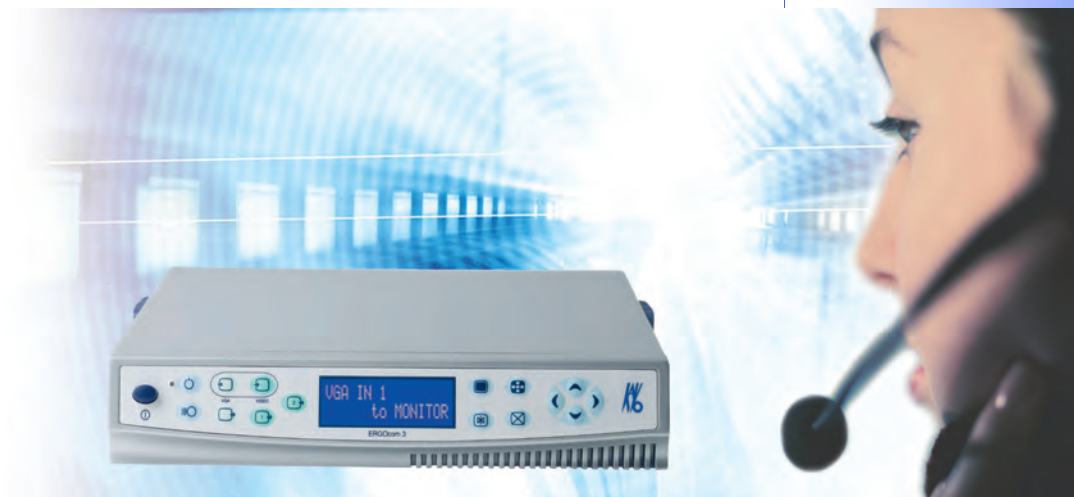


Technical Description

Users Manual

User instructions

ERGOcom 3



Always on the safe side.

Vertrieb / Distribution:

KaVo Dental GmbH & Co. KG
Bahnhofstraße 20
D-88447 Warthausen
Tel.: ++ 49 / 73 51 / 56 - 0
Fax: ++ 49 / 73 51 / 56 16 27

Hersteller / Manufacturer:

Kaltenbach & Voigt GmbH & Co. KG
Bismarckring 39
D-88400 Biberach



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1 User Notes

1.1 User guidelines

Prerequisite
Please read these instructions before using the product to avoid operator error and damage.

1.1.1 Abbreviations

Abbre- viation	Meaning
UI	User instructions
SI	Setup instructions
EI	Engineer's instructions
SFC	Safety checks
IEC	International Electrotechnical Commission

1.1.2

1.2 Target audience

This document is intended for use by dentists and other dental practice employees.

1.3 Service



Please send all questions about the product, services and maintenance to the following addresses.

Always quote product serial number in any correspondence.

KaVo Dental GmbH & Co. KG

After Sales Service

Bahnhofstraße 20
D-88445 Warthausen
07351-56 2700
07351-18218
kunden-service@kavo.de
www.kavo.com

KaVo Präsentations- und Servicezentrum Frankfurt (KaVo Presentation and Service Center, Frankfurt)

Hungener Straße 6-12
60389 Frankfurt
069 - 5 97 03 -94 / 95

KaVo Präsentations- und Servicezentrum Hamburg (KaVo Presentation and Service Center, Hamburg)

Sachsenstraße 5
20097 Hamburg
040 - 23 44 -77/ - 78

KaVo Präsentations- und Servicezentrum Düsseldorf (KaVo Presentation and Service Center, Düsseldorf)

Kaiserswerther Straße 35
40477 Düsseldorf
0211 - 49 91 -38 / -39

KaVo Präsentations- und Servicezentrum Berlin (KaVo Presentation and Service Center, Berlin)

Uhlandstraße 20-25
10623 Berlin
030 - 7 91 94 84

KaVo Präsentations- und Servicezentrum Leipzig-Gerichshain (KaVo Presentation and Service Center, Leipzig-Gerichshain)

Zweenfurther Straße 9
04827 Leipzig-Gerichshain
03 42 92 - 7 41 -12/ -13

1.4 Provisions of guarantee

The KaVo end customer guarantee for the product named in the completion certificate guarantees that the product functions correctly and that there are no faults in the material or workmanship for a duration of 12 months following the purchase date, according to the following conditions:

Following a reasonable complaint relating to defects or short delivery, KaVo guarantee to provide a replacement or perform repairs, whichever they deem most suitable. Claims of any other nature, damages in particular, are excluded. In case of default and gross negligence or intent, the latter only applies if there are no compelling legal provisions opposing it.

KaVo shall not be liable for defects and their consequences, which occur as a result of normal wear and tear, or of improper cleaning or maintenance.

Non-observance of the operating, maintenance or connection regulations; calcination or corrosion; impurities in the air and water supply; or chemical or electrical effects, which are non-standard or not permitted according to company regulations. As a general rule, this guarantee does not apply to lamps, glassware, rubber parts or the colour durability of synthetic materials.

KaVo shall not be liable for defects or their consequences if they are likely to be a direct result of actions or modifications by a customer or third party.

Any claims arising from this guarantee can only be lodged if the completion certificate (carbon copy) has been sent in to KaVo and the operator/user is able to produce the original.

1.5 Transport and storage

1.5.1 The German packaging ordinance, 28 August 1998

**Note**

Applies only to the Federal Republic of Germany.

KaVo transport packaging is disposed of and recycled by local waste management and recycling companies under Germany's Dual System.

For more information about waste management and recycling, and for up-to-date lists of local waste management and recycling companies, visit the following sites:

<http://www.umweltdatenbank.de>

<http://www.quality.de>

AnyKaVo transport packaging that customers return to KaVo, at the customer's own expense, shall be forwarded to the appropriate recycling companies at no extra cost and with no reimbursement.

1.5.2 Damage in transit

Within Germany

If the outer packaging is noticeably damaged upon delivery, the following procedure must be adhered to:

1. The recipient must record the loss or damage on the notice of receipt. The recipient and transport company employee delivering the product must both sign the notice of receipt.
2. Leave the product and packaging in the condition they arrived in.
3. Do not use the product.
4. Report the damage to the transport company.
5. Report the damage to KaVo.
6. Under no circumstances should you return the damaged product to KaVo without prior consultation.
7. Send the signed notice of receipt to KaVo.

If the product is damaged without there being any noticeable damage to the packaging upon delivery, you must proceed as follows:

1. As soon as possible within 7 days of delivery, report the damage to the transport company.
2. Report the damage to KaVo.
3. Leave the product and packaging in the condition they arrived in.
4. Do not use the damaged product.

**Note**

If the recipient fails to adhere to any of the procedures mentioned above, the damage shall be considered as having arisen after delivery (pursuant to Germany's General Terms and Conditions for Carriers (ADSp.), Article 28).

Outside Germany



Note

KaVo shall not be liable for damage caused in transit.
Check the shipment immediately upon delivery!

If the outer packaging is noticeably damaged upon delivery, the following procedure must be adhered to:

1. The recipient must record the loss or damage on the notice of receipt. The recipient and transport company employee delivering the product must both sign the notice of receipt.
The recipient may claim damages against the transport company only on the basis of these recorded facts.
2. Leave the product and packaging in the condition they arrived in.
3. Do not use the product.

If the product is damaged without there being any noticeable damage to the packaging upon delivery, you must proceed as follows:

1. As soon as possible within 7 days of delivery, report the damage to the transport company.
2. Leave the product and packaging in the condition they arrived in.
3. Do not use the damaged product.



Note

If the recipient fails to adhere to any of the procedures mentioned above, the damage shall be considered as having arisen after delivery (pursuant to the Convention on the Contract for the International Carriage of Goods by Road (CMR) Chapter V Article 30).

1.5.3 Storage

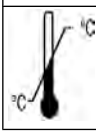


Note

Save packaging in case product requires sending away for servicing or repairs..

The symbols printed on the outer packaging apply to transportation and storage; their meanings are as follows:

	Keep upright in transit; this way up!
	Handle with care
	Keep dry

	Stacking limitation.
	Temperature limitations.

2 Safety

2.1 Description of safety instructions

2.1.1 Hazard warning symbol

	Hazard warning symbol
---	-----------------------

2.1.2 Structure



The introduction describes the type and source of the danger.
This section shows what could happen if the instructions are not followed.
► The optional action shows what measures to take to avoid danger.

2.1.3 Description of the different levels of hazard

To avoid personal and material injury, safety instructions within this document are classified into three levels of hazard.



CAUTION
Indicates a potentially dangerous situation which could result in material damage, minor personal injury or non-severe personal injury.



WARNING
Indicates a potentially dangerous situation which could result in fatal injury or severe personal injury.



DANGER
This is the highest level of hazard. It indicates an imminently dangerous situation which could result in fatal injury or severe personal injury.

2.2 Intended purpose

2.2.1 General

The operator is required to make sure that the device is in a fully functional and safe condition before commencing use.

During use, the handler must comply with state stipulations; in particular:

- the industrial safety regulations that are in place.
- the regulations that are in place for the prevention of industrial accidents.

The appropriate, comprehensive guidelines for this product and/or national laws, national regulations and technological rules for starting up and operating have to be applied and fulfilled in line with the specified, intended purpose of the KaVo product.

**Note**

It is mandatory that country-specific regulations be adhered to during final decommissioning of the KaVo product.

Should you have any questions relating to the proper disposal of the KaVo product, please contact your nearest KaVo office.

2.2.2 Product-specific

The **ERGOcom 3** shows the multimedia content of external image and audio sources.

In a dental practice outside of the patient environment and together with a **KaVo Display**, it corresponds to a medical product of protection class 1.

2.3 Safety instructions

2.3.1 General



Injuries or harm caused by damaged functional components

Damaged functional components can cause personal harm or injury.

- ▶ If functional components are damaged: Stop work, remedy the problem or inform the service engineer.



Malfunction due to electromagnetic fields

This product meets all the requirements that are in effect relating to electromagnetic fields. Due to the complex interference between mobile phones and medical devices, it is not, however, possible to completely exclude the possibility of the product being affected by a functioning mobile phone.

- ▶ Refrain from using mobile phones in the practice and clinic area!
- ▶ Turn off electronic equipment, such as data storage, hearing aids etc, during operation !



Risks caused by electromagnetic fields

Electromagnetic fields may interfere with the functions of implanted systems (such as pacemakers).

- ▶ Consult the patient before treatment!

This KaVo product is not permitted for use in areas where there is a risk of explosion.

The following individuals are authorised to repair and maintain the KaVo product:

- Engineers from KaVo offices.
- Engineers working for KaVo authorised dealers, specially trained by KaVo.
- Independent engineers specially trained by KaVo.

2.3.2 Product-specific



Risk of injury due to electric shock

Electric shock

- ▶ Remove bus covers only when **ERGOcom 3** is switched off.
- ▶ Check the additionally connected cable at earthing connection M . $R = < 0.1 \text{ Ohm}$
- ▶ Observe standards EN 60601-1-1, IEC 950, EN 550022 and EN 550024 in combination with compatible displays.
- ▶ In the case of installation in rooms used for medical purposes, this must be designed in accordance with DIN/VDE 0100-710 (erection of low voltage systems).

- Do not place any additional portable multiple sockets on the floor.
- Do not connect any additional portable multiple sockets or extension cables to the system.
- Do not connect any electrical equipment that is not part of the system.

3 Product description

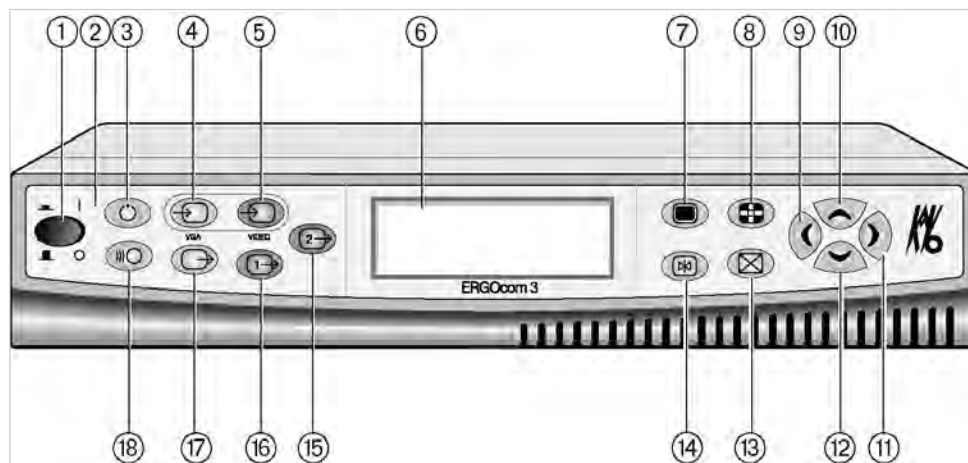
3.1 Product name

ERGOcom 3 is supplied in classic, comfort and excellence models. These models differ with regard to the components built in, among other things.

Model	Components
classic	No display interface No radio master (ERGOremote)
comfort	With display interface No radio master (ERGOremote)
excellence	With display interface With radio master (ERGOremote)

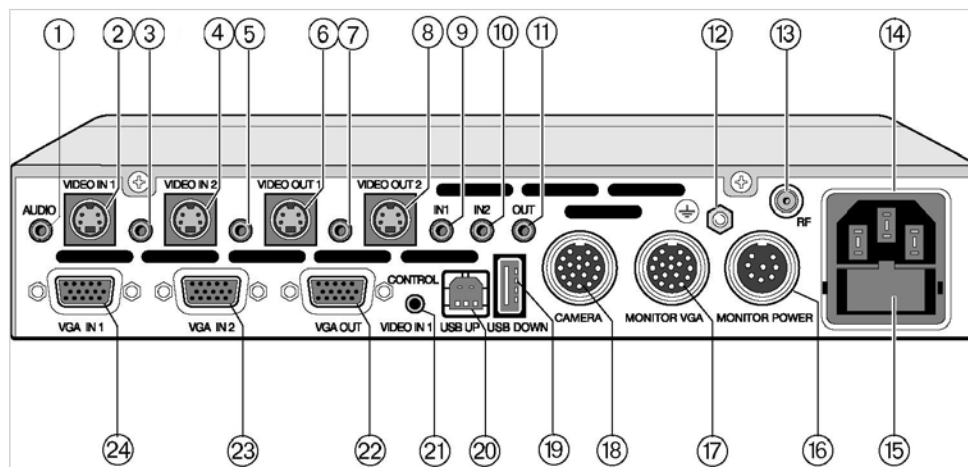
Every component can be individually upgraded. This is why operation is structured not by the models, but by the integrated components.

3.2 ERGOcom 3



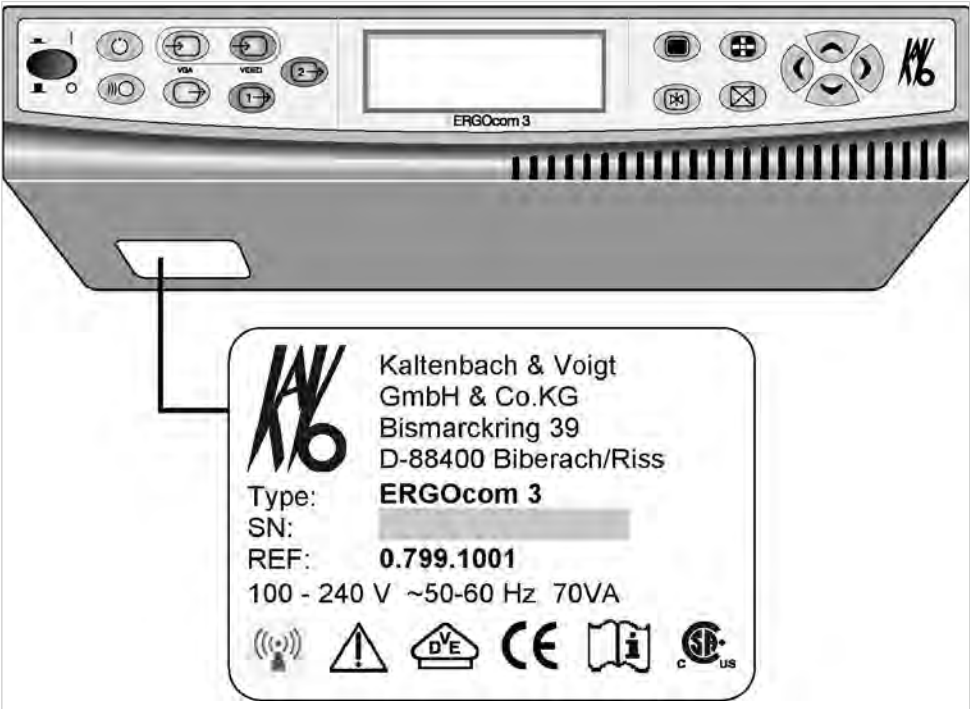
- | | |
|--------------------------------------|--|
| ① Main switch | ⑩ Navigation up |
| ② Standby LED, blue | ⑪ Navigation right |
| ③ Standby | ⑫ Navigation down |
| ④ Button, VGA In 1 / In 2 | ⑬ Delete image / images |
| ⑤ Button, Video Camera / In 2 / In 3 | ⑭ Freeze |
| ⑥ Status display | ⑮ Button, Video Out 2 |
| ⑦ OSD menu | ⑯ Button, Video Out 1 |
| ⑧ Quad mode | ⑰ Button, VGA Out |
| ⑨ Navigation left | ⑱ Channel Selection/Learn Channel Mode |

3.3 Connections



- | | |
|------------------|---|
| ① Audio In 1 | ⑬ Aerial connection |
| ② Video In 1 | ⑭ Mains connection |
| ③ Audio In 2 | ⑮ Mains fuse |
| ④ Video In 2 | ⑯ Power supply, monitor |
| ⑤ Audio Out 1 | ⑰ Display 1 connection |
| ⑥ Video Out 1 | ⑱ Camera connection |
| ⑦ Audio Out 2 | ⑲ USB downstream |
| ⑧ Video Out 2 | ⑳ USB upstream |
| ⑨ Audio VGA In 1 | ㉑ Camera cradle / footswitch control,
Video In 1 |
| ⑩ Audio VGA In 2 | ㉒ VGA Out |
| ⑪ Audio VGA Out | ㉓ VGA In 2 |
| ⑫ Earthing point | ㉔ VGA In 1 |

3.4 Rating plate



SN:	Serial number
REF	Material number
Type:	Device type ERGOcom 3
	HF emission
	Note: consult accompanying documents.
	VDE identification
	CE identification
	Consult instructions for use
	CSA identification

3.5 Technical data

ERGOcom 3

Weight	3 kg
--------	------

Housing dimensions

Width	260 mm
Depth	260 mm
Height	46.5 mm

Electricity supply

AC voltage	100 -240 V
Rated frequency	50 - 60 Hz
Power consumption	70 VA

Ambient conditions

Permissible operating temperature	0 - 40° C
-----------------------------------	-----------

Connection of interoral camera

Type	BF
------	----

Compatible displays

Max. power consumption	35 VA
------------------------	-------

4 Start-up

4.1 Start-up

4.1.1 Start-up



Malfunction due to incorrect use

An increase in operating temperature due to poor ventilation can lead to malfunction or failure.

- ▶ Do not set up near to a heat source.
- ▶ Do not cover the product's vents. A minimum gap of 50 mm must be left in front of and behind the unit.
- ▶ Operate the product only when it is horizontal.

- ▶ Connect the **ERGOcom 3** to a properly earthed power source that is protected by a fuse.

4.1.2 Start-up, radio receiving

Select channel

Here, up to 38 channels can be set. A channel determines the assignment of a specific **ERGOremote** to a specific **ERGOcom 3**.

Here, it is expedient to select a channel corresponding to the treatment room: e.g. channel 1 is used for treatment room 1.



- ▶ Hold down the Channel Selection / Learn Channel Mode button for < 2 seconds. The channel selected appears on the status display.



Note

If there is no input for 8 seconds, the **ERGOcom 3** switches back to operational mode.



- Select the required channel using navigation.



Note

If there is no input for 8 seconds, the **ERGOcom 3** switches back to operational mode.

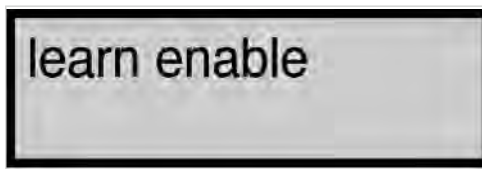
This saves the last setting on the status display.

Learn channel

The **ERGOREMOTE**'s radio code is synchronised with the channel configured on **ERGOcom 3**.



- Hold down the Channel Selection button on **ERGOcom 3** for more than 2 seconds.
Learn Channel Mode appears on the status display.



Note

If the channels do not synchronise within approx. 30 seconds, **ERGOcom 3** switches back to operational mode.



- Hold down the Wake Up/Learn button on the **ERGOREMOTE** for more than 3 seconds.
The green LED will be lit for 3 seconds to show that synchronisation is complete.

The green LED will flash to indicate that radio communication has not been set up.

4.1.3 Start-up, USB drive

The **ERGOcom 3** with a display interface (equivalent to comfort or excellence level) has a built-in USB 2.0 drive. This drive shares volatile and non-volatile memory. The non-volatile memory then retains the information when the **ERGOcom 3** is switched off. The logos are stored here automatically. The images are automatically stored in the volatile memory. When the **ERGOcom 3** is switched off, these images are deleted.

See also: 5.3.6 Generate still, Page 41

The images contain the following name syntax: Bildxx_y.bmp.

- xx = image number 01 to 99
- y = image number 1 to 4

A maximum of 8 images may be saved. When a ninth image is saved, image 1 is automatically overwritten.

A KaVo company logo is stored on the USB drive at the time of delivery.

Connect PC

Prerequisite

- Windows XP (Service Pack 1) or Windows 2000 must be installed on the PC.
- The PC must have a free USB 2 interface.



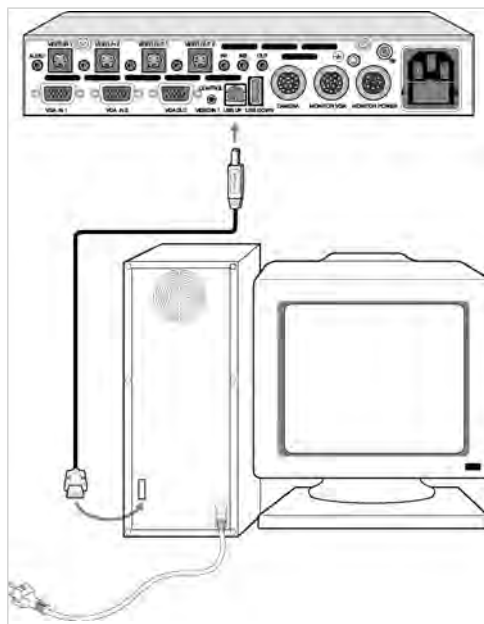
- Install Windows patch.

Note

When installing the **KaVo Device Interface System** (using the enclosed CD), the USB patch is installed automatically.

If the **KaVo Device Interface System** is not installed, the USB patch can be installed later from the CD D:\WINXP or downloaded and installed from the Microsoft homepage www.microsoft.com.

- Insert the USB cable to the **ERGOcom 3** and the PC.
The connection is made between the USB drive and the PC.



Install own logo/image

- Convert the logo/image into a 720 x 576 dpi image format using image processing software.

- ▶ Save this logo/image in bitmap format, giving it the filename USERLOGO.bmp.
- ▶ Copy the file USERLOGO.bmp to the USB drive using the drag&drop function.

The USB drive reports to the PC using the name ERGOCOM3.

**Note**

The **ERGCom 3** must not be switched off during transfer of the image (takes approx. 20 seconds).

You can set which logo/image is to be displayed in the OSD menu display interface.

See also: 5.4.5 Menu point, other, Page 49

5 Operation

5.1 Operation, general

5.1.1 Switch on



- ▶ Switch on main switch.
These indicator lamps appear on the status display after open-shop testing:



Note

If the device is ready for operation, the current monitor image source is shown in the display.

5.1.2 Standby



- ▶ Press the standby button.
The standby LED lights up (blue).
The status display and display are switched off and all device settings are retained.
- ▶ Press the standby button once again to leave Standby mode.



Note

This energy saving mode extends the service life of the status display and display.

5.1.3 OSD menu, call ERGOcom 3

In this menu, all settings can be defined for operation of the product.



- ▶ Switch on main switch.
- ▶ While the status display shows "ERGOcom 3", activate the OSD menu until the first menu point appears.

The OSD menu ERGOcom 3 is divided into 7 menu points:

- Interface/wlink
- Display-Format
- RFpower

- System camera
- Camera holder
- USBpict.store
- Store format
- Mouse Z-Axis
- Firmware version
- Factory reset?

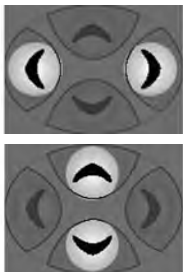


Note
The last 6 menu points are reserved for engineers.



- ▶ Press the OSD menu button once again in order to return to operationalmode.

5.1.4 OSD menu, operate ERGocom 3



- ▶ Select the required menu point using navigation.
When you leave a menu point, its status display will be saved automatically.
- ▶ Select the required setting using navigation.



Note
If there are no options available for a menu point, this navigation offers no functions.

5.1.5 Menu points

Interface ? wlink ok ok	Interface? Represents component display interface Material number 1.002.9482. wlink represents component radio master Material number 1.003.1318. OK represents the installation of the relevant option. Missing components can be added at any time.
Display - Format: SXGA/ 60 HZ	Setting of resolution and image frequency for the display. SXGA/50 Hz or SXGA/60 Hz is 19" (1280 x 1024 dpi) XGA/50 Hz or XGA/60 Hz is 15" (1024 x 768 dpi) To ensure optimum image display quality, the same display size (15" or 19") is to be used both in the cabinet area and on the treatment device.
RF power: 00	00 is the default setting for 0 dBm transmitting power. At the same time, this is the maximum permitted transmitting power in the USA. 01 represents 6 dBm transmitting power. This is the maximum permitted transmitting power in Europe. If the transmitting power is not reliably sufficient, the transmitting power can be increased using this.

System camera: ERGOCam 4	Various setting parameters for image functions are offered on account of the various technical systems in the intraoral cameras ERGOCam 3 and ERGOCam 4 offered by KaVo. For optimum setting, the KaVo intraoral camera built into the treatment device should be selected here.
Camera holder on	On: When the internal / external camera is taken out of the holder, the camera image is automatically displayed on the monitor. Off: Automatic operations are not available. The camera image has to be selected manually.
USB pict. store on	On: When saving in Video mode, the images are saved to the USB drive ERGOCOM3. Off: Nothing is saved to the USB drive ERGOCOM3.
Store format: BMP	Determining the image format in which the images are to be saved to the USB drive. BMP stands for bitmap and is supported by all popular image processing programs. The current YUV format is converted to BMP beforehand (save time approx. 8 seconds). YUV stands for video format and is supported by only a few programs. However, this format is saved considerably more quickly (save time approx. 2 seconds).
Mouse Z-Axis on	Here, when ERGOREMOTE is used, the use of the Z-Axis of the joystick is determined. On: Clicking / double-clicking possible with the joystick. Off: Clicking / double-clicking not possible with the joystick.
Firmware Version 1.1.00	Display of Firmware version number of ERGocom 3 Mainboard.
Factory reset ? 	Reset all menu points to factory settings. CAUTION: VGA IN, VGA OUT, VIDEO IN and VIDEO OUT will also be reset to factory settings if you select this command. The factory settings are restored using Navigation up.

5.2 Operation, no display interface (classic)

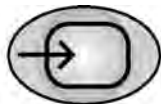
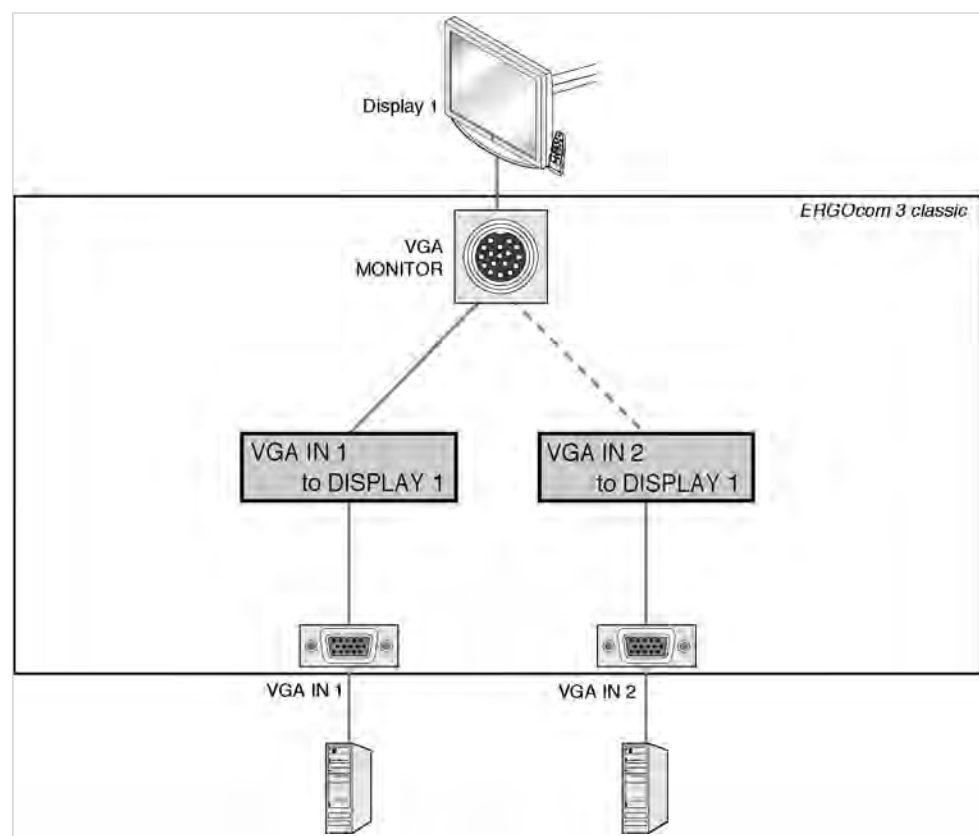
Equivalent to **ERGOcom 3** , classic level.

In all subsequent descriptions, please note the following: to view the selected option on Display 1, the relevant source must be active.

5.2.1 Operational mode

In operational mode, it is possible to switch between VGA or VIDEO image sources, including audio, shown on KaVo Display 1.

VGA IN - set image source

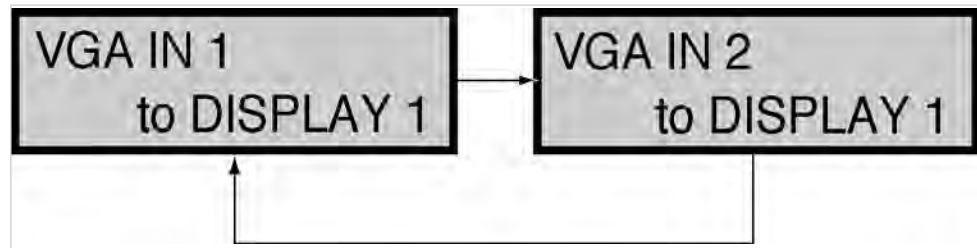


VGA



VGA

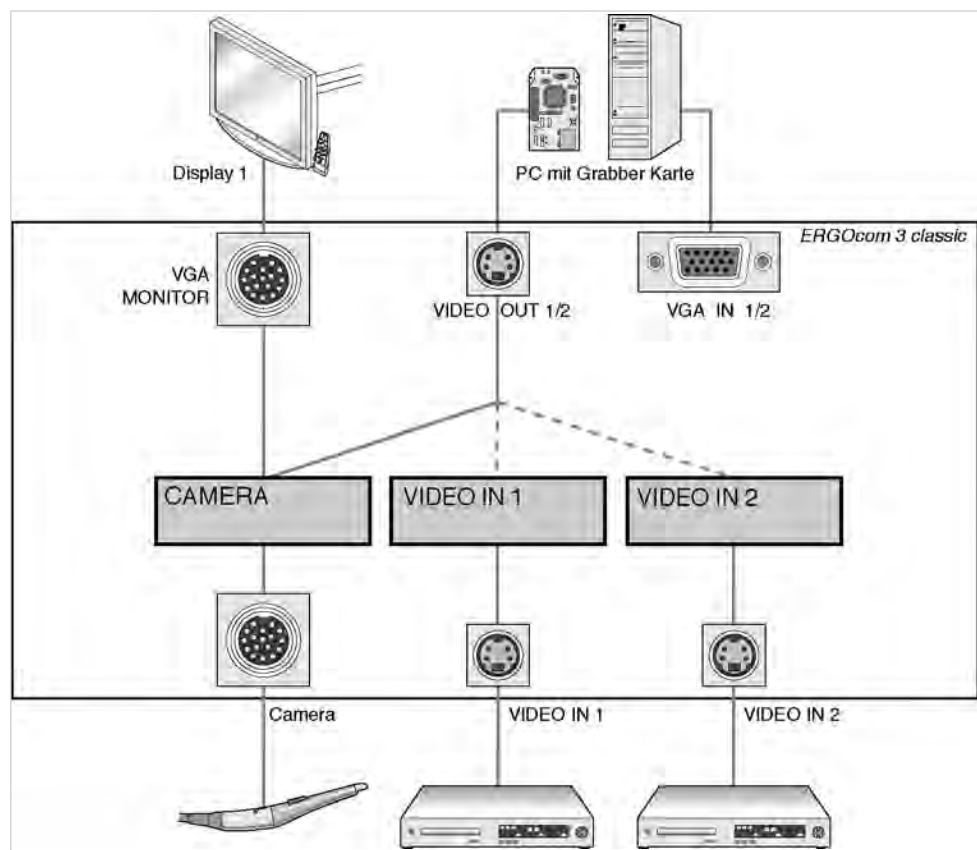
- ▶ Press the VGA IN button.
If a VIDEO image source was selected before, the last VGA IN image source selected will be shown in the status display.
- ▶ Select the required VGA input by pressing the VGA IN button.



See also:

5.4.5 Menu point, other, Page 49

VIDEO IN - set image source



Prerequisite

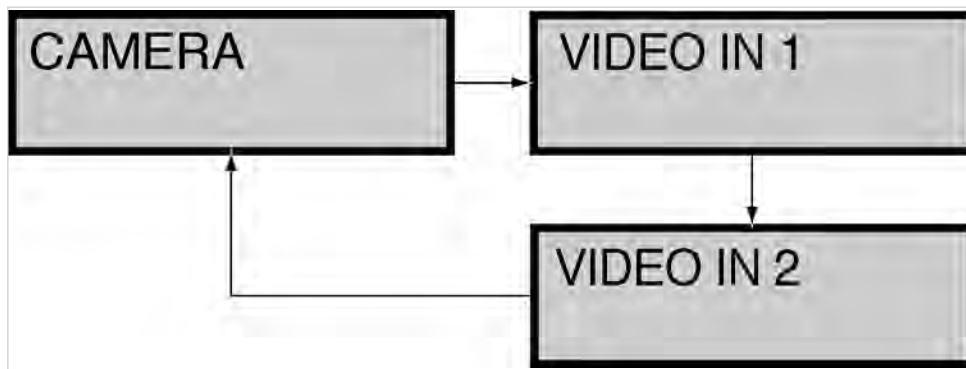
- A grabber card has to be installed in the PC in order to show video sources on Display 1.
- VIDEO OUT 1 or VIDEO OUT 2 has to be connected to the grabber card.



- ▶ Press the VIDEO IN button.
If a VGA image source was selected before, the last VIDEO IN image source selected will be shown in the status display.

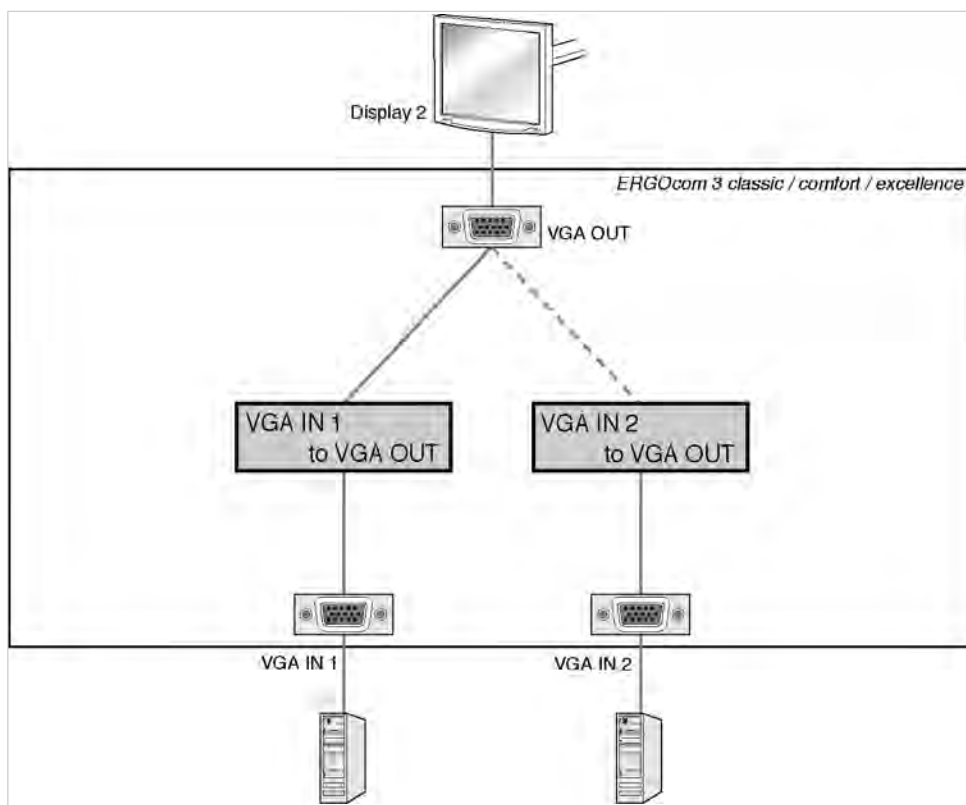


- Select the required VIDEO input by pressing the VIDEO IN button.



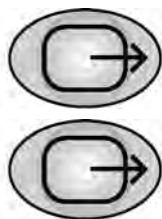
See also: 5.4.5 Menu point, other, Page 49

5.2.2 VGA OUT - set image source

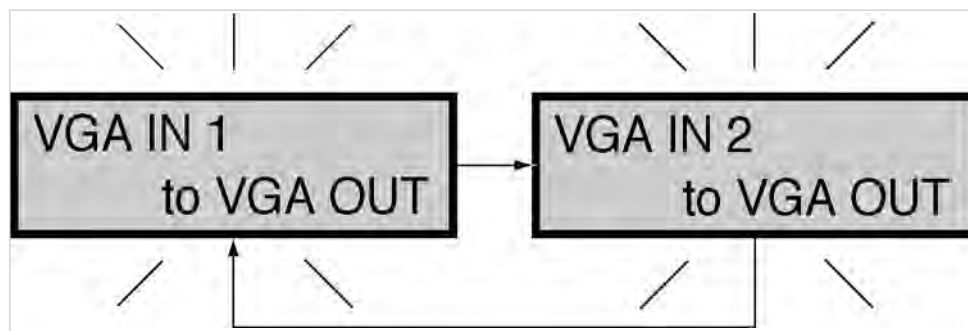


- Hold down the VGA OUT button for < 2 seconds.
The last image source selected is shown in the status display. The status display returns to operational mode after 5 seconds.

See also: 5.2.1 Operational mode, Page 27



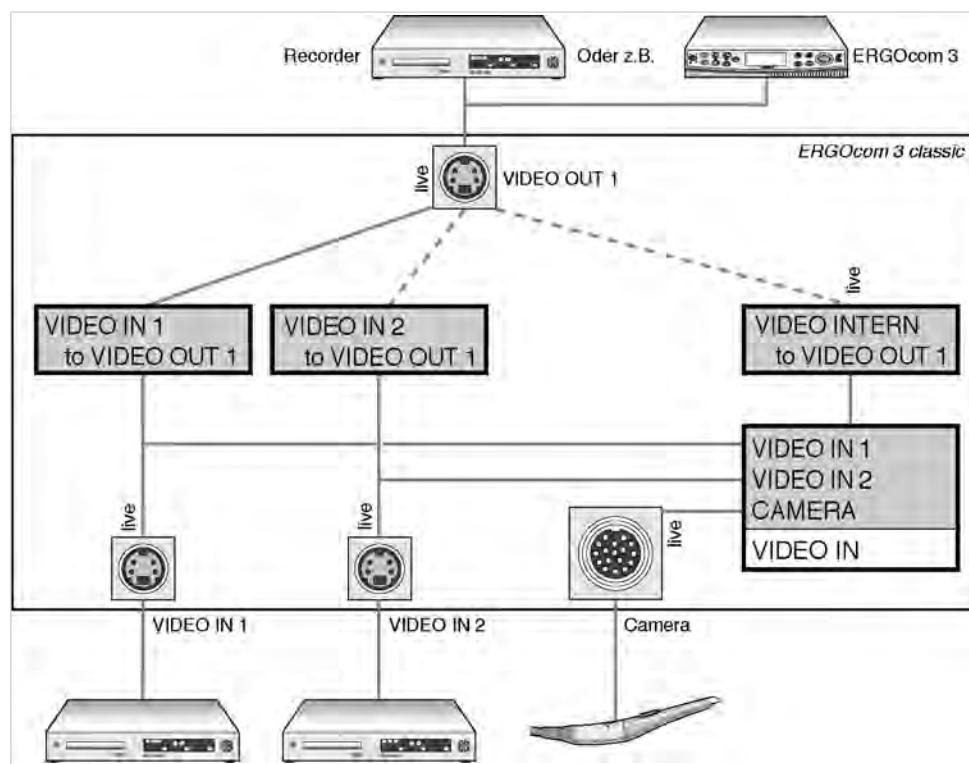
- ▶ Hold down the VGA OUT button for > 2 seconds.
The status display flashes and setting mode is activated.
- ▶ Use VGA OUT to select the required VGA input.

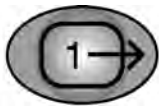


Note

If there is no input for 8 seconds, the **ERGOcom 3** switches back to operational mode.
This saves the last setting on the status display.

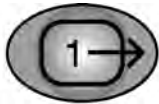
5.2.3 VIDEO OUT 1 - set image source



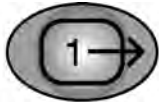


- ▶ Hold down the VIDEO OUT 1 button for < 2 seconds.
The last image source selected is shown in the status display. The status display returns to operational mode after 5 seconds.

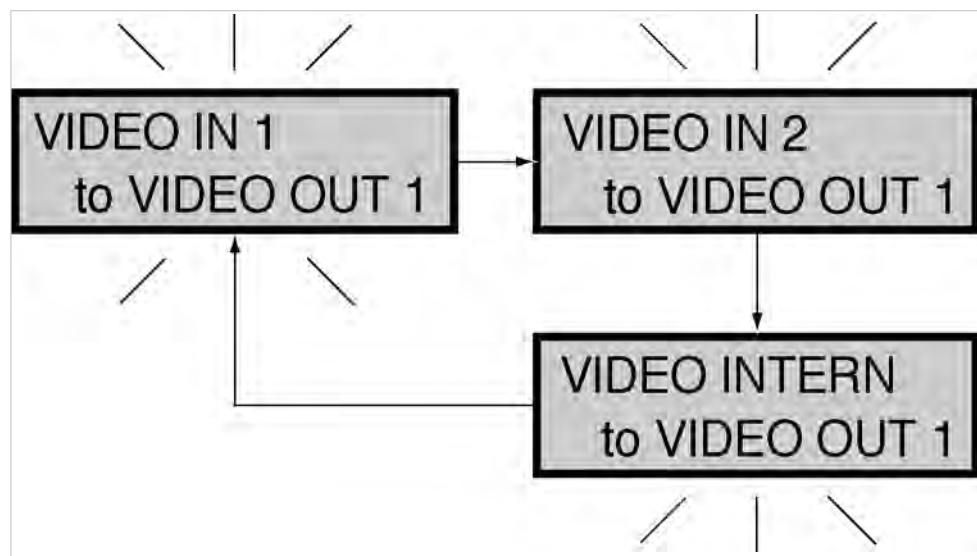
See also: 5.2.1 Operational mode, Page 27



- ▶ Hold down VIDEO OUT 1 for > 2 seconds.
The status display flashes and setting mode is activated.



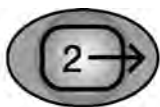
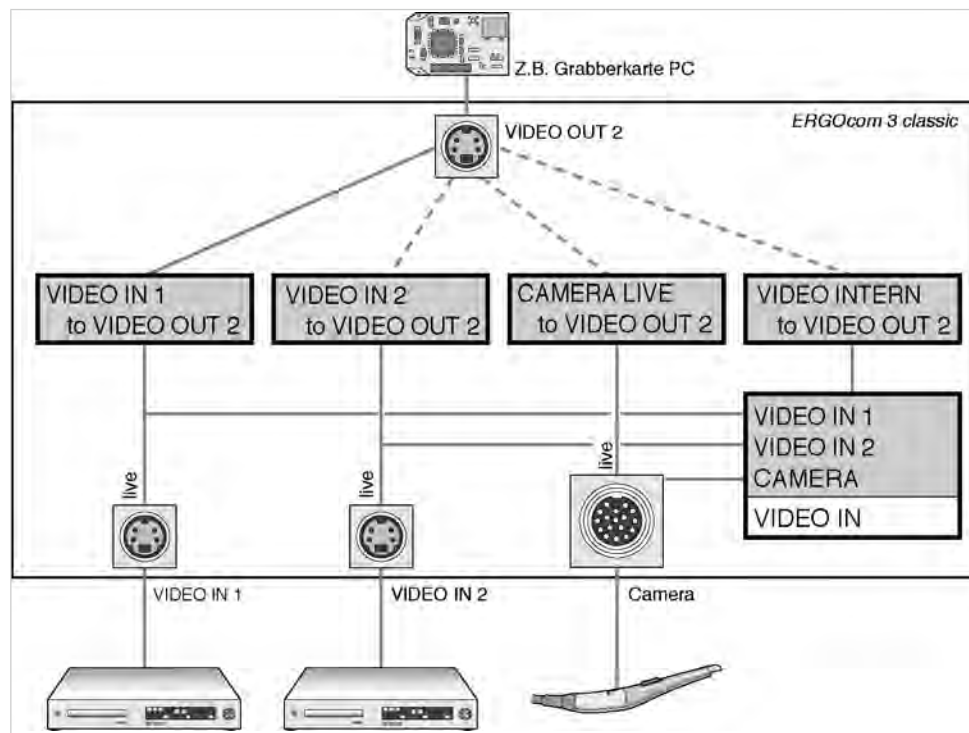
- ▶ Select the required VIDEO input by pressing the VIDEO OUT 1 button.



Note

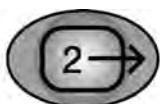
If there is no input for 8 seconds, the **ERGOcom 3** switches back to operational mode.
This saves the last setting on the status display.

5.2.4 VIDEO OUT 2 - set image source

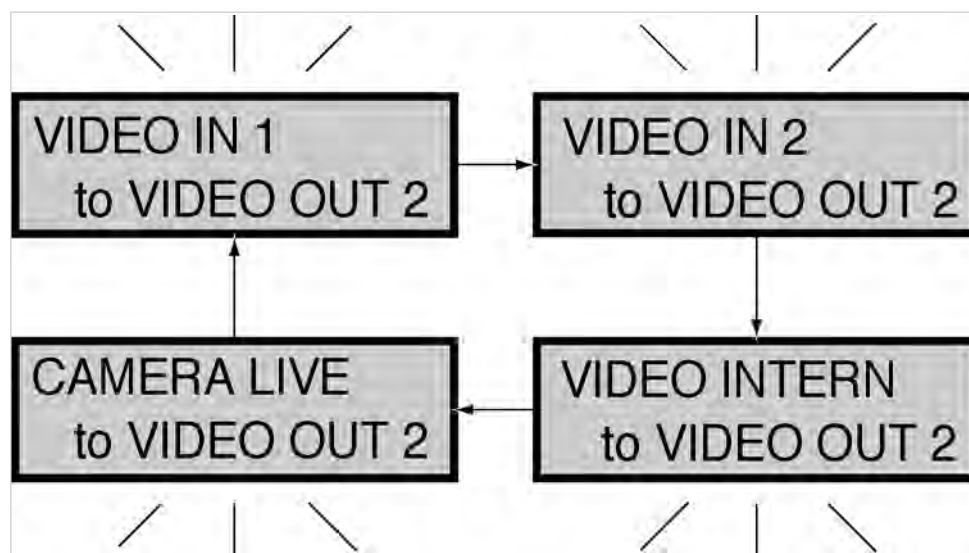


- ▶ Hold down the VIDEO OUT 2 button for < 2 seconds.
The last image source selected is shown in the status display. The status display returns to operational mode after 5 seconds.

See also: 5.2.1 Operational mode, Page 27



- ▶ Hold down the VIDEO OUT 2 button for > 2 seconds.
The status display flashes and setting mode is activated.
- ▶ Select the required VIDEO input by pressing the VIDEO OUT 2 button.



Note

If there is no input for 8 seconds, the **ERGOcom 3** switches back to operational mode.
This saves the last setting on the status display.

5.2.5 Generate still

Prerequisite

- A video signal is shown on Display 1.
- The **ERGOcom 3** is connected to a PC fitted with a grabber card by means of a USB cable.
- On this PC, the KaVo **Display Interface System** software is installed.



- ▶ Hold down the footswitch for < 2 seconds.
The Generate still command is passed on to the PC.

5.2.6 Save still

Prerequisite

- The **ERGOcom 3** is connected to a PC fitted with a grabber card by means of a USB cable.
- On this PC, the KaVo **Display Interface System** software is installed.



- ▶ Hold down the footswitch for > 2 seconds.
The Generate still command is passed on to the PC.

5.2.7 Audio signals

The audio signals will be linked synchronously to the relevant image signals.

5.3 Operation, with display interface (comfort/excellence)

Equivalent to **ERGCom 3**, comfort or excellence level.

In addition to excellence level, instructions for operation for the radio master (**ERGOrremote**) can be found in the separate UI.

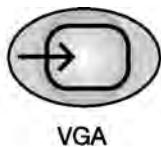
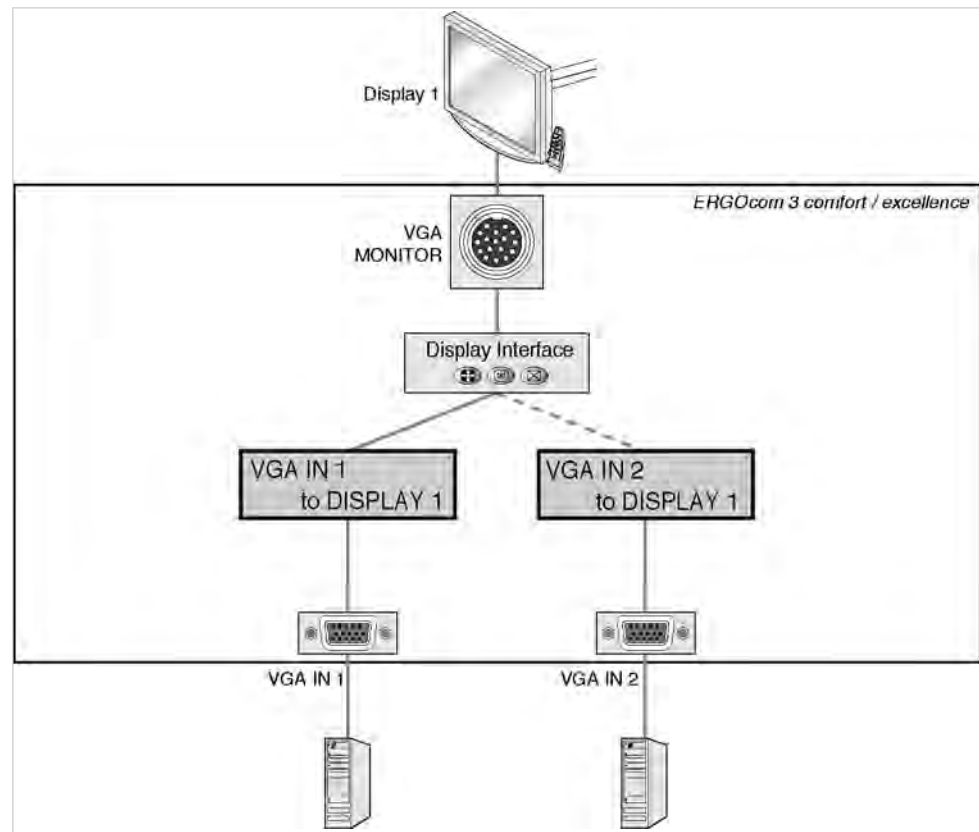
See also: UIERGOrremote

In all subsequent descriptions, please note the following: to view the selected option on Display 1, the relevant source must be active.

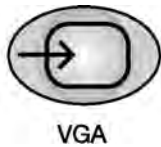
5.3.1 Operational mode

In operational mode, it is possible to switch between VGA or VIDEO image sources, including audio, shown on KaVo Display 1.

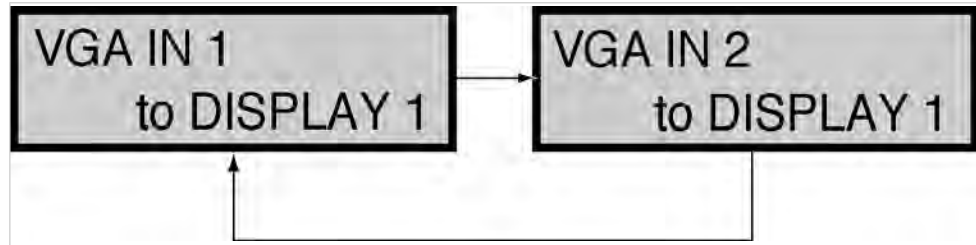
VGA IN - set image source



- Press the VGA IN button.
If a VIDEO image source was selected before, the last VGA IN image source selected will be shown in the status display.



- Select the required VGA input by pressing the VGA IN button.



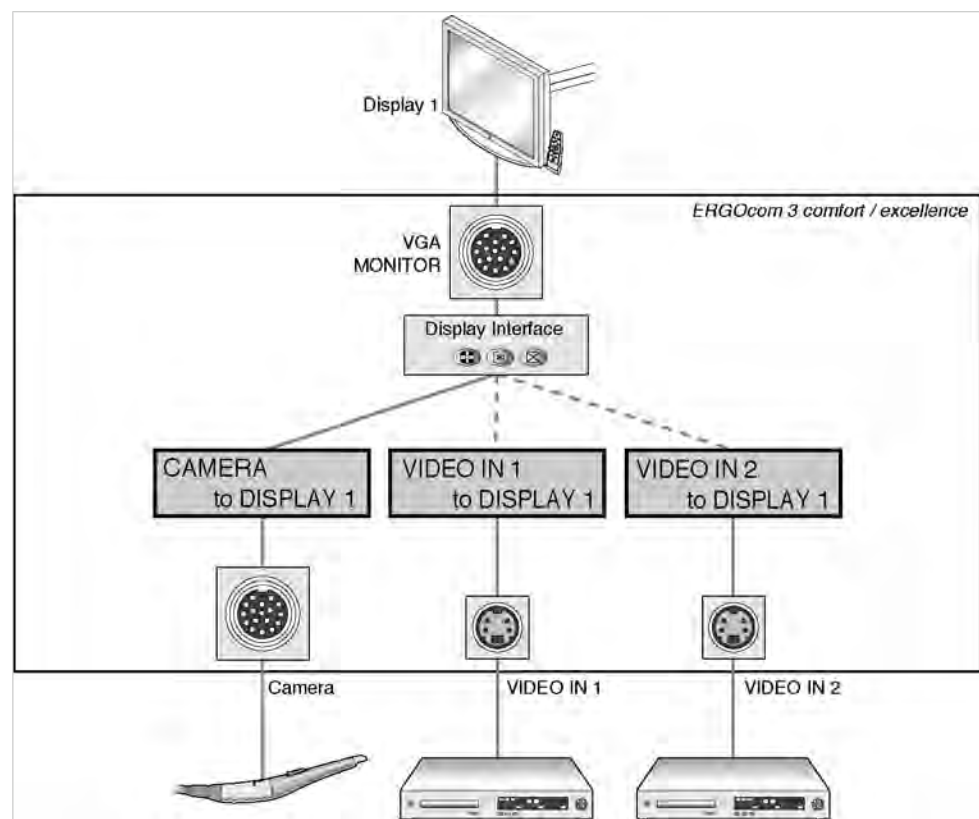
Note

If no image source is connected to VIDEO IN 1/2, the logo set in the OSD menu display interface will be displayed.

See also:

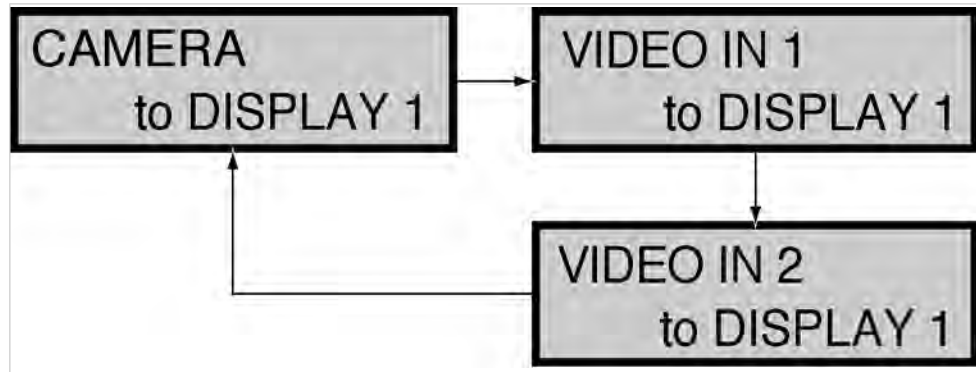
5.4.5 Menu point, other, Page 49

VIDEO IN - set image source



- Press the VIDEO IN button.
If a VGA image source was selected before, the last VIDEO IN image source selected will be shown in the status display.

- Select the required VIDEO input by pressing the VIDEO IN button.



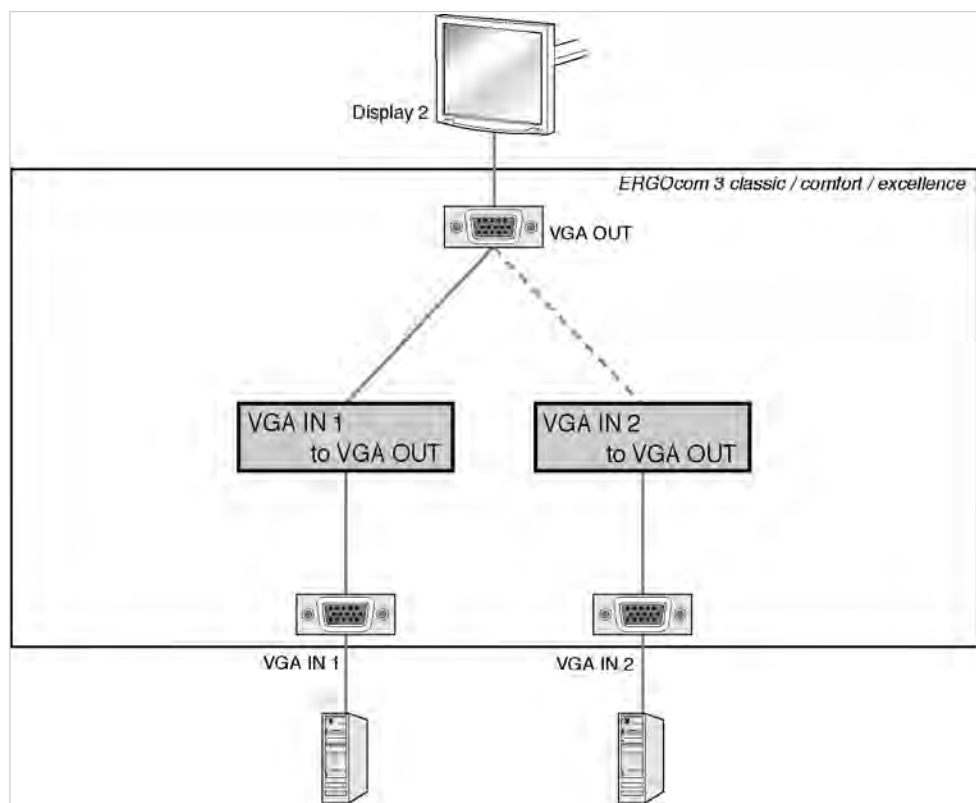
Note

If no image source is connected to VIDEO IN 1/2, the logo set in the OSD menu display interface will be displayed.

See also:

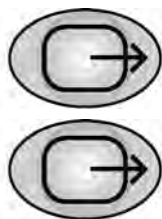
5.4.5 Menu point, other, Page 49

5.3.2 VGA OUT - set image source

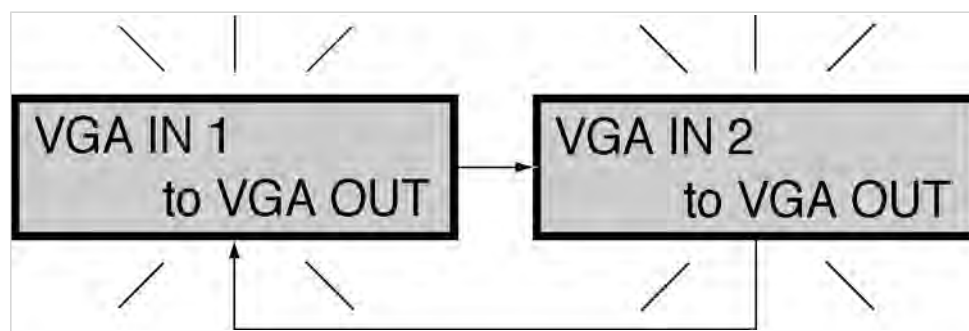


- Hold down the VGA OUT button for < 2 seconds.
The last image source selected is shown in the status display. The status display returns to operational mode after 5 seconds.

See also: 5.2.1 Operational mode, Page 27



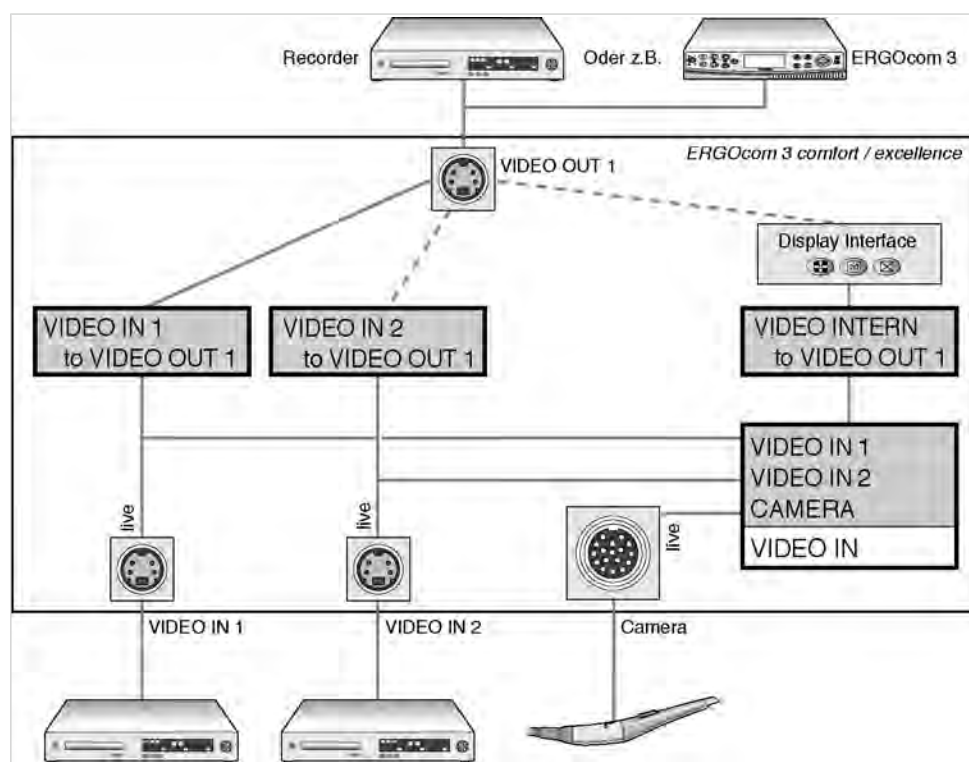
- ▶ Hold down the VGA OUT button for > 2 seconds.
The status display flashes and setting mode is activated.
- ▶ Use VGA OUT to select the required VGA input.

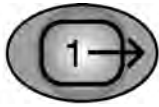


Note

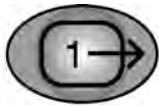
If there is no input for 8 seconds, the **ERGOcom 3** switches back to operational mode.
This saves the last setting on the status display.

5.3.3 VIDEO OUT 1 - set image source

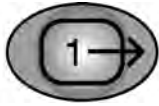




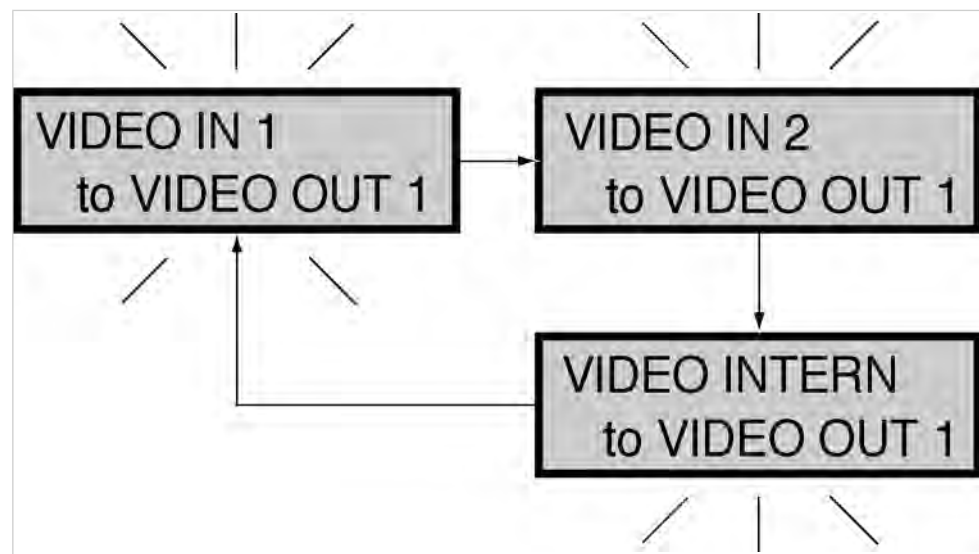
- ▶ Hold down the VIDEO OUT 1 button for < 2 seconds.
The last image source selected is shown in the status display. The status display returns to operational mode after 5 seconds.



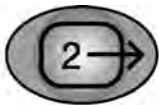
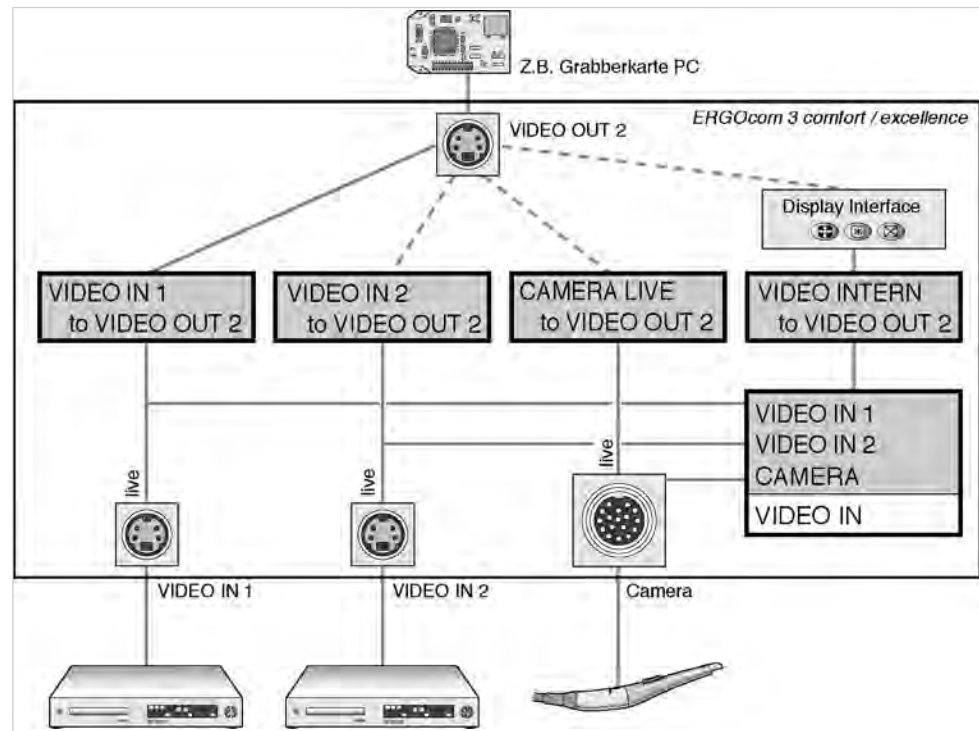
- ▶ Hold down VIDEO OUT 1 for > 2 seconds.
The status display flashes and setting mode is activated.



- ▶ Select the required VIDEO input by pressing the VIDEO OUT 1 button.

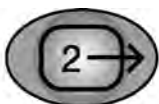


5.3.4 VIDEO OUT 2 - set image source

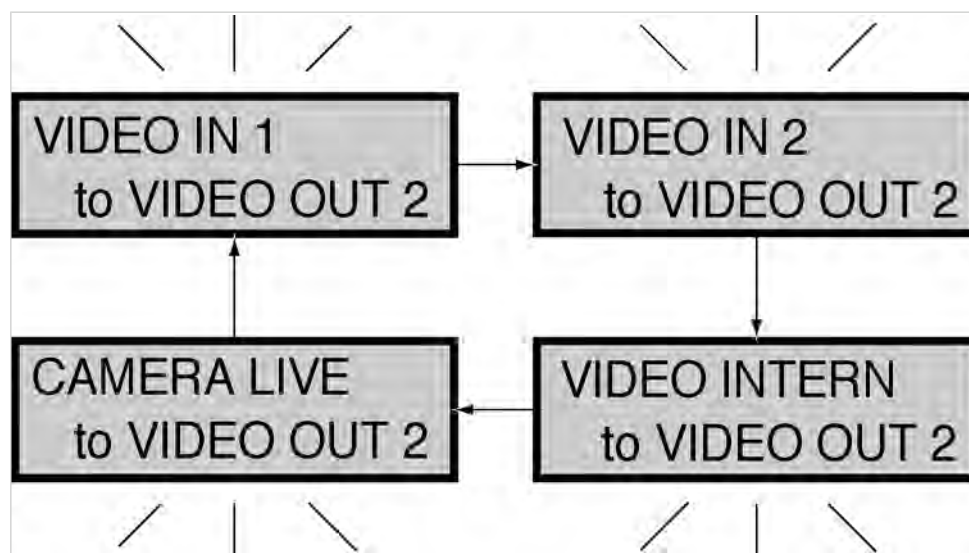


- ▶ Hold down the VIDEO OUT 2 button for < 2 seconds.
The last image source selected is shown in the status display. The status display returns to operational mode after 5 seconds.

See also: 5.2.1 Operational mode, Page 27



- ▶ Hold down the VIDEO OUT 2 button for > 2 seconds.
The status display flashes and setting mode is activated.
- ▶ Select the required VIDEO input by pressing the VIDEO OUT 2 button.



Note

If there is no input for 8 seconds, the **ERGOcom 3** switches back to operational mode.
This saves the last setting on the status display.

5.3.5 Audio signals

The audio signals will be linked synchronously to the relevant image signals.

5.3.6 Generate still

Prerequisite

A video signal is shown on Display 1.



- ▶ Hold down the Freeze button for < 2 seconds.
A still is generated on Display 1 from the current video image.

or



- ▶ Hold down the footswitch for < 2 seconds.
A still is generated on Display 1 from the current video image.
- ▶ Press the Freeze button again to return to live image display and activate the next image (1-4) as a live image.

or

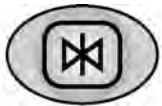


- ▶ Press the footswitch again to return to live image display and activate the next image (1-4) as a live image.

5.3.7 Save still

Prerequisite

- The **ERGOcom 3** is connected to a PC fitted with a grabber card by means of a USB cable.
- On this PC, the KaVo **Display Interface System** software is installed.



- ▶ Hold down the Freeze button for > 2 seconds.
The successful save is indicated on Display 1 with save.

or



- ▶ Hold down the footswitch for > 2 seconds.
The successful save is indicated on Display 1 with save.



Note

Saving the active image (image number is white) is possible in Full Screen and Quad mode for the display.
The still is saved on the PC and on the internal **ERGOcom 3** USB drive as long as on is selected for USBpict.store.

See also: 5.1.5 Menu points, Page 25

5.3.8 Change display view

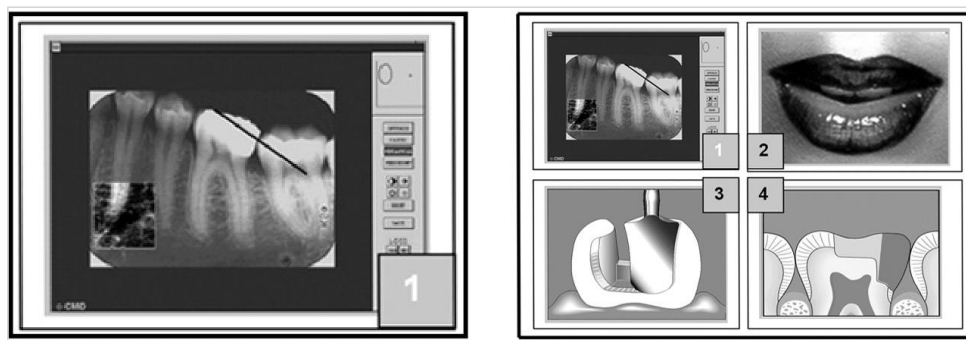
Prerequisite

A video signal is shown on Display 1.

Images on Display 1 can be toggled between Full Screen mode and Quad mode.



- ▶ Press the Full Screen /Quad Mode button.



Note

The image number of the active image is shown in white.



- ▶ Press the Full Screen / Quad Mode button again to return to Full Screen mode.

5.3.9 Select image

Prerequisite

The image selected must be a still.



- ▶ Select the required image using the 4 navigation buttons.
The still selected is retained as a still.



- ▶ Press the Freeze button.
The still selected is deleted or turned into a live image.

or



- ▶ Press the footswitch.
The still selected is deleted or turned into a live image, and the next image number is selected automatically.



Note

If this function is not required, the Freeze button has to be used for image selection on the ERGOcom 3.

5.3.10 Delete image / images



Note

Possible in Full Screen and Quad mode.

ERGOcom 3

Prerequisite

The image selected must be a still.



- ▶ Hold down the Delete image / images button for < 2 seconds.
The still is deleted and the logo selected in the OSD menu display interface is shown.

See also:

5.4.5 Menu point, other, Page 49



- ▶ Hold down the Delete image / images button for > 2 seconds.
All 4 stills are deleted and the logo selected in the OSD menu display interface is shown.

Multi footswitch control

Prerequisite

4 stills are generated using the multi footswitch control.

See also: 5.3.6 Generate still, Page 41



- ▶ Press the footswitch again.
Display 1 shows the prompt "Delete all images?"



- ▶ Hold down the footswitch for > 2 seconds to delete all 4 stills.
The logo set in the OSD menu display interface is inserted.

or



- ▶ Hold down the footswitch for < 2 seconds to switch image 1 to a live image.

5.3.11 Change image source

Prerequisite

A still has to be generated.

See also: 5.3.6 Generate still, Page 41



- ▶ Put the camera in the holder.
- ▶ Press the footswitch.
The **ERGOcom 3** switches to the image source selected before the camera was removed.

5.4 Operation, OSD menu display interface

The overview diagrams were structured according to the type of image source and the connected function:

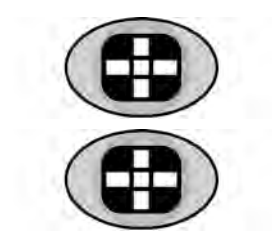
VGA main menu	Overview of main menu with VGA IN 1 or VGA IN 2 image source.
VIDEO main menu	Overview of main menu with CAMERA, VIDEO IN 1 or VIDEO IN 2 image source.
Menu point, other	This menu point is the same for all image sources.

5.4.1 Call OSD menu display interface

Prerequisite

The image source for which the display settings are to be changed must be selected.

See also:
5.2.1 Operational mode, Page 27
5.3.1 Operational mode, Page 35



- ▶ Press the OSD menu button.
The OSD menu display interface is inserted on Display 1.
- ▶ Press OSD menu again to leave the menu.

5.4.2 Operate OSD menu display interface

Prerequisite

The OSD menu display interface was called.

Navigation	Function
	Scroll in the current menu window. The menu point selected will have a coloured background.
	Select the menu point or setting to be changed. The setting that can be changed is white.
	Leave the selected menu point or setting.

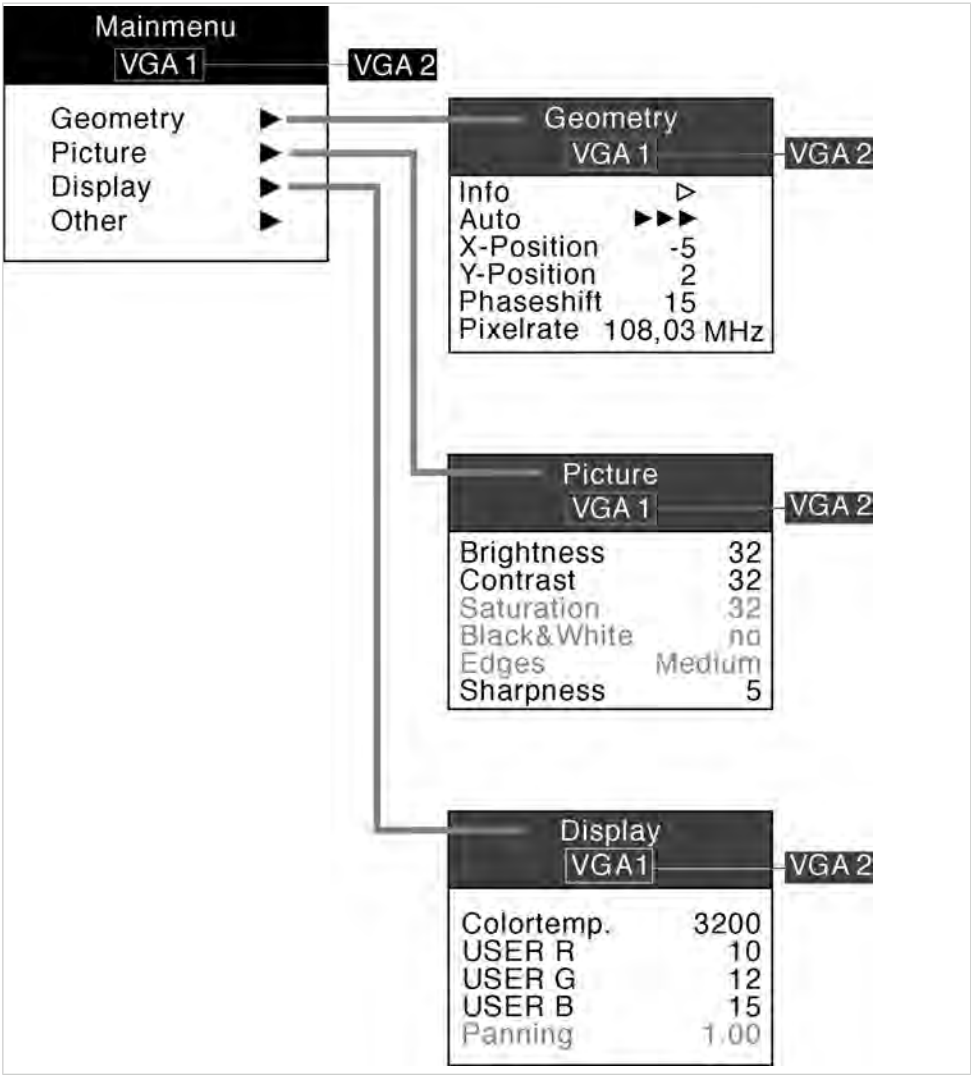
Navigation	Function
	Change settings.
	Save changed setting.
	Reset the selected menu point.

5.4.3 VGA main menu

There is a separate main menu for every VGA IN image source. This allows the settings on Display 1 to be defined and saved for every image source.

**Note**

The requisite explanations of the individual menu points or settings are inserted directly on Display 1.

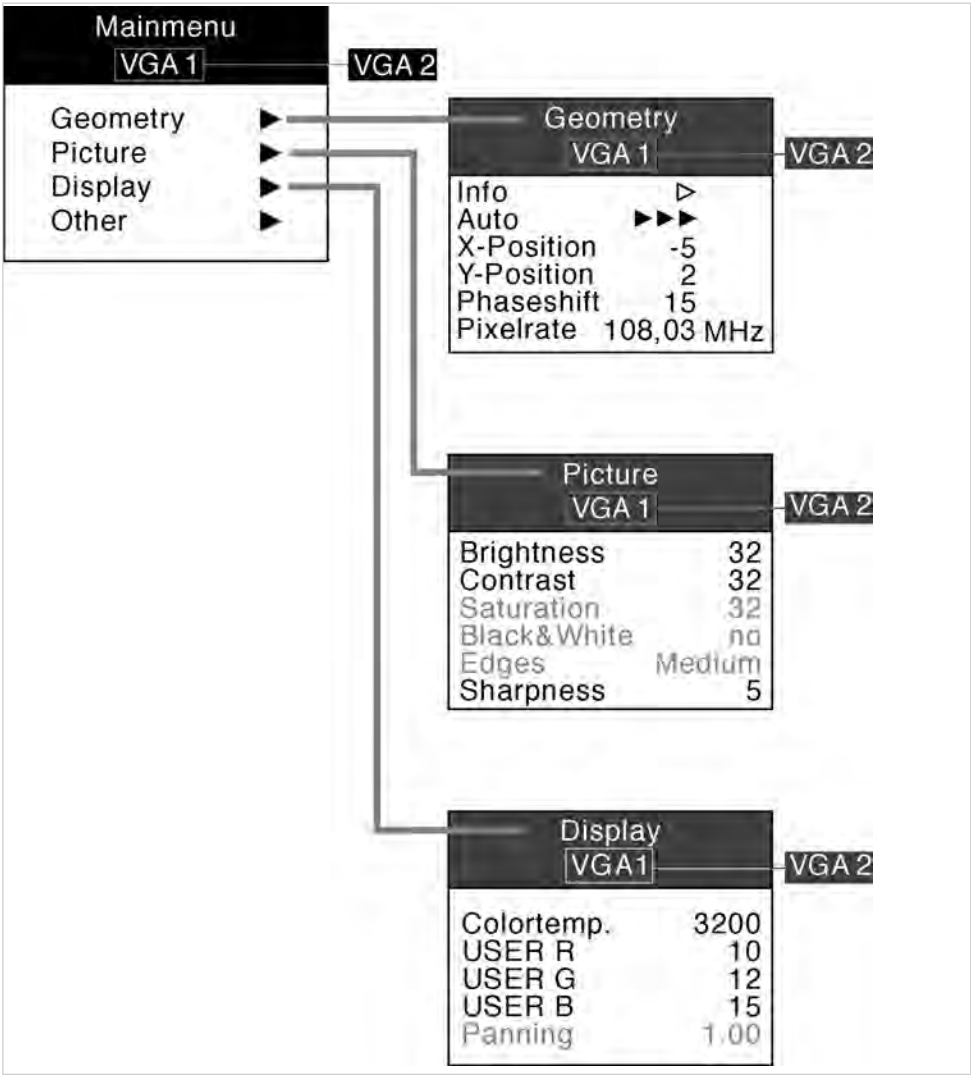


5.4.4 VIDEO main menu

There is a separate main menu for every VIDEO IN image source. This allows the settings on Display 1 to be defined and saved for every image source.



Note
The requisite explanations of the individual menu points or settings are inserted directly on Display 1.

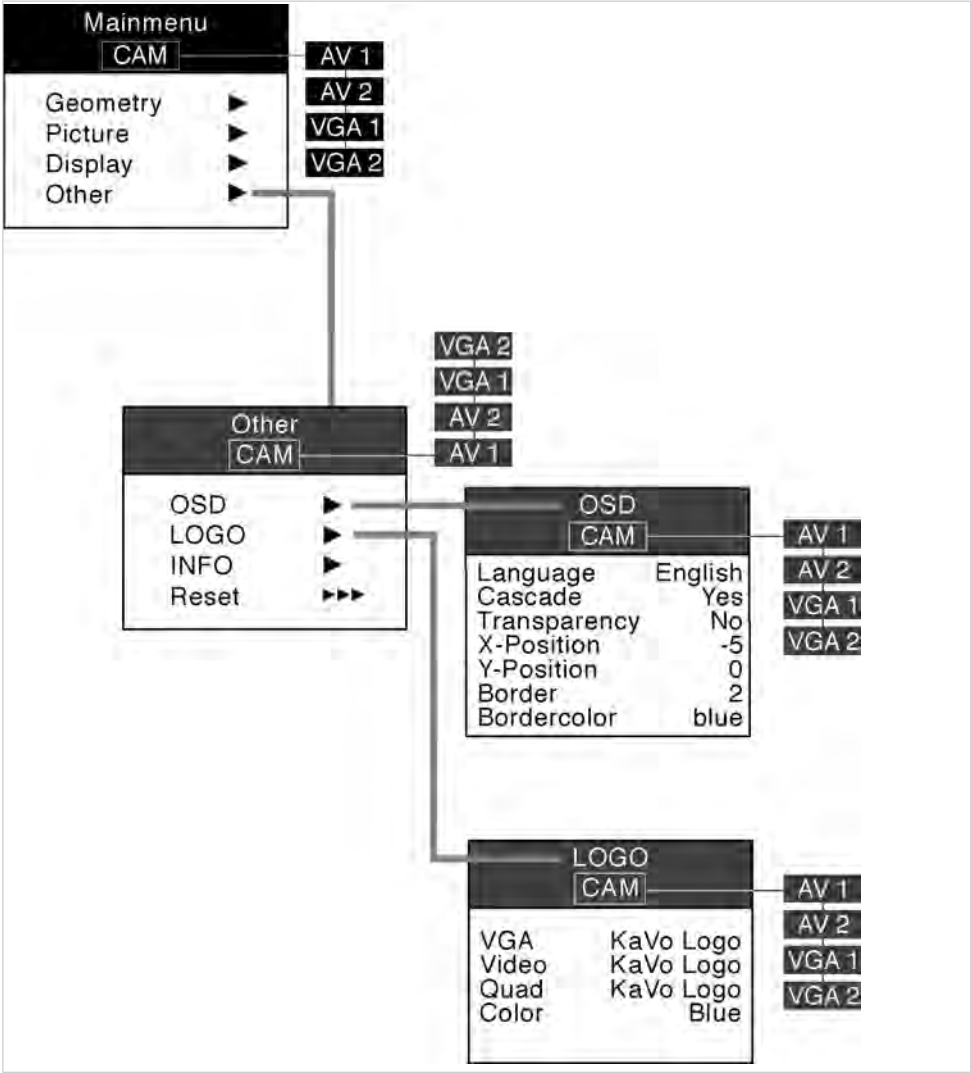


5.4.5 Menu point, other

This menu point is available in all main menus (VGA and VIDEO). However, it is not saved separately for all menus, but only once, covering all menus.



Note
The requisite explanations of the individual menu points or settings are inserted directly on Display 1.



6 Preparation methods DIN EN ISO 17664

6.1 Cleaning

6.1.1 Exterior cleaning by hand

The wide variety of drugs and chemicals used in dental practice means that damage may occur to painted surfaces or plastics if anything is allowed to drip onto them. Tests have shown that surfaces cannot be protected entirely against all substances available on the market.

As damage to surfaces is very much dependent on the reaction times of these substances, it is essential for any spilled substances to be wiped away immediately using a damp cloth.

Detergent recommended: KaVo Elastoclean.

The following detergents must not be used:

1. Strongly alkaline lyes
2. Acids
3. Detergents containing fluoride
4. Detergents containing ammonia
5. All kinds of scouring agent

- Switch off Display 1 and **ERGOcom 3**.



CAUTION

Damage caused by fluids.

Faults in electrical components.

- Protect device openings from the penetration of fluids.

- Use a soft cloth and mild cleaning fluid to clean the surface.

6.2 Disinfection



Damage caused by fluids.

Faults in electrical components.

- ▶ Protect device openings from the penetration of fluids.

- ▶ Wipe surface with a soft, fluff-free cloth to disinfect them.



Note

Contaminated parts must be disinfected after every patient.

6.3 Maintenance

The product does not require regular user maintenance.

7 Safety checks

If an EC3 Display is integrated with an **ERGOcom 3**, safety checks (SFC) must be performed every 2 years. A detailed description of SFC can be found in the engineer's instructions.

See also: E**ERGOcom 3**

8 Troubleshooting

Fault	Cause	Remedy
No status display.	ERGocom 3 switched to standby.	▶ Leave Standby mode. See also: 5.1.2 Standby, Page 24
	ERGocom 3 off.	▶ ERGocom 3 on.
	Mains fuse burnt out.	▶ Test mains fuse and replace where necessary.
ERGocom 3 switches itself off and cannot be switched back on immediately.	Overheating.	▶ Ensure good ventilation for the ERGocom 3 . See also: 4 Start-up, Page 20
Everything has stopped working.	Mains failure / overvoltage.	▶ ERGocom 3 to be switched off and then switched on again after 5 seconds.
Access to USB hardware does not work under Windows XP.	The Microsoft patch needed to operate the USB port is not installed on the target computer.	▶ Install the required patch. This can be done while installing the CCCDIS. See also: 4.1.3 Connect PC , Page 22
Selected image source (e.g. DVD player) is not displayed.	The DVD player is switched off, or no DVD has been inserted.	▶ Check image source.
No camera image is displayed.	Treatment unit switched off.	▶ Switch on treatment unit.
Poor video quality.	Poor image material.	▶ Only use image material that is of good quality.
Poor PC image source quality.	Display setting for graphics card not the same as the display format setting on the ERGocom 3 .	▶ Adjust display format and graphics card setting. See also: 5.1.5 Menu points, Page 25
Poor image quality.	Incorrect settings in the OSD menu display interface.	▶ Improve the image quality using the options in the OSD menu. See also: 5.4 Operation, OSD menu display interface, Page 46

9 Glossary

Term	Description
Display 1	Display 1 is the display connected via the VGA Monitor interface and installed on the lamp mounting rod.
Display 2	Display 2 is the display connected via the VGA out interface.
Full screen mode	The image is displayed across the entire display area.
Quad mode	Four independent images are shown in the display.
OSD menu display interface	The OSD menu of the display interface. This is controlled via ERGOcom 3 and shown in Display 1.
OSD menu, ERGOcom 3	The ERGOcom 3-specific OSD menu. This is shown in the status display.
OSD menu, Display 1	The EC3 Display-specific OSD menu. This is controlled and shown in the display.

User instructions ERGOremote



Always on the safe side.

Sales and Distribution:

KaVo Dental GmbH

Bismarckring 39

D-88400 Biberach

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Fax: ++ 49 / 73 51 / 56 – 14 88

Manufacturer:

Kaltenbach & Voigt GmbH

Bismarckring 39

D-88400 Biberach



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1 User Notes

1.1 User guidelines

Prerequisite

Please read these instructions before using the product to avoid operator error and damage.

1.1.1 Abbreviations

Abbreviation	Meaning
UI	User instructions
SI	Setup instructions
STI	Service Technician's instructions
SFC	Safety checks
IEC	International Electrotechnical Commission

1.1.2 Symbols

	See Safety/Hazard Warning Symbol chapter
	Important information for users and Service Technicians
	Thermally disinfectable
	Sterilisable up to 135°C
	CE (Communauté Européenne) marking. Products bearing this marking conform to the requirements of the pertinent EC directives (applicable European standards).
	Action prompt
	Laser hazard warning sign
	Laser sign
	ESD - warning message

1.2 Target audience

This document is intended for use by dentists and other dental practice employees.

1.3 Service



Please send all questions about the product, services and maintenance to the following addresses.

Always quote product serial number in any correspondence.

KaVo Dental GmbH

After Sales Service

Bahnhofstraße 20
D-88445 Warthausen
0049 - (0) 7351-56 2700
0049 - (0) 7351-18218
multimedia@kavo.de
www.kavo.com

KaVo Präsentations- und Servicezentrum Frankfurt (KaVo Presentation and Service Center, Frankfurt)

Hungener Straße 6-12
60389 Frankfurt
069 - 5 97 03 -94 / 95

KaVo Präsentations- und Servicezentrum Hamburg (KaVo Presentation and Service Center, Hamburg)

Sachsenstraße 5
20097 Hamburg
040 - 23 44 -77/ - 78

KaVo Präsentations- und Servicezentrum Düsseldorf (KaVo Presentation and Service Center, Düsseldorf)

Kaiserswerther Straße 35
40477 Düsseldorf
0211 - 49 91 -38 / -39

KaVo Präsentations- und Servicezentrum Berlin (KaVo Presentation and Service Center, Berlin)

Uhlandstraße 20-25
10623 Berlin
030 - 7 91 94 84

KaVo Präsentations- und Servicezentrum Leipzig

Zweenfurther Straße 9
04827 Leipzig-Gerichshain
03 42 92 - 7 41 -12/ -13

1.4 Provisions of guarantee

The KaVo end customer guarantee for the product named in the completion certificate guarantees that the product functions correctly and that there are no faults in the material or workmanship for a duration of 12 months following the purchase date, according to the following conditions:

Following a reasonable complaint relating to defects or short delivery, KaVo guarantee to provide a replacement or perform repairs, whichever they deem most suitable. Claims of any other nature, damages in particular, are excluded. In case of default and gross negligence or intent, the latter only applies if there are no compelling legal provisions opposing it.

KaVo shall not be liable for defects and their consequences, which occur as a result of normal wear and tear, or of improper cleaning or maintenance.

Non-observance of the operating, maintenance or connection regulations; calcination or corrosion; impurities in the air and water supply; or chemical or electrical effects, which are non-standard or not permitted according to company regulations. As a general rule, this guarantee does not apply to lamps, glassware, rubber parts or the colour durability of synthetic materials.

KaVo shall not be liable for defects or their consequences if they are likely to be a direct result of actions or modifications by a customer or third party.

Any claims arising from this guarantee can only be lodged if the completion certificate (carbon copy) has been sent in to KaVo and the operator/user is able to produce the original.

1.5 Transport and storage

**Note**

When transporting used units that are already covered in dust, completely seal the extraction vent at the rear of the unit (e.g. using suitable adhesive tape).

1.5.1 The German packaging ordinance, 28 August 1998

**Note**

Applies only to the Federal Republic of Germany.

KaVo transport packaging is disposed of and recycled by local waste management and recycling companies under Germany's Dual System.

For more information about waste management and recycling, and for up-to-date lists of local waste management and recycling companies, visit the following sites:

<http://www.umweltdatenbank.de>

<http://www.quality.de>

Any KaVo transport packaging that customers return to KaVo, at the customer's own expense, shall be forwarded to the appropriate recycling companies at no extra cost and with no reimbursement.

1.5.2 Damage in transit

Within Germany

If the outer packaging is noticeably damaged upon delivery, the following procedure must be adhered to:

1. The recipient must record the loss or damage on the notice of receipt. The recipient and transport company employee delivering the product must both sign the notice of receipt.
2. Leave the product and packaging in the condition they arrived in.
3. Do not use the product.
4. Report the damage to the transport company.
5. Report the damage to KaVo.
6. Under no circumstances should you return the damaged product to KaVo without prior consultation.
7. Send the signed notice of receipt to KaVo.

If the product is damaged without there being any noticeable damage to the packaging upon delivery, you must proceed as follows:

1. Report the damage to the transport company as soon as possible within 7 days of delivery.
2. Report the damage to KaVo.
3. Leave the product and packaging in the condition they arrived in.
4. Do not use the damaged product.

**Note**

If the recipient fails to adhere to any of the procedures mentioned above, the damage shall be considered as having arisen after delivery (pursuant to Germany's General Terms and Conditions for Carriers (ADSp.), Article 28).

Outside Germany



Note
KaVo shall not be liable for damage caused in transit.
Check the shipment immediately upon delivery!

If the outer packaging is noticeably damaged upon delivery, the following procedure must be adhered to:

1. The recipient must record the loss or damage on the notice of receipt. The recipient and transport company employee delivering the product must both sign the notice of receipt.
The recipient may claim damages against the transport company only on the basis of these recorded facts.
2. Leave the product and packaging in the condition they arrived in.
3. Do not use the product.

If the product is damaged without there being any noticeable damage to the packaging upon delivery, you must proceed as follows:

1. Report the damage to the transport company as soon as possible within 7 days of delivery.
2. Leave the product and packaging in the condition they arrived in.
3. Do not use the damaged product.



Note
If the recipient fails to adhere to any of the procedures mentioned above, the damage shall be considered as having arisen after delivery (pursuant to the Convention on the Contract for the International Carriage of Goods by Road (CMR) Chapter V Article 30).

1.5.3 Storage



Note
Save packaging in case product requires sending away for servicing or repairs.

The symbols printed on the outer packaging apply to transportation and storage; their meanings are as follows:

	Keep upright in transit; this way up!
	Handle with care
	Keep dry
	Stacking limitation.
	Temperature limitations.

2 Safety

2.1 Description of safety instructions

2.1.1 Hazard warning symbol

	Hazard warning symbol
---	-----------------------

2.1.2 Structure



The introduction describes the type and source of the danger.
This section shows what could happen if the instructions are not followed.
► The optional action shows what measures to take to avoid danger.

2.1.3 Description of the different levels of hazard

To avoid personal and material injury, safety instructions within this document are classified into three levels of hazard.



CAUTION
Indicates a potentially dangerous situation which could result in material damage, minor personal injury or non-severe personal injury.



WARNING
Indicates a potentially dangerous situation which could result in fatal injury or severe personal injury.



DANGER
This is the highest level of hazard. It indicates an imminently dangerous situation which could result in fatal injury or severe personal injury.

2.2 Intended purpose

2.2.1 General

The operator is required to make sure that the device is in a fully functional and safe condition before commencing use.

The appropriate, comprehensive guidelines for this product and/or national laws, national regulations and technological rules for starting up and operating have to be applied and fulfilled in line with the specified, intended purpose of the KaVo product.



Note

Dispose of or recycle the waste materials produced without endangering human health or the environment and under observance of the applicable national regulations that are in place.

Should you have any questions relating to the proper disposal of the KaVo product, please contact your nearest KaVo office.

2.2.2 Product-specific

The **ERGOremote** remote control is for controlling **ERGOcom 3** and/or for controlling a computer by mouse.

It is a medical device accessory (protection class 1) for use within the patient environment of dental practices.

2.3 Safety instructions

2.3.1 General

This KaVo product is not permitted for use in areas where there is a risk of explosion.



Injuries or harm caused by damaged functional components.

Damaged functional components can cause personal harm or injury.

- ▶ If functional components are damaged: Stop work, remedy the problem or inform the Service Technician.



Malfunction due to electromagnetic fields.

This product meets all the requirements that are in effect relating to electromagnetic fields. Due to the complex interference between mobile phones and medical devices, it is not, however, possible to completely exclude the possibility of the product being affected by a functioning mobile phone.

- ▶ Refrain from using mobile phones in the practice and clinic area!
- ▶ Turn off electronic equipment, such as data memories, hearing aids etc, during operation!



Risks caused by electromagnetic fields

Electromagnetic fields may interfere with the functions of implanted systems (such as pacemakers).

- ▶ Consult the patient before treatment!



Damage caused by fluids.

Faults in electrical components.

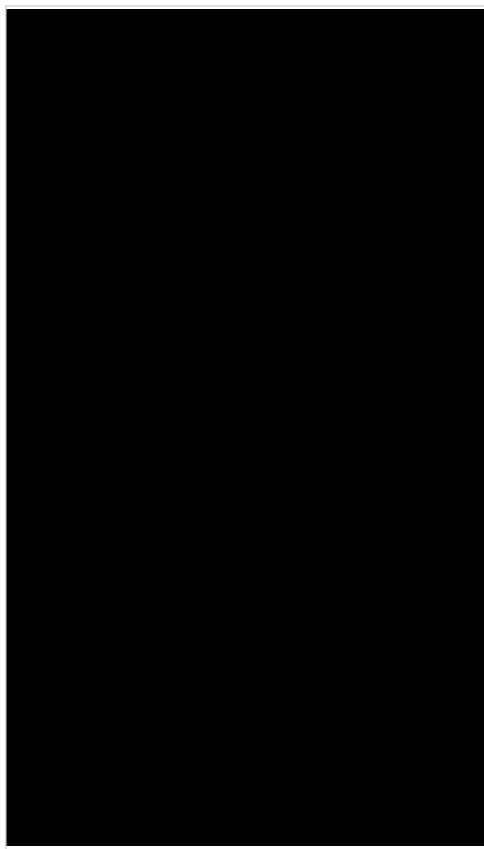
- ▶ Protect product openings from the penetration of fluids.

The following individuals are authorised to repair and maintain the KaVo product:

- Service Technicians from KaVo offices.
- Service Technicians working for KaVo authorised dealers, specially trained by KaVo.

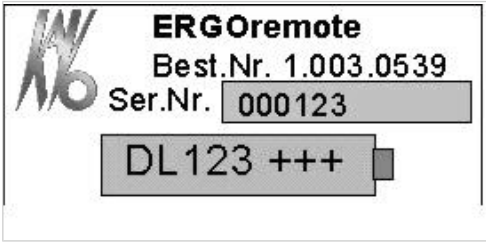
3 Product description

3.1 ERGOremote



- | | |
|---------------------------------------|-----------------------------------|
| ① Delete Image/Call ERGOcom 3 Control | ⑩ Standby/On |
| ② LED Radio Communication | ⑪ VGA Input 1 to Display 1 |
| ③ Wake Up/Learn | ⑫ Video Input 1 to Display 1 |
| ④ Freeze | ⑬ Video Input Camera to Display 1 |
| ⑤ Mouse/Joystick | ⑭ Left |
| ⑥ Right | ⑮ Up |
| ⑦ Down | ⑯ OSD |
| ⑧ Video Input 2 to Display1 | ⑰ Quad mode |
| ⑨ VGA Input 2 to Display 1 | |

3.2 Rating plate



Type	ERGOremote
Purchase order no.	1.003.0539
Serial no.	nnnnnn
DL123+++	Battery and polarity labelling

3.3 Technical data

Wave band	ISM 2.4 GHz
Number of channels	38
Maximum range without obstructions	typically 100 m
Range in room	< 20 m
Radiated power	< 5 mW
Sleep mode	< 10 µA
Standby	typically 3 mA
Send operation	typically 100 mA
Receive operation	typically 80 mA
EN 300,440-1-2	Use of product spectrum
EN 301,489-1	EMC
EN 60950	Safety and low voltage directive
Authorisation according to	R&TTE, FCC



4 Start-up

4.1 Insert battery



Note

A DL 123 battery is supplied with the equipment.

Only use original batteries. We cannot provide a functional guarantee for other batteries.

- ▶ Remove screw to open battery compartment.
- ▶ Insert the battery correctly in the compartment (in line with pole labels).

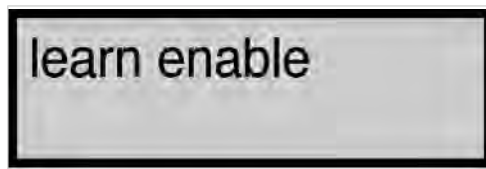


4.2 Learn channel

The **ERGOremote** 's radio code is synchronised with the channel configured on **ERGOcom 3** .



- ▶ Hold down the Channel Selection button on **ERGOcom 3** for more than 2 seconds.
Learn Channel Mode appears on the status display.



Note

If the channels do not synchronise within approx. 30 seconds, **ERGOcom 3** switches back to operational mode.



- ▶ Hold down the Wake Up/Learn button on the **ERGOremote** for more than 3 seconds.
The green LED will be lit for 3 seconds to show that synchronisation is complete.

The green LED will flash to indicate that radio communication has not been set up.

5 Operation

5.1 Controls/displays

5.1.1 Synchronise the ERGOremote to ERGOcom 3



Note

Channel 1 is set as a default. If there are a number of different **ERGOremote** and **ERGOcom 3** instruments in use at the practice, a different channel must be set and the associated learning procedure completed in every room of the practice.

- Switch on Learn mode on **ERGOcom 3**.

See also:

4.2 Learn channel, Page 16

5.1.2 Wake Up



- Before using the **ERGOremote**, press the Wake Up button or any other function button (apart from the joystick.)
The LED is lit up for approx. 3 seconds.

An internal calibration is run during this period. The joystick must not be moved about. All the other functions are available immediately.

5.1.3 Sleep mode

Once the buttons or joystick have been operated, **ERGOremote** remains in an operative state for approx. 30 seconds. Once this 30 seconds is up, **ERGOremote** automatically returns to sleep mode.

5.1.4 Send and receive status

The green LED acknowledges every active send and receive operation.

5.1.5 Reset

If the green LED is constantly flashing, this indicates a disruption in the radio link. To remedy the disruption, reset the instrument.



- ▶ Press the Standby button.
The right, left, up and down button functions are reset.



Note

ERGOfcom 3 and the ERGOcom 3 display switch to Standby mode.

5.1.6 Delete image in Video mode

You can use the cursor buttons to navigate from one image to another. A brighter image number indicates which image is active.



- ▶ Press delete.
The active image in Quad or Full Screen mode is deleted.

5.1.7 Quad mode in Video mode



You use this button to toggle between Full Screen and Quad mode.

5.1.8 Freeze in Video mode

Generate still



- ▶ Press the Freeze button.
The activated image is frozen.

Return to live image



- ▶ Hold down Freeze button for less than 3 seconds.
The still switches back to a live image.

Save still



- ▶ Hold down Freeze button for more than 3 seconds.
The still is saved in the USB memory of ERGOcom 3 or on the PC, depending on the minimum system requirements.

5.1.9 OSD Display Interface



- Press the OSD button.

The On Screen Display appears.

See also: ERGOcom 3 Instructions for Use

5.1.10 Cursor keys

Joystick

Prerequisite

The corresponding PC is connected via the USB interface of **ERGOcom 3**.

The joystick can be used to move the cursor on the PC interface.
If the z axis in ERGOcom 3 is activated, you can perform click and double-click functions by placing axial pressure on the joystick.

Up



In VGA mode, the up button is used to scroll through active menus.
In Video mode and OSD (Display Interface) mode, it can be used to navigate between the four images.

Right



In VGA mode, the right button is used to control the cursor - equivalent to the right-hand mouse button.
In Video mode and OSD (Display Interface) mode, it can be used to navigate between the four images.

Left



In VGA mode, the left button is used to control the cursor - equivalent to the left-hand mouse button.
In Video mode and OSD (Display Interface) mode, it can be used to navigate between the four images.

Down



In VGA mode, the down button is used to scroll through inactive menus. In Video mode and OSD (Display Interface) mode, it can be used to navigate between the four images.

5.1.11 Video Input 2 to Display 1



This button is used to switch the incoming image signal at Video Input 2 Directly to Display 1.

5.1.12 Video Input Camera to Display 1



This button is used to switch the incoming image signal at the Video Input Camera directly to Display 1.

5.1.13 Video Input 1 to Display 1



This button is used to switch the incoming image signal at Video 1 directly to Display 1.

5.1.14 VGA Input 2 to Display 1



This button is used to switch the associated image contents at VGA Input 2 directly to Display 1.

5.1.15 VGA Input 1 to Display 1



This button is used to switch the associated image contents at VGA Input 1 directly to Display 1.

5.1.16 Standby



Select this button to switch **ERGOcom 3** and Display 1 over to power saving mode. This saves power and prolongs the life cycles of the instruments.

5.1.17 Battery warning

Once the **ERGOremote** has undergone a certain length of operation, it will become necessary to change its energy source. This is monitored by the instrument.

If the cell voltage falls below the level required for safe operation, the red LED will flash for approximately 3 seconds after wake-up indicating that the battery needs replacing.

6 Preparation methods DIN EN ISO 17664

6.1 Cleaning

6.1.1 Exterior cleaning by hand

The wide variety of drugs and chemicals used in dental practice means that damage may occur to painted surfaces or plastics if anything is allowed to drip onto them. Tests have shown that surfaces cannot be protected entirely against all substances available on the market.

As damage to surfaces is very much dependent on the reaction times of these substances, it is essential for any spilled substances to be wiped away immediately using a damp cloth.

Detergent recommended: KaVo Elastoclean.

The following detergents must not be used:

1. Strongly alkaline lyes
2. Acids
3. Detergents containing fluoride
4. Detergents containing ammonia
5. All kinds of scouring agent



Damage caused by fluids.

Faults in electrical components.

- Protect product openings from the penetration of fluids.

- Use a soft cloth and mild cleaning fluid to clean the surface.

6.2 Disinfection



Damage caused by fluids.

Faults in electrical components.

- ▶ Protect product openings from the penetration of fluids.

- ▶ Wipe surface with a soft, fluff-free cloth to disinfect them.

6.3 Maintenance

The product does not require regular user maintenance.

7 Glossary

Term	Description
Display 1	Display 1 is the display connected via the VGA Monitor interface and installed on the lamp mounting rod.
Display 2	Display 2 is the display connected via the VGA out interface.
Full screen mode	The image is displayed across the entire display area.
Quad mode	Four independent images are shown in the display.
OSD menu display interface	The OSD menu of the display interface. This is controlled via ERGOcom 3 and shown on Display 1.
OSD menu, ERGOcom 3	The ERGOcom 3-specific OSD menu. This is shown in the status display.
OSD menu, Display 1	The ERGOcom 3 display-specific OSD menu. This is controlled and shown in the display.

