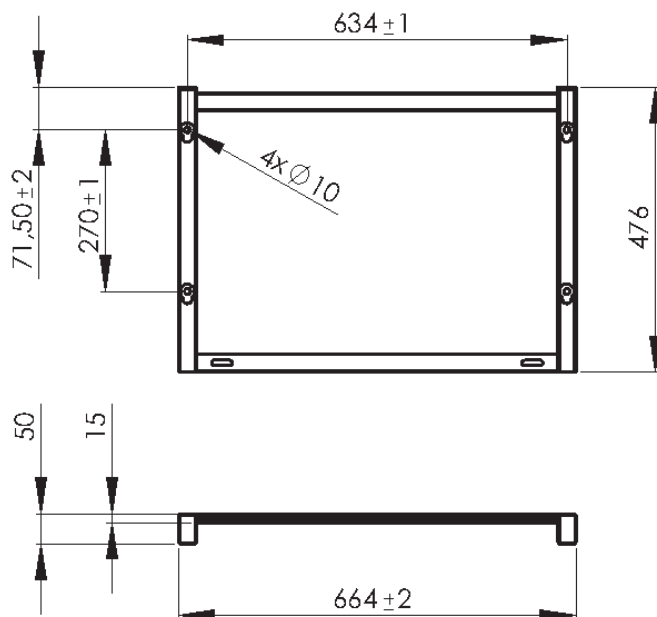
CAUTION

- The plasma display may only be mounted on vertical (plumb) walls by means of the wall mounting unit.
- Before beginning the mounting, make sure that the display is turned off and the mains cable and signal cable are unplugged.
- The background has to be firm and structurally able to carry a load.
- Appropriate materials are to be utilised for varying wall superstructures, such as wooden walls or hollow-space walls. If there's any doubt, contact your responsible sales or service department.

The wall mounting unit is located on the back side of the device. It consists of two vertical brackets which are connected with cross studs. In the packaging you will find a template which will facilitate the mounting on the wall.

The wall mounting unit functions as a type of interface between the display and the wall. The concept consists of attaching the mounting unit to the wall with the help of the template in the first phase, and thereafter hanging the display in the mounting unit.

The manufacturer recommends using M8 dowels.

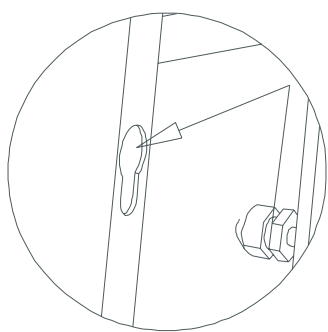
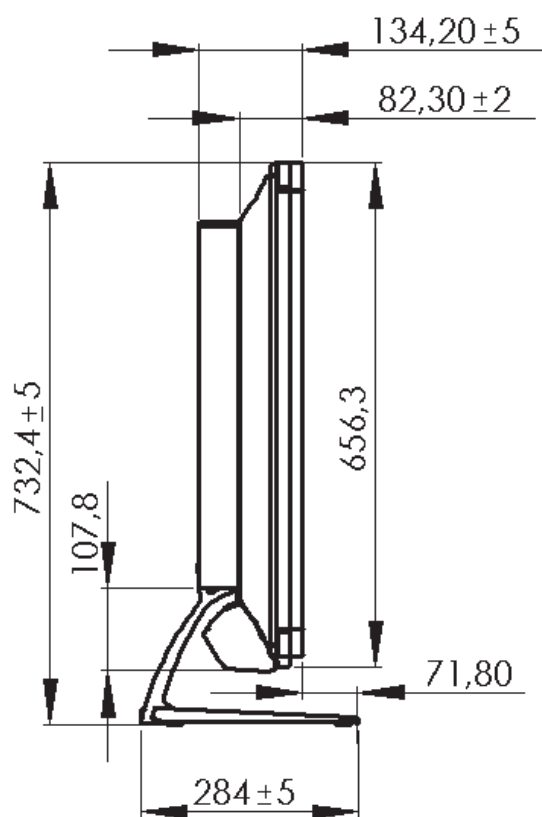


- The attachment points are situated horizontally at a spacing of 634 mm and vertically at a spacing of 270 mm. The spacing between the upper edge and the upper attachment point amounts to 71.5 mm, including the plastic covering.
- The centre of each of the attachment points is shifted 15 mm inwards in reference to the vertical edge of the wall mounting unit.
- The holes for the screws have a diameter of 10 mm.
- Please see to it that the display is about 19 mm lower than the attachment points on the wall after being mounted.
- Mount the display with the pins on the back side in the larger openings of the wall mounting unit, and slowly lower it into the U-shaped cut-out.

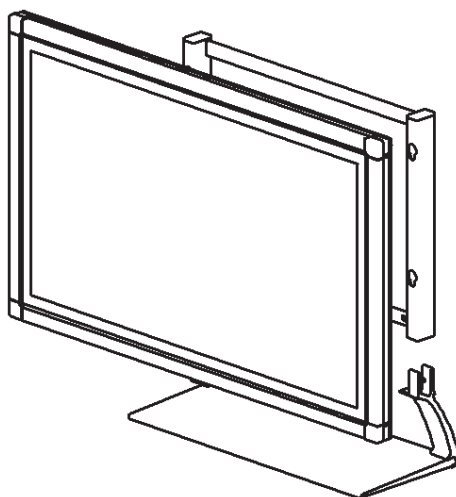
2.5 Reference (instructions) for Table Mounting

The table base consists of the wall mounting unit, table base plate and two connecting pieces left and right.

- Fasten the two connecting pieces with one Allen screw each according to the enclosed assembly drawing.
- Put both connecting pieces from bottom up in the wall mounting unit and fix these with one Allen screw each. Tighten all screws well.
- Place the table base on a stable and horizontal base surface.
- Mount the display with all four mounting pins at the rear side of the display into the openings of the wall mounting unit and lower it slowly.



B (1:2,5)



2.6 Installation of Connecting Line

The following is to be heeded during the connection and installation of the mains cable and the video cable (e.g. SCART, Y/C . . .):

- Please lead the connecting lines to the rear. Please pay attention that the signal lines are not placed directly along the display surface.
- In the interest of good image quality, utilise only shielded, high-quality signal cable. A high-quality 75 Ω coaxial cable should be utilised for connecting the video signal. Poor quality signal cable can

result in strong disturbances and formation of shadows in the displayed image, as well as exceeding the permissible EMC level. The mechanical interlocks of the individual plug-and-socket connectors are necessary for perfect and safe operation of the device.

- You should also avoid placing signal sources such as a PC or a video recorder in front of the display. Please place these signal sources on the side or behind of the display.

2.7 Start-up

There are a few tasks to take care of before you turn on your plasma display for the first time.

- Turn your plasma display off during all tasks for start-up, and pull the mains plug from the socket.

1. Connection of signal sources: TV, VIDEO, PC
2. Connection of sound playback
3. Install the batteries in the remote control
4. Connect the mains cable
5. Turn on the plasma display

2.7.1 Connection of Signal Sources

Connect the cables of your signal sources at the input panel of the plasma display.

You need an antenna cable for the built-in TV tuner, and a suitable cinch cable for external audio signal sources.

Cables for connecting PC signal sources are provided.

- Always turn the device off before connecting a signal source to your plasma display.

2.7.2 Connection of Sound (playback)

Your plasma display has various audio outputs located on the input panel for sound playback. The connection of your hi-fi or Dolby Surround system is also possible, as well as the connection of external loudspeakers to your built-in amplifier.

- Turn your plasma display off before you connect external loudspeakers. Note the technical data of the loudspeaker output, and pay attention to sufficient dimensioning of the loudspeaker.
- Always turn the device off before you establish a connection between your hi-fi or Dolby Surround system and your plasma display.

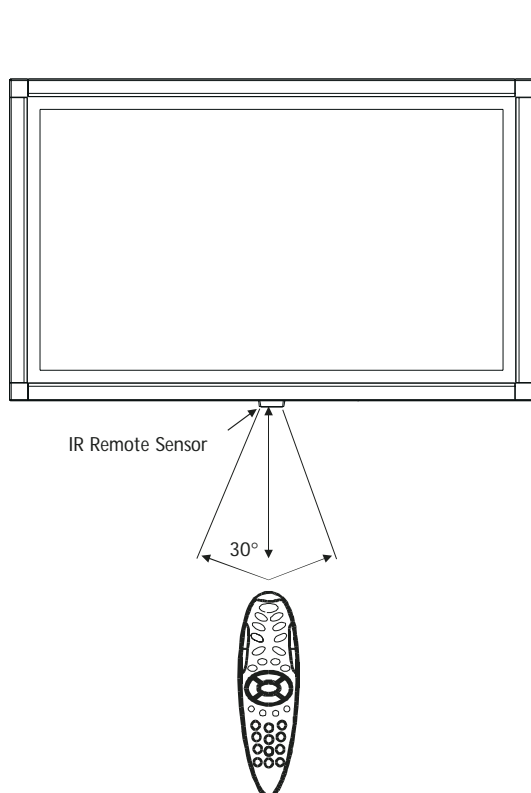
2.7.3 Remote Control

All of your plasma display's selection and adjustment possibilities are able to be carried out with the remote control. Menus on the display are available for your support. You will find the description of the menus starting on page 25 in this manual.

- **Remote control range**

The remote control only functions properly when there is no obstruction between the operation and the infrared sensor on the front side of the plasma display.

It can happen that the display is not able to receive the remote control signals or their function range is severely inhibited, although there is no obstruction in the way. The reason for this is the infrared radiation which the display itself emits. Come closer to the display with the remote control.



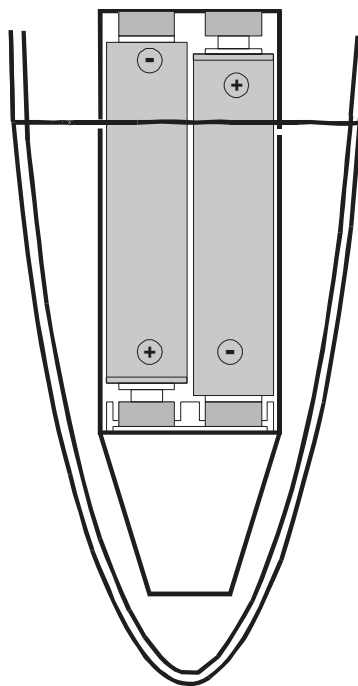
The remote control range is reduced when the batteries become weaker. In this case, please replace the batteries.

- **Installing the batteries**

Please push aside the battery compartment cover with a downward motion. The cover unlocks and is able to be removed.

Insert the enclosed batteries. While doing so, pay attention to the proper polarity of the batteries. This is indicated in the battery compartment.

In order to close the battery compartment, put the cover back on again, and carefully press it shut. Your remote control is now ready for operation.



CAUTION

Reference for disposal of batteries:

Exhausted batteries do not belong in household waste. They must be deposited at a collection site for old batteries (e.g. battery collection box at dealer) or turned in with hazardous waste.

2.7.4 Connection of Mains Cable

Always utilise the enclosed mains cable in order to guarantee optimal image quality.
First of all, insert the mains cable into the input panel, and only thereafter into the socket.

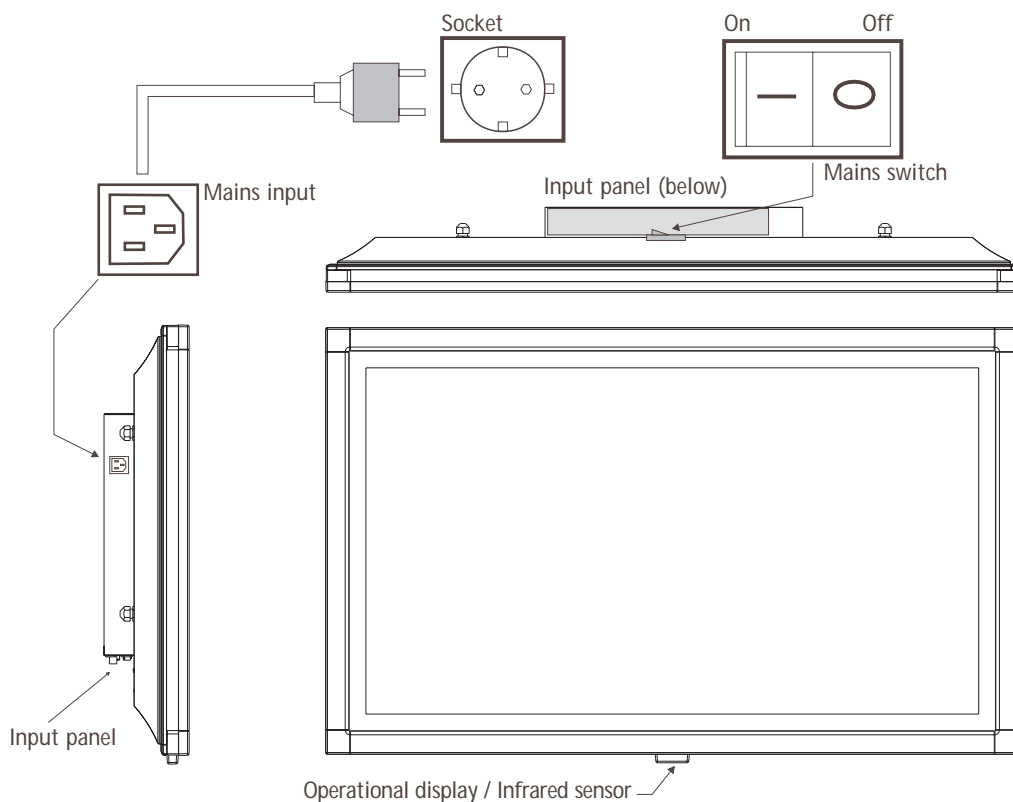
- Never utilise a damaged mains cable!
- Use only sockets with a protective earthing conductor system to ensure safe operation.

A line filter and switches for stabilisation of the supply voltages ensure safe operation within normal mains voltage variations. In case the mains voltage lies beyond the stated limits, please contact your responsible sales office. In the event the mains cable cannot be utilised on account of differing standards in your country, please see to it that you utilise a mains cable commensurate with the country-specific standards which are listed in the following:

• USA	UL
• Germany	VDE
• Canada	CSA
• Switzerland	SEV
• Great Britain	BASEC/BS
• Japan	MITI

This list is not complete. For reasons of safety it may be necessary to select a different safety standard.

At any rate, the mains cable has to consist of three wire conductors of at least 10A/0.75 mm² in order to avoid an accident as a result of electric shock. One of the three wires is implemented on both ends of the cable as an earthing contact connection.



2.7.5 Turning On the Plasma Display

You can only control your plasma display with the remote control when the device is in stand-by mode. Switch the mains switch in the input panel into position I. The operational display on the front side of the display screen lights up red.

- The plasma display is always connected to the power supply network in stand-by mode. You must

switch the mains switch into position 0 and pull the mains plug from the socket for complete disconnection.

- The display has a mains adapter, and can be operated with a supply voltage of 220V - 240V AC and 50Hz/60Hz $\pm 10\%$.

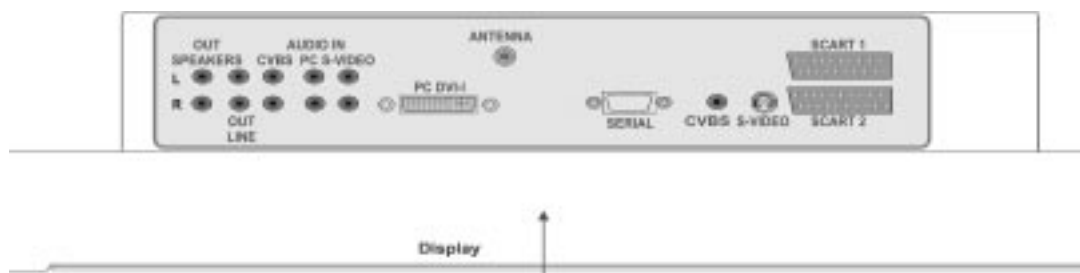
3 Interconnection Options

3.1 Appliance Coupler Summary

On the plasma display's input panel you will find interconnection options for:

- Terrestrial antenna
- cable network
- Video recorder
- Satellite tuner
- Video-CD player
- DVD player
- Video camera
- Personal computer

Please note that for safe operation only devices can be connected to the interfaces which comply with the corresponding safety requirements.



The plasma display's input panel provides various connections as a link to video sources (PAL, SECAM and NTSC) such as video cameras, DVD players and video recorders.

- The Y/C input (S-Video) provides the analogue luminance and colour signals on separate lines. It is frequently utilised as a link to video cameras and DVD players.
- The CVBS video input provides the luminance and colour signals on one line. It provides a cinch plug-and-socket connector which is a very reasonable and simple link, and is frequently utilised as a link to video recorders.

- The SCART 1 video input provides the connection to CVBS, Y/C (S-Video) and RGB video inputs, a CVBS output for connecting a video recorder, and audio inputs & outputs.
- The SCART 2 video input provides CVBS, Y/C (S-Video) video inputs, a CVBS output for connecting a video recorder, and audio inputs & outputs.
- The RF tuner input with IEC jack links the display for connection of terrestrial antennas or cable channel systems.
- The combined input DVI-I (analogue and digital) serves for the connection of high-resolution graphic card signals.
- The RS232 control input for connecting a PC facilitates diagnosis in the event of servicing.
- The OSD input menu enables you to select the desired video input.
- The "ADJUSTMENT" menu enables you to set the configuration of inputs so that, for example, the same input is presented after turning on the display.

3.2 Connection to Compatible PC's

The plasma display is suitable for utilisation together with compatible computers. Your PC has one of the following configurations:

- A built-in graphics adapter.
- An installed graphics card.

Both variations have one analogue and one digital video output jack for connection of a monitor. If you

are not sure about which jack the monitor is to be connected to, you can read more about this in either the graphics card or computer user manuals. In case of doubt, ask for details at your service department. Please use only the enclosed signal cable for connection.

For the connection of your monitor to the system, proceed as follows:

1. Turn off the power supply to the computer and the display.
2. In case it is necessary, install a graphics card according to the directions in the graphics card user manual. Make sure that the graphics card utilised generates a video format that lies within the limits which are stated in the specifications (VGA, XGA).
3. Connect the signal cable to the display's signal input (DVI-I), and to your computer's corresponding video jack (15-pin mini D-DUB) or DVI.

Attention: Falsely connected signal cables can lead to irregularities in monitor operation, a poor image quality or damage to the display, and shorten service life as a result.

4. Connect the supplied mains cable on one side with the display, and on the other side with a grounded wall socket.
5. Turn on the display and the computer, and select an appropriate input (PC/RGB or PC/DVI).
6. During the first utilisation of an analogue video format (RGB). The plasma display always automatically executes the auto-adjust function. During this period the display image "shuttles about" in order to attain the optimal position and playback.

7. You can store frequently used formats as user formats. The display recognises these formats, and immediately presents them in correct fashion without execution of the auto-adjust function.
8. Finish the adjustment of your display by actuating the following listed OSD function, which is found in the "INPUTS ADJUSTMENT" menu: "USER FORMATS".
9. The DDC compatibility ensures that the utilised graphics card only generates video formats within the limits stated in the specifications.
10. Many graphics cards offer formats with 848 x 480 screen resolution in 16:9 format. The utilisation of this resolution is recommended for optimal display presentation.

Reference:

With some inconvenient PC formats, the H/V position and image size have to possibly be manually adjusted for ending the alignment with the geometric adjustments in this menu. The "AUTO-ADJUST" function is extremely dependent on the image presentation.

The presentation of a white frame or a grid cross is well-suited. Should problems arise during connection of the display, please read Chapter 6: "Maintenance (Maintenance and Repairs), use the description of the individual OSD functions, or contact your service site.

3.3 Operating Modes

PC mode

For optimal image reproduction, we recommend the 848 x 480, 640 x 480 or 720 x 400 pixel resolutions. The 848 x 480 pixel resolution corresponds to the display matrix, and offers the best image reproduction. You can obtain the driver for this resolution on the Internet pages of most of the well-known manufacturers of graphics cards.

In contrast to applications with CRT monitors, with flat displays it is not necessary to select a high image refresh for a flicker-free presentation. A refresh of 60Hz is recommended.

Video recorder mode

The utilisation of Y/C (S-Video) or SCART 2 inputs (see fig. page 18) is recommended for enhancement of image quality - if your recorder offers playback in Y/C (S-Video) format.

DVD player mode

The application of the RGB operating mode, which can be connected to the SCART 1 input, is recommended for optimal utilisation. In case your player does not offer this operating mode, please use the Y/C (S-Video) signal mode (see fig. page 18).

Operating mode at the beginning of utilisation

The operating mode of the technology applied recommends the viewing of predominately motion images or at least the constant alternation of still frame images for the first 100 hours.



CAUTION

Image sticking

The manufacturer would like to point out to you that during lengthy viewing of freeze pictures (e.g. PC playback), the image is still slightly visible in the full mask for a few minutes during the subsequent playback of a different source. This is known as "image sticking". This "vanishing" residual image is caused by the system, and does not represent a flaw. Therefore it cannot be considered as a case for warranty claim.

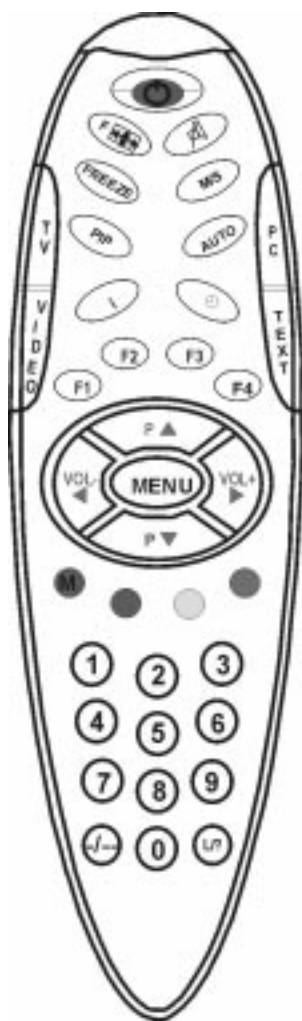
Video cable

A high-quality 75 Ω coaxial cable should be utilised for the connection of the video signal. Poor quality signal cable can result in strong disturbances and formation of shadows in the displayed image, as well as exceeding the permissible EMC level. The mechanical interlocks of the individual plug-and-socket connectors are necessary for perfect and safe operation of the device.

4 Remote control

4.1 Direct Functions

- The remote control only functions if the plasma display has been turned on with the mains switch beforehand.



STDBY



After you have turned on the display once with the mains switch, you can turn it on and off with the remote control (stand-by). Press the keys TV, VIDEO, PC, or 1,2, ... in order to turn on the display. Press the stand-by button in order to switch the display into stand-by mode.

CAUTION: If the display has been turned on in stand-by mode, it is still linked with the mains. For complete disconnection you must first switch the mains switch into the "off" (0) position, and then pull the mains cable.

TV

You can switch directly to TV mode with this key.

VIDEO

You can switch directly to VIDEO mode (SCART1 -> SCART2 -> CVBS -> Y/C) with this key.

PC

You can switch directly to PC mode (PC RGB -> PC DVI) with this key.

FREEZE

With this key you can "freeze" the actual image. The freeze picture remains on the screen until you push this key again.

TEXT

This key serves for switching into the teletext operating mode.

 Mute

This key turns the sound off until you press the key again or change the volume.

M/S

With this key you can switch between playback in stereo, "Stereo Enlarged", mono, or "pseudo stereo"; or, respectively, you can switch between Channel A or B in two-language sound.

MENU

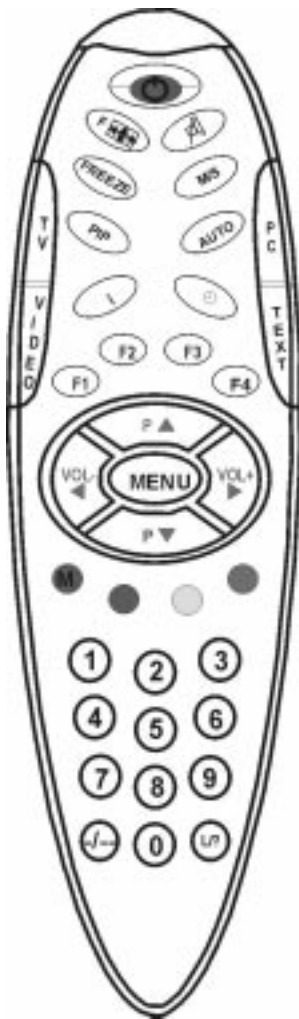
OSD user guide recall and abort

P ▲ / P ▼

This function enables the selection of television channels in ascending or descending order.

VOL + / VOL -

You can increase and decrease the volume of the audio playback with this key.



◀/▶ This function enables the selection and aborting of the submenu.

1 ... 9 and 0 Direct statement of programme slot, teletext page selection.

- / - - With this key you can switch between the one-digit programme numbers (1...9) and the two-digit numbers (11...99).

PIP With this key you can recall the Picture-in-Picture (PIP) function, which allows the simultaneous presentation of video signals on the PC signal. The PIP is always blended into the lower right corner. You can change the size and the position in the OSD.

L/? With this key you can jump directly into the TV operating mode in the "PROGRAMME LIST" menu.

AUTO With this key you can jump directly into the "AUTO PROGRAMMING" mode (TV operating mode).

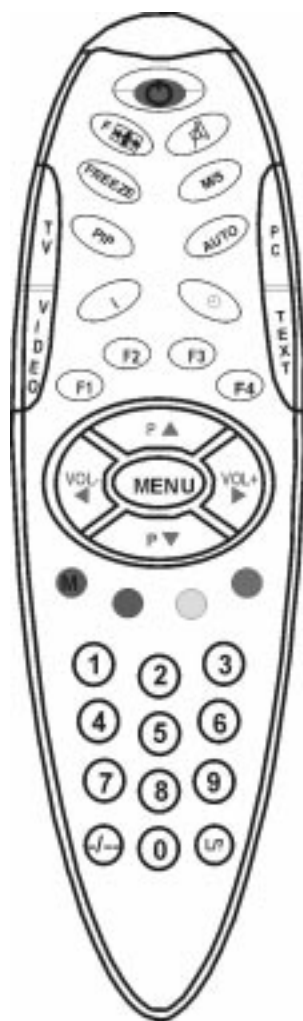
F ⬠ With this key you can switch back and forth between the different image formats (1:1 -> Fit to Screen -> User Zoom) or (4:3 -> 16:9 -> User Zoom).

I Pressing this key shows information on the current programme and on the signal source. You can switch through the individual submenus by pressing this key on the basic setting.

● With this key you can fade in and fade out the time.

Red, green, blue key Teletext
The respective function is determined by the actual teletext page and described there.
If the TV channel offers TOP teletext information, you will recognise this in the multicoloured info line at the bottom.

M / RED The red M (Memo) key directly stores executed parameter changes. Another storage option is the aborting of a menu function or the OSD.
The red key is utilised in the teletext and auto-tuning mode.
In the teletext mode the function assignment is effected through a fade-in in the lower display area. In most cases the red key is assigned for the selection function.



In the auto-tuning operating mode the function assignment is effected by the fade-in of a red field.

- GREEN** In the teletext mode the green key is utilised for downward movement.
- RED** In the teletext mode the red key is utilised for upward movement.
- BLUE** In the teletext mode the blue key is utilised for the activation of a selected function or page. The blue key guides you in the TOP teletext menu. You will be guided through the offered text pages with the colour keys.
- FREEZE** Page change stopping/starting. Some teletext pages consist of several sub-pages, which are automatically broadcast in succession. With this key you can hold the page being shown at the moment on the display. In the upper left corner of the display HOLD will be shown.
- PAGE** Enlarge page. Press this key several times. At first, the upper, and then the lower and then the complete teletext page will be shown.
- ?** There are hidden messages on some teletext pages. Press this key to view the messages.
- Directly selecting the page
Enter the desired number of the page with the numerical keys. As long as the number is incomplete, the display "P 2 –" appears in the upper left corner of the display screen.
- F 1** Configuration-contingent assignment, unused.
- F 2** Configuration-contingent assignment, unused.
- F 3** Configuration-contingent assignment, unused.
- F 4** Configuration-contingent assignment, unused.

4.2 Everyday Settings

4.2.1 On-Screen Display (OSD)

There are six keys on the remote control for menu control. These keys have the following functions:

1. Press the MENU key and the main menu appears on the upper left hand edge of the screen. The main menu "INPUTS" is illustrated in colour, and is ready for the selection of an input with the ► key. Press the ► key in order to activate the selected submenu or the selected function. The selected menu is blended in and provides you with further functions.
2. Press the ◀key in order to exit the selected submenu or the selected function.
3. Press the ▲key or ▼keys in order to make a selection in the main menu or in submenus. The selected menu or the selected function is illustrated in colour during the selection.
4. Press the ►key to activate a function. In many cases, the selected function will be displayed as a bar graph and figures. The ▼key reduces the value of a selected function, and the ▲key increases the value. The implemented values are executed immediately.
5. The M key or exiting the OSD stores the changes made.
6. You can exit the OSD by pressing the "MENU" key. In this case the OSD will fade out immediately.

Main Menu

Inputs >
Picture >
Display >
Sound >
Setting >
Info >

SETTINGS Submenu

Inputs >	Select:	PC (RGB)
Picture >	Settings	>
Display >		
Ton >		
Setting >		
Info >		

- PC (RGB)
- PC (DVI)
- CVBS
- SCART 2 (without RGB)
- SCART 1 (with RGB)
- TV tuner (terrestrial)
- Y/C (S-Video)

- The submenu "Settings" is dependent on the selected signal source.

SETTINGS Submenu

PC (RGB)	H freq.:	38 kHz
	V freq.:	60 Hz
	Pixel Clk:	43.53 MHz
	H / V pole:	+ / -
	User timings	>
	Auto Setup	>
	V pos.:	
	V size:	
	H size:	
	H pos.:	
	Phase:	

Auto Mode Set Up of geometry parameter

- The plasma display always executes the auto-adjust function automatically during the initial utilisation of a video format. During this time the display presentation shuttles back and forth in order to obtain the optimal position and playback.
- You can store frequently used formats as user timings. The display recognises these formats, and immediately presents them in correct fashion without execution of the auto-adjust function.
- The DDC compatibility ensures that the graphic cards utilised only generate video formats within the limits stated in the specifications.

USER TIMINGS Submenu

H freq.:			
V freq.:			
Pixel Clk:			
H / V pole:			
User timings	>	Position	>
Auto Setup		Recall	
V pos.:		Adjust	
V size:		Delete all	
H size:			
H pos.:			
Phase:			

SETTINGS Submenu

PC (DVI)	H freq.:	38 kHz
	V freq.:	60 Hz
	Pixel Clk:	43.53 MHz
	H / V pole:	+ / -
	Auto Setup	>

SETTINGS Submenu

Inputs >	Select:	YC		
Picture	Settings	>	TV standard	PAL BG
Display >			VCR stability	On
Sound >				
Set Up >				
Info >				

- The following TV standards are automatically recognised and indicated in the OSD after recognition: PAL/SECAM/NTSC.
- VCR stability can be turned on or off. Turning on this function improves the image reproduction with connected video recorders which are slightly unstable.

SETTINGS Submenu

Inputs >	Select:	CVBS		
Picture >	Settings	>	TV standard	PAL BG
Display >			VCR stability	On
Sound >				
Setup >				
Info >				

- The following TV standards are automatically recognised and indicated in the OSD after recognition: PAL/SECAM/NTSC.
- VCR stability can be turned on or off. Turning on this function improves the image reproduction with connected video recorders which are slightly unstable.

SETTINGS Submenu

Inputs >	Select:	SCART 1		
Picture >	Settings	>	TV standard	PAL BG
Display >			TV SCART	Decoder
Sound >			RGB input	Scart
Setup >			VCR stability	On
Info >				

- The following TV standards are automatically recognised and indicated in the OSD after recognition: PAL/SECAM/NTSC.
- VCR stability can be turned on or off. Turning on this function improves the image reproduction with connected video recorders which are slightly unstable.
- The TV SCART option provides the functions DECODER, VCR and NOT USED.
- The submenu RGB INPUT offers the following choices: ALWAYS, SCART, NOT USED.

SETTINGS Submenu

Inputs >	Select:	SCART 2		
Picture >	Settings	>	TV standard	PAL BG
Display >			TV SCART	Decoder
Sound >			VCR stability	On
Setup >				
Info >				

- The following TV standards are automatically recognised and indicated in the OSD after recognition: PAL/SECAM/NTSC.
- VCR stability can be turned on or off. Turning on this function improves the image reproduction with connected video recorders which are slightly unstable.
- The TV SCART option provides the functions DECODER, VCR and NOT USED.

SETTINGS Submenu

Inputs >	Select: TUNER		
Picture >	Settings >	Auto Mode search >	
Display >		Manual search >	
Sound >		Sort >	
Setup >		Delete all >	
Info >			

TV standard	PAL BG
Search Form	
Search in progress	
Program start point	

You can select the following TV standards:

- Auto DK, Auto BG, Auto I, Auto L, Auto L`
- SECAM DK, SECAM L, SECAM L`, SECAM BG
- PAL DK, PAL, I, PAL BG

TV standard	
Search Form:	All programmes
Search in progress	New programmes
Start programme	

TV standard	
Search Form	
Search in progress	
Start Program	10

TV standard	
Search Form	
Search in progress	
Start Program	10

START SEARCH Submenu

1 ARD	2	3	4	5	6	7	8	9	10
11 ZDF									
21 WDR									
31 ____									
41									
51									
61									
71									
81									
91								99	
Search underway									
(Red) ? : Abort search									

Inputs >	Source: TUNER		
Picture >	Source Settings >	Auto Mode search >	
Display >		Manual search >	
Sound >		Sort >	
Setup >		Delete all >	
Info >			

MANUAL SEARCH Submenu

Programme	11
TV standard	PAL BG
Frequency	055.05 MHz
Name	ZDF

SETTINGS Submenu

Inputs >	Source: TUNER		
Picture >	Source Settings >	Auto Mode search >	
Display >		Manual search >	
Sound >		Sort >	
Setup >		Delete all >	
Info >			

SORTING Submenu


1 ARD	2	3	4	5	6	7	8	9	10
11 ZDF									
21 WDR									
31 ---									
41									
51									
61									
71									
81									
91								99	
(Green)_ : Select a program. Current = 31 MENU: Stop sorting									
(Blue)_ : Insert an empty program at current position.									
(Yellow)_ : Swap selected program with current position.									

Inputs >	Source: TUNER		
Picture >	Source Settings >	Auto Mode search	>
Display >		Manual search	>
Sound >		Sorting	>
Setup >		Delete all	>
Info >			

DELETE Submenu






1 ARD	2	3	4	5	6	7	8	9	10
11 ZDF									
21 WDR									
31 ---									
41									
51									
61									
71									
81									
91								99	
(Red)_ : Delete current program. MENU: stop deleting									
(Green)_ : Select delete range start point. Current = 31									
(Blue)_ : Select delete range end point. Current = 31									
(Yellow)_ : Confirm delete from start point to end point.									

Submenu IMAGE for PC Signals

Inputs >			
Picture >	Contrast:	92	
Display >	Brightness:	48	
Sound >	Sharpness		
Setup >			
Info >			


- Contrast, Brightness -> Press the ▲ key to increase the value of the Set Up, and ▼ to make the image darker. Range 0 to 100%.
- Image definition -> Press the ▲ key to enhance the image definition. 5 definition settings are available.

Submenu Image for Video Input Signals

Inputs >			
Picture >	Contrast:	92	
Display >	Brightness:	48	
Sound >	Sharpness:		
Set Up >	Colour:	40	
Info >	DNC	15	
	Photo CD:		On
	Interlace:		Automatic
	Anti Flicker		On


- Contrast, Brightness -> Press the ▲ key to increase and/or ▼ decrease the Set Ups.
- Sharpness -> Adjustable filter functions which can enhance the image definition of the playback depending on the programme material. This function is only usable in the playback of PAL or NTSC signals.
- Colour -> Press the ▲ key to change the entire colour sensation in the direction Green, and press the ▼ key to change it in the direction violet.
- The menu point DNC (Digital Noise Control) allows the connection of noise suppression in 32 intervals, which enhances the image quality in weak signals.
- The menu point Photo CD allows the optimised connection of colour and interlaced Set Ups for the playback of Photo CD images.
- The Interlace menu point enables switching between an optimised interlace playback for freeze pictures, automatic switching between freeze pictures and video images for camera operation and movie playback.
- The Anti Flicker menu point switches during the playback of video signals between a synchronous and jerk-free 50 Hz operation and a flicker-free 60 Hz operation. The display starts up after first being turn on in 60 Hz operation.
- "On" signifies 60Hz operation and "Off" signifies 50Hz operation. The slight flickering in 50 Hz is strongly contingent on the displayed image material. The selected setting is retained after the display is turned off.

Submenu DISPLAY for PC Signals

Inputs >			
Picture >			
Display >	Picture format	Zoom:	Full Screen
Sound >	Colour temperature	User zoom:	
Set Up >	Image contrast		
Info >	Picture-in-Picture		
	Freeze picture		
	User colour temperature		

- The Zoom submenu allows the Set Up of a series of zoom factors which allow the partial, complete or enlarged display of the image.
- The Zoom menu point allows the following choices: Full Screen, PC FILL AR, User Zoom, PC 1:1.
- PC Fill AR scales the input format to 480 lines, and scales the horizontal resolution in 4:3 formats to 640 points, in order not to alter the aspect ratios.
- PC 1:1 does not scale the input format in horizontal and vertical direction. It is centrally displayed in the centre of the screen.

Submenu DISPLAY for Video Signals

Inputs >			
Picture >			
Display >	Picture format	Zoom:	Full Screen
Sound >	Colour temperature	User zoom:	
Setup >	Image contrast		
Info >	Picture-in-Picture		
	Freeze picture		
	User colour temperature		

- The Zoom submenu allows the Set Up of a series of zoom factors which allow the partial, complete or enlarged display of the image.
- The Zoom menu point allows the following choices: Video 4:3, Full Screen, Video 16:9, Zoom, User Zoom, Video NLS (non-linear scaling), Auto.
- The effects of these zoom functions on the image presentation are summarised in section 5.

Submenu DISPLAY for PC / Video Signals

Inputs >			
Picture >			
Display >	Picture format		
Sound >	Colour temperature	9300K	7500K
Setup >	Image contrast		9300K
Info >	Picture-in-Picture		11000K
	Freeze picture		User
	User colour temperature		



- Open the selection with the ► key, and select one of the indicated colour temperatures. You can configure the user colour temperature at the end of the DISPLAY menu.

Submenu DISPLAY for PC / Video Signals

Inputs >			
Picture >			
Display >	Picture format		
Sound >	Colour temperature		
Setup >	Image contrast	Light	Light
Info >	Picture-in-Picture		Ideal
	Freeze picture		Dark
	User colour temperature		

- Open the selection with the ► key, and select one of the indicated contrast characteristics.

Submenu DISPLAY for PC Signals

Inputs >			
Picture >			
Display >	Picture format		
Sound >	Colour temperature		
Setup >	Image contrast		
Info >	Picture-in-Picture	Size / (On/Off)	PIP Off
	Freeze picture	Source	
	User colour temperature	Horizontal pos.	
		Vertical position	




- The Picture-in-Picture (PIP) menu appears only during selection of one of the two PC signal sources. The PC image is displayed in the full mask, and the selected video image can be called-in as a fade-in.
- Open the selection with the ► key, and start the image fade-in by selecting PIP "On".
- The size of the fade-in can be additionally changed here in three intervals – from small via medium to large.
- The source for the image fade-in can be selected from among all video outputs.
- The position of the fade-in can be changed in a vertical and horizontal direction. The fade-in always starts in the lower right corner so that the OSD is not concealed.

Submenu DISPLAY for PC / Video Signals

Inputs >			
Picture >			
Display >	Picture format		
Sound >	Colour temperature		
Setup >	Image contrast		
Info >	Picture-in-Picture		
	Freeze picture	Off	Off
	User colour temperature >		On

- You can stop or continue the video image in this menu or with the FREEZE key.

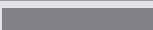




Submenu DISPLAY for PC / Video Signals

Inputs >				
Picture >				
Display >	Picture format			
Sound >	Colour temperature			
Setup >	Image contrast			
Info >	Picture-in-Picture			
	Freeze picture			
	User colour temperature	Red	128	
		Green	127	
		Blue	128	

Submenu Sound for PC / Video Signals

Inputs >		
Picture >		
Display >		
Sound >	Volume	
Setup >	Balance	
Info >	Equaliser	Rock
	Option	Stereo
	Volume line out	
	Max. startup volume	
	Vol control	On
	User equalizer >	

Submenu Sound for PC / Video Signals

Inputs >				
Picture >				
Display >				
Sound >	Volume			
Setup >	Balance			
Info >	Equaliser >			
	Option >			
	Volume Audio Out			
	Maximum startup volume			
	AVC >			
	User equalizer	< 120 Hz		32
		500 Hz		32
		1.5 kHz		32
		5 kHz		32
		> 10 kHz		32

Submenu SETUP for PC / Video Signals

Inputs >		
Picture >		
Display >		
Sound >		
Setup >	Display Source Info:	On
Info >	Language:	German
	OSD Set Up:	>
	Pwr Down / Stand-by:	>
	Reset to factory defaults:	>
	Sleep Timer:	Off

- Choices for info fade-in: "On" or "Off"
- Language choices: German, English, French, Italian

Submenu SETUP for PC / Video Signals

Inputs >				
Picture >				
Display >				
Sound >				
Setup >	Display Source Info:	On		
Info >	Language:	German		
	OSD Set Up:	>	Time Out:	5 sec.
	Pwr Down / Stand-by:	>	Transparency:	Off
	Reset to factory defaults:	>		
	Sleep Timer:	Off		

- Choices for Sleep Timer disable and Transparency OSD: "Off" and "On".
- Time Out choices: "Off", 5, 10 and 15 seconds after the last actuation.

Submenu SETUP for PC / Video Signals

Inputs >				
Picture >				
Display >				
Sound >				
Setup >	Display Source Info:	On		
Info >	Language:	German		
	OSD Set Up:	>		
	Pwr Down / Stand-by:	>	Show Logo	On
	Reset to factory defaults:	>	Reaction on PC syncs:	Off
	Sleep Timer:	Off		

- Choices for Display, Logo and Reaction PC sync: "OFF" and "ON".
- Sleep Timer choices: "Off", 0:30, 1:00, 1:30, 2:00, 2:30.
- Activate the selection with the ► key, and switch back and forth with the key ▲ and ▼.

Submenu INFO

Inputs >		
Picture >		
Display >		
Sound >		
Setup >		
Info >	Current temperature:	30,5° C
	Hardware version:	01
	Software version:	V02a

5.0 Format Set Ups

5.1 Video Signal Source

In the DISPLAY menu the OSD offers seven different operating modes in order to optimally present the different signal sources and video formats on the 16:9 width format display.

With the help of the following descriptions you can select the most suitable mode which are indicated by the mode of operation of the display modes. The user zoom can also be utilised with PC signals.

4:3 mode

This mode presents a PAL 4:3 image in correct aspect ratio. Dark streaks are visible on the right and left margin of the image. PAL 4:3 images with 576 lines are converted into 480 visible lines and 640 visible pixels.

Video NLS (Non Linear Scaling)

This mode scales the input signal "fit-to-screen" in a horizontal and vertical direction as well as in a non-linear fashion; i.e., the image contents are illustrated in the middle of the screen like the original, and a stronger scaling takes place on the margin.

Full Screen (Fit-to-Screen)

This mode enlarges or reduces input formats in horizontal and vertical direction so that the image is always presented as "fit-to-screen".

Auto (Automatic)

This mode automatically scales the input signal in a horizontal and vertical direction on a fit-to-screen display. It recognises 4:3, Cinescope and 16:9 movie material, and scales the material with the predetermined factors.

Video 16:9 mode

This mode presents a PAL 4:3 image in such a fashion that no dark streaks are visible on the right and left margin of the image. PAL 4:3 images are converted into 852 visible pixels. As a result of the scaling in the horizontal direction, a portion of the 576 lines is not symmetrically presented on the upper and lower margin of the image.

ZOOM

The manual conversion from the 4:3 mode into the Zoom mode stretches the image in a vertical and horizontal direction by ca. 20% by means of the Full Screen presentation. As a result, the black streaks on the lower and upper margin of the image, which appear in 4:3 format in the presentation of Cinescope movies, are reduced to a minimum or disappear entirely.

USER ZOOM MODE

The user mode zoom enables a reduction or an enlargement of the image size in a vertical and horizontal direction. The Set Up range varies from 40% to 140% of the original image size.

6.0 Error Analysis and Possible Recovery

40

ERROR

Complete display failure, although the mains plug is inserted and the device is turned on with the mains switch and remote control.

POSSIBLE CAUSE

- Power supply interrupted
- Defect fuse
- Defect mains cable

POSSIBLE RECOVERY

- Call Service Hotline

ERROR

Dark display

POSSIBLE CAUSE

- Contrast setting too low
- No input signal

POSSIBLE RECOVERY

- Correctly adjust brightness and/or contrast
- Correctly connect cable, check video source

ERROR

No colour or excessive colours

POSSIBLE CAUSE

- No signal from the computer for the missing colour
- Poor signal connection

POSSIBLE RECOVERY

- Check computer/video source
- Correctly connect cable

ERROR

No/poor vertical and/or horizontal synchronisation.

POSSIBLE CAUSE

- Sync lines have a poor connection
- Poor signal connection

POSSIBLE RECOVERY

- Screw in the utilised plug-and-socket connectors correctly.
- Check the individual connection lines

ERROR

The remote control does not function.

POSSIBLE CAUSE

- The batteries are empty.
- There is an obstruction between the remote control and the sensor.
- The remote control is beyond its operating range.

POSSIBLE RECOVERY

- Insert new batteries.
- Remove the obstruction between the remote control and the sensor.
- Operate the remote control in the stated range.

ERROR

The displayed image is too dark.

POSSIBLE CAUSE

- The display screen quality is not adjusted properly.

POSSIBLE RECOVERY

- Correct the image brightness and contrast.

ERROR

No signal appears on the screen.

POSSIBLE CAUSE

- You have selected the false input channel.
- The display cannot function with the provided signals.

POSSIBLE RECOVERY

- Switch to the appropriate input.
- Make the signal available in the proper format.

ERROR

Individual letters are not displayed (PC mode).

POSSIBLE RECOVERY

- Adjust the proper phase position.
- Check the setting of the image width.
- Execute Auto Adjust.

ERROR

Horizontal streaks in TV or video signals

POSSIBLE CAUSE

- Signal source placed in front of the display.
- Video cable shielding is insufficient.

POSSIBLE RECOVERY

- Always place signal sources on the side of or behind the display.
- Utilise only high-quality signal cable with greater screen damping.

6.1 Repairs



WARNING

Do not repair the display yourself! In this case your warranty expires in addition to your personal endangerment.

Should an error appear which cannot be repaired on-site, please contact the Service Hotline. On account of the modular design of the display, it is possible to repair your device quickly and at low cost. Any intervention into the device which exceeds operator-specific external adjustments, in particular the dismantling of protective coverings, is reserved solely for personnel trained for this purpose, in compliance with VBG4 (Accident Prevention Regulations, workplace safety).

Of course, complete displays can be sent back to the manufacturer for repair. Should you do this, please include the following information on your display:

1. Description of the defect

Describe the exact symptoms on your repair order as thoroughly as possible. Should the problem arise periodically, please include this in your error description.

2. Specific statements

Should your device have been, for instance, exchanged or modified, please indicate this in any return shipment. In the event of an already undertaken modification, should it be desired that this modification is retained, please also indicate this.

3. Invoicing

Please indicate the desired type of invoicing, i.e. let us know whether an estimate with or without cost release is desired on your part before repair of the device. Should no details be provided for this purpose, the repairs will be effected according to standard procedure.

6.2 Cleaning the Display and Housing

Dust and other dirt which gather on the display impair the image quality and should be removed from time to time.



CAUTION

Pull the mains plug before beginning cleaning.

Cleaning the plasma display can be split up into different areas:

1. Display surface

Moisten a clean cloth (do not soak) with an environmentally friendly glass cleaner. It contains spirits as active substance (up to 98%) and biologically degradable surface-active agents. Glass cleaner removes fingerprints, fatty dirt, dust and nicotine deposits. In order to prevent formation of streaks,

clean the display with circular motions. Dry the display with a second, clean cloth.

2. Housing surface

It is recommended to rid the housing of dust and other dirt beforehand with a feather duster. The feather duster must be comprised of non-conductive material such as plastic or wood. Moisten a clean cloth (do not soak) with a liquid such as environmentally friendly glass cleaner and/or an antistatic plastic cleaner. It cleans the surface and additionally protects against electrostatic charging, which is one of the main reasons for the dust gathering on the display. In accordance with EU recommendation, this cleaning agent contains less than 5% anionic surface-active agents, alcohol and some scents. In accordance with GefStoff V [hazardous materials ordinance], these cleaning agents are designated as inflammable substances; however, according to the VbF [inflammable liquids ordinance], they are not combustible.

6.3 Declaration of Return

The supplier is aware of the growing importance of environmental protection and waste prevention. Even during the beginning of a product development considerable emphasis is placed on effective utilisation of material, reusable parts and materials, and easy dismantling at the end of the product lifetime. The modular design of the colour plasma display and the materials utilised enable easy separation in sensible portions, which represents a basic prerequisite for waste separation and recycling.

We guarantee to take the colour plasma display back from you at the end of the product lifetime. We ensure that all parts are recycled in an adequate manner, or will be brought to a waste disposal site for the protection of our environment. Please contact our service department for more extensive information.

7. Technical Specifications

7.1 Product Attributes

The colour plasma display complies with the following specifications, when

- the power supply lies within the specified range,
- the display has been in operation for at least 30 minutes,
- the timing, video input and the display size are specified as follows.

Where no other information is effected, all details in these technical specifications have been measured in accordance with the VESA Standard Display Specifications and Test Procedures.

- **OSD and IR remote control**
Clearly coherent and well-designed menus and the operation of the IR remote control make the operation of the diverse input sources as easy as child's play. The following menus are available for you: **Info, Sound, Image, Display, Inputs and Settings**. The most important functions such as channel switching, format switching, switching of TV / VGA mode and volume are provided directly on the remote control.
- **Audio equaliser**
In addition to volume and balance control, 5 OSD slide controls (120 Hz, 500 Hz, 1.5 kHz, 5 kHz, 10 kHz) for sound influence are available to you.
- **Multisync VGA display**
The multisync technology enables operation on different PC formats – from VGA to XGA, up to a maximum clock frequency of 95 MHz. The auto-adjust function and the parameter storage ensure that adjustment on a new format is easy, and that a format which has been adjusted once is automatically recognised and optimally presented in the best image quality when turning on the device the next time.
- **Digital comb filter**
In order to increase the horizontal resolution in a standing, vertical line structure, the mixed signals for the colour and black-and-white image must be separated. The digital comb filter provides the desired signal separation through the multiple filtering. A clear separation enhances the horizontal resolution in the presentation of vertical structures, and guarantees clear colour transitions even in the presentation of high-resolution images.
- **8-bit digital signal processing**
The digital signal processing functions with 8 bits per colour. This resolution guarantees precise playback without loss of information or colour. The result is a natural image with fine details and 256 grey scales.
- **Adjustable audio inputs and outputs**
The volume level of the audio output is adjustable in the "Sound" menu.
- **Gamma correction**
The non-linear gamma correction increases the number of perceptible grey scales, and prevents image saturation in the upper range.
- **Colour temperature control**
Individual colour temperature control guarantees precise colour rendition.
- **Stand-by**
The display can be switched to stand-by mode per infrared remote control, which reduces the power consumption to only 5 W. When it is activated, the stand-by mode is indicated by a brightly glowing red LED on the front side of the device.
- **Multistandard TV tuner**
The multistandard TV tuner (PAL/SECAM) receives signals from terrestrial antennas or from a cable network. The input frequency range varies from 47 to 861 MHz. You can also connect your satellite receiver output here or on the SCART input.
- **Teletext system**
The videotext system offers brand-new information and new developments concerning sports events, weather forecasts and politics.
- **Progressive scan through de-interlacing**
Digital signal processing transforms the received fields into pictures by means of internal de-interlacing, and thus achieves precise image presentation on a 16:9 display screen. The switching between 50 Hz and 60 Hz optimises rapid motion sequences and reduces the image flickers in the presentation of very bright images.

7.2 SCREEN

- Size:
42" - 106cm
- Format:
16:9
- Presentable image size:
920 mm (horizontal) x 518 mm (vertical)
- Elimination of reflections:
Finely etched filter screens
- Transmission:
52 %
- Angle of viewing:
> 160°
- Contrast ratio:
700 : 1 (dark room) typ.

7.3 RESOLUTION

- Resolution:
852 x 480 pixels

7.4 COLOUR DISPLAY

- Colour display:
16.7 million simultaneous colours

7.5 OPERATION

- Control elements:
Mains switch, IR remote control, On-Screen-Display, automatic and manual tuning system with automatic channel storage, 99 channel slots

7.6 PC FREQUENCY RANGE

- Horizontal 30 kHz – 80 kHz
vertical 50 Hz – 85 Hz
clock frequency 95 MHz max.
- DOS 640 x 400 and 720 x 400
VGA (640 x 480) @ 50Hz - 85Hz repeat rate
SVGA (800 x 600) @ 50Hz - 85Hz repeat rate
WVGA (848 x 480) @ 50Hz - 85Hz repeat rate
XGA (1024 x 768) @ 50Hz - 85Hz repeat rate
- Format presentation
PC 1:1, Format-filling, User Zoom
(40% - 140%), Fit-to-Screen

7.7 VIDEO/SYNCHRONISATION

- RGB analogue and automatic sync recognition
- Level: 0.7Vss +/- 3dB @ 75 Ω
- Sync types: Sync-on-Green (SoG), Composite, Separate
- Level: TTL
- VESA DDC: Version 1/2B compatible
- Cinch (RCA plug) and SCART, 1Vrms nominal

7.8 VIDEO STANDARDS

- Video: PAL/SECAM/NTSC
- TV tuner: PAL/SECAM
- 47 MHz to 861 MHz: VHF/UHF/HYPERBAND for terrestrial antennas or cable networks
- PALplus, Cinescope: Automatic format recognition
- Format presentations: 4:3, 16:9, Zoom, User Zoom (40% - 140%), Fit-to-Screen, Non Linear, Auto

7.9 VIDEO/PC INPUTS

- Mains connection: IEC plug-and-socket connector
- TV tuner input: IEC plug-and-socket connector, 75 Ω input resistance
- SCART inputs: RGB(1), CVBS "On", CVBS "Off", Audio On/Off
- CVBS input: Cinch (RCA plug) 1Vss @ 75 Ω input resistance
- Y/C (S-Video) input: Mini DIN (HOSIDEN)
Y: 1Vss @ 75 Ω input resistance
C: 0.3Vss (PAL), 0.286Vss (SECAM) @ 75 Ω input resistance
- VGA/SVGA/WVGA/XGA: DVI-I (DDWG)

7.10 AUDIO

- Stereo inputs: 3 x Cinch, 1Vrms (CVBS, Y/C, PC)
- Stereo inputs: 2 x SCART, 1Vrms
- Stereo line output: 1 x Cinch, adjustable
- Stereo LS output:
1 x Cinch, 7 W sine @ 4 Ω , 20 Hz – 20 kHz

7.11 OPERATING CONDITIONS

- Temperature range (operation):
+5°C to +35°C
- Temperature range (storage):
-20°C to +60°C
- Humidity (non-condensing):
10% to 85%
- Altitude: max. 2,000 m (ca. 7,000 ft)
- Voltage supply: AC 220-240V
- Network frequency: 50Hz/60Hz \pm 10%
- Power consumption: 1.8 A 280 W typical;
5 W (RMS) Stand-by mode

7.12 CONFORMITIES

- EMC: EN55022, EN55024, EN61000-2-2/-3
- Safety: EN60950, CE

7.13 DIMENSIONS & WEIGHT

- H x W x D:
approx. 643 x 1045 x 129 mm
without accessories
approx. 732,4 x 1045 x 284 mm
with table base
- Weight:
approx. 37 kg without accessories

7.14 IR REMOTE CONTROL

- Conrac CMM3
- Range: ca. 6 m
- Functional angle: $\pm 30^\circ$
- Code: RECS 80

7.15 LOUDSPEAKER (OPTIONALLY)

- Impedance: 4 - 8 Ω
- Frequency range: 130 - 15000 Hz
- Load capacity: 2 x 10 W sine

