iTool DVR
Digital Video Recorder

Zoom: 1.0x Flip: N Integr:Standard   11.9

i CONCEPTS
Inspection Technology Concepts

Operation Manual

Zoom: 1.0x Flip: N Integr:Standard 11.9

Content

Introduction

We congratulate you on buying your iTool DVR Video Imaging Hub, in the following just named iTool. The iTool constitutes the core of the iTool DVR System. It unites Light Source, TFT Display plus Image Storage and Video Recording Device. The iTool mostly is delivered in conjunction with an iSeries Videoscope and an iPack, iCase or iCaseplus.

The diversity of inspection objects, materials and lightning conditions often makes it difficult to get high-quality images. It is easy to adjust the iTool to your application to receive optimal inspection images even in extreme situations.

Always keep the Operation Manual with the iTool. It contains all information for safe and efficient operation. However, should you have further questions, feel free to contact our Service Team.

Online Store - store.itcworld.de

Warning Notices and Precautions

Read the Operation Manual carefully before suing the iTool.
The iTool is designed for a diversified field of applications in Industry, Building and Science.

Caution! The iTool has not to be used in specially designated or prohibited areas (e.g. Explosion Prevention).

Caution! The iTool has to be employed by skilled and qualified personnel appropriate to the application.

Electric Shock! No unauthorised opening of the casing. There is high danger of electric shock due to Parts being under voltage.

Caution! Never look directly into the light emitting part of the Videoscope or of the Light Source. There is ultraviolet and infrared as well as highly intense visible light coming from the Light Source. These can cause injuries of eyes and skin. Always switch off the Light Source or adjust brightness to a minimum when changing or controlling the objective or the distal end of the Videoscope.

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Warning Notices and Precautions

A Videoscope in use with the iTool should not come into contact with a current or voltage source. Damage to the product or an electric shock for you may result.

Always switch off the iTool before connecting a Videoscope or a Video Camera.

Take care, that there always is enough free space for ventilation behind and in front of the iTool.

The iTool is not watertight. Operate the iTool in dry environment only. The iTool is not water-proof and must not be immerged into water.

Only use the iTool as intended.

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Scope of Delivery

If the iTool is delivered as part of a Videoscope System following components will be included in the Scope of Delivery:

– iSeries Videoscope
– iSeries Interchangeable Objective
– iCase or iCaseplus
– Components (see figure on the right)

You will find additional Accessories in this Operation Manual on Page 39, in our Accessories Catalogue or on our Homepage under www.itcworld.de.

We are certainly pleased being at your disposal for personal consulting as well.

SD Card

5-pin Cable short

AC Adapter

Power Supply Cable

Cinch Cable

BNC/Cinch Adapter

Card Reader

Screwdriver

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System Presentation

Overview iTool

Status Indicator Line

24W Metal Halide Light Source

Light Guide Connector

Brightness Control

5-pin Connector for
Videoscope or Camera

Zoom: 1.0x Flip: N Integr:Standard 11.9

TFT-Display

Keypad

SD-Card Slot

The iTool DVR Video Imaging Hub is designed for the use with IT Concepts Videoscopes and CCD Cameras. The 24W Metal Halide Light Source produces extremely bright light and therefore allows illumination of dark cavities. Videos and images are shown on the TFT Display. Overlay texts can be attached to them. Video recordings can also be saved with additional audio comments.

System Presentation

Overview iTool

BNC Connector (IN) for
Videoscope or Camera

BNC Connector (OUT) for
Hard Disk, Monitor, etc.

Microphone Connector

12V DC Input

S-Video IN

Headphones Connector

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System Presentation

The 24 Watt Metal Halide Light Source Caution!

Never look directly into the light emitting part of the Videoscope or of the Light Source. There is ultra-violet and infrared as well as highly intensive visible light coming from the Light Source. These can cause injuries of eyes and skin.

Use the Aperture to adjust the intensity of the light. For most applications we recommend to open it completely.
For cleaning of the distal end or changing the Objective switch of the Light Source or remove the Light Guide Cable from it.
The Metal Halide Lamp installed needs 30 seconds from engaging to generate full and steady luminance. An untimely (<30sec.) power-down extremely reduces the durability of the lamp or can even lead to its destruction.

⚠ High Voltage – Danger to Life!

Always have a lamp installed into the Light Source (or even let a depleted lamp installed if necessary) and close the casing before starting the iTool!
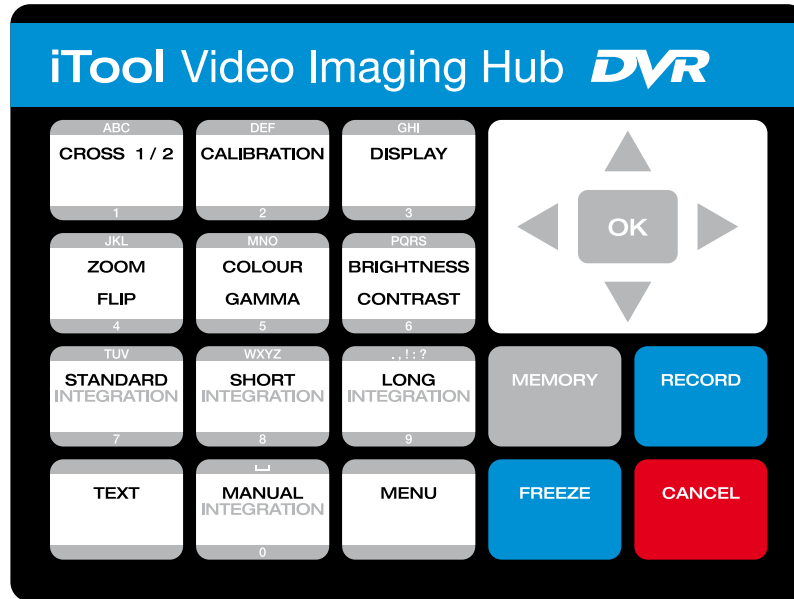

Aperture

Switch ON/OFF

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System Presentation

The iTool Control Panel

Using the control panel you can navigate through the menu structure, select and confirm functions.

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System Presentation

CROSS	Select Measuring Function
CALIBRATION	Select Calibration Function
DISPLAY	Switch on/off the Status Indicator Line
ZOOM/FLIP	Set digital Zoom as well as Image Flip (Mirroring) via arrow keys
COLOUR/GAMMA	Set the Colour Saturation as well as the Gamma Value via arrow keys
BRIGHTNESS/CONTRAST	Setting of brightness as well as contrast via arrow keys
STANDARD INTEGRATION	Automatic optimisation of the Camera Settings
SHORT INTEGRATION	Optimised Camera Settings for low lighting conditions.
LONG INTEGRATION	Optimised Camera Settings for very low lighting conditions.
MANUAL INTEGRATION	Individual Camera Settings.
TEXT	Open Text Generator: Input via alpha numeric keypad, arrow keys and OK-button.
MENU	Open/Close On Screen Menu
MEMORY	Open/Quit Memory Mode
RECORD	Start/Stop Video Recording
FREEZE	Pause Video Recording / freeze image / frame capture
CANCEL	Quit Submenu in Memory Mode
OK	Confirm choice / frame capture
ARROW KEY	Navigate

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System Presentation

iTool Interfaces

Light Guide Connector   5pin Cable

SD Card

Videoscope   Camera

Smart Change

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iTool Interfaces

BNC - Cinch Adapter

BNC - Cinch Adapter

S-Video IN
Headset

S-Video IN
cable

+ -

Cinch Cable

Cinch Cable

AC Adapter

Camera

Battery Belt

Camera

Monitor

Cigarette Lighter Cable

Preparing the iTool

Connecting to Power Supply

The 12V DC plug as well as the socket is marked with a red dot. Connecting the 12V DC plug to the iTool, assure that both red dots are visibly opposed.

Connect the mains adapter to the standard AC power supply cable and plug it in a 100/110V or a 220/240V shockproof socket.

As an option the iTool can be energised by the powerBelt (Art.Nr.: 900-06000-0030-V) or a Vehicle Electric System (Car Battery Cable 900-05000-0004 or Cigarette Lighter Cable 900-00002-0012).

Install iSeries Videoendoscops

white   black

Plug the Light Guide Connector in the Light Source until engagement.

Connect the iSeries Videoscope to the 5pin Video Cable (black to white).

Connect the iTool to the 5pin Video Cable (white to black).

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Preparing the iTool

Inserting a SD Card

Put a formatted SD Card(32 GB max.) into to SD Card slot. The SD Card included in the scope of delivery is already properly formatted.

Connecting a Headset

Establish following connections:
- Microphone Plug (pink) to MIC Socket
- Headphones Plug (green) to SPK Socket.

Connecting Output Devices

Different output devices can be connected to the Video- OUT socket by using the Cinch Cable and the Cinch/BNC Adapter included in the scope of delivery:

Cinch-BNC-Adapter

Cinch-Kabel

Cinch-Schnittstelle zur Ausgabe eines Video-Signals an ein externes Darstellungsgerät

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Starting Inspection

Switching-on the iTool

After having prepared the iTool according to this Operation Manual first switch-on the iTool, then the Light Source by pressing the power switches.

Flip open the top of the iTool. The boot sequence is visible on the TFT Display.


Switch off the iTool (but not the Light Source) when connecting a new device or changing the device and switch it on afterward

Menu Structure and Operation

After having followed the steps before you may start inspection now.
Using the control panel you can select and control functions. A detailed description can be found on pages 12/13.

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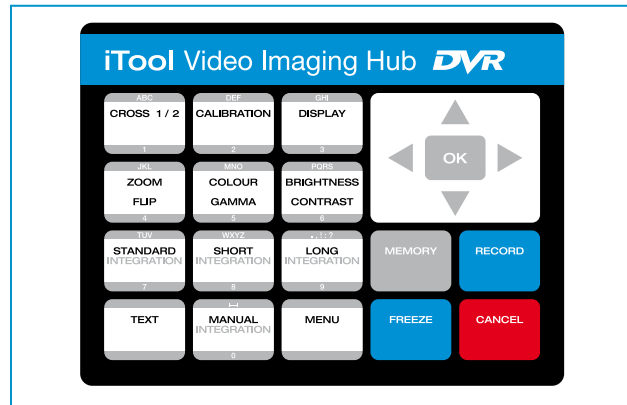
Starting Inspection

Language selection

In delivery condition either English or your local language is preset.

For initial operation you should check the manu language and set it to your prefered language if necessary. Following languages are available:

– English (Default Setting)
– German
– French
– Spanish
– Italian

To change the language set proceed as follows:

– MENU
– System Setting - OK
– Select „Language" – the menu is directly
  shown in the selected language. ◀ ▶
– to quit – press MENU again

| Image Control |
| Camera Control |
| Annotation |
| Dimension |
| **System Setting** |
| Safety remove SD |

Status Line	: ON
Freeze Frame	: OFF
Language	**: English**
Date/Time	: Press OK
SD info	: Press OK
SD format	: Press OK
Fabric Settings	: Press OK
Software Status	: P010 55
Serial Number	: 20110815

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Starting Inspection

Resetting to Default Settings

By selecting the menu item Fabric Settings all manually changed and adjusted parameters can be put back to factory setting, except for date, time and text generator.

– MENU
– System Setting - OK
– Fabric Settings - OK

You are in Live-Mode again afterwards.

```
 Image Control
 Camera Control
 Annotation
 Dimension
 System Setting
 Safety remove SD
```

```
 Status Line        :  ON
 Freeze Frame       :  OFF
 Language           :  English
 Date/Time          :  Press OK
 SD info            :  Press OK
 SD format          :  Press OK
 Fabric Settings    :  Press OK
 Software Status    :  P010 55
 Serial Number      :  20110815
```
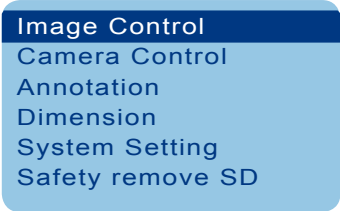
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Starting Inspection

Image Control

The image parameters (Brightness, Contrast and Colour as well as Zoom, Flip and Dimming) can be adjusted under the menu item Image Control. Change the marked parameter by using the arrow keys.
The settings will effect directly. You get back to Live-Mode by pressing MENU. You can put the marked parameter to fabric setting by pressing the OK-Button.

Caution! The image parameters set are effective to the image displayed as well as to all images and videos to be saved. Images and videos will be saved exactly as they are displayed (except for Dimming TFT Display).

Notice! The above mentioned image settings can also be adjusted directly via the iTool keypad (except for Dimming TFT Display).

Image Control
Camera Control
Annotation
Dimension
System Setting
Safety remove SD

Brightness	IIIIIIIIIIIIIII··············	50%
Contrast	IIIIIIIIIIIIII··············	50%
Colour	IIIIIIIIIIIIII··············	50%
Zoom	I·························	1x
Flip	Normal	
Dimmen	IIIIIIIIIIIIII··············	50%

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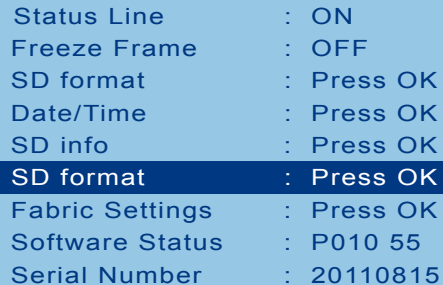
Starting Inspection

Format SD Card

The SD card included in the scope of delivery of the iTool is already properly formatted. To format a SD card proceed as follows:

Press MENU, select the menu item System Setting and press OK. By using the arrow keys now choose the menu item SD format and press OK again. Now a confirmation prompt appears on the display. Select by using the arrow keys and press OK to confirm.

```
 Image Control
 Camera Control
 Annotation
 Dimension
 System Setting
 Safety remove SD
```

```
 Status Line        :  ON
 Freeze Frame       :  OFF
 SD format          :  Press OK
 Date/Time          :  Press OK
 SD info            :  Press OK
 SD format          :  Press OK
 Fabric Settings    :  Press OK
 Software Status    :  P010 55
 Serial Number      :  20110815
```

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Starting Inspection

Setting Time and Date

In the delivery status of the iTool time and date are preset appropriate to your time zone.
Nevertheless you should check time and date at the initial operation.
If you want to change time and date set proceed as follows:
Press MENU, select the menu item System Setting and press OK. By using the arrow keys now choose the menu item Date / Time and press OK again.
Set Time and Date by using the arrow keys and press OK to confirm.

Image Control
Camera Control
Annotation
Dimension
System Setting
Safety remove SD

Status Line	:	ON
Freeze Frame	:	OFF
SD format	:	Press OK
Date/Time	:	Press OK
SD info	:	Press OK
SD format	:	Press OK
Fabric Settings	:	Press OK
Software Status	:	P010 55
Serial Number	:	20110815

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Creating and saving Image Captures

There are 2 standard settings available. Decide whether you want to choose Freeze Frame Mode „ON" or „OFF" (see pages 24-27) before starting your inspection.
Press MENU, select the menu item System Setting and press OK. By using the arrow keys now choose the menu item Freeze Frame and select ON or OFF.
Notice! With the text generator you have the possibility to add commentary (a single line with 40 characters) to all images.

```
 Image Control
 Camera Control
 Annotation
 Dimension
 System Setting
 Safety remove SD
```

```
 Status Line        :  ON
 Freeze Frame       :  OFF
 Language           :  English
 Date/Time          :  Press OK
 SD info            :  Press OK
 SD format          :  Press OK
 Fabric Settings    :  Press OK
 Software Status    :  P010 55
 Serial Number      :  20110815
```

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Creating and saving Image Captures

Standard Setting No. 1 - "Freeze Frame OFF"

```
                Image-                              Video-
                Capture                             Recording

         iSeries        iTool                        iTool

                                                   Start / Stop


        [camera]    FREEZE      OK                   RECORD
```
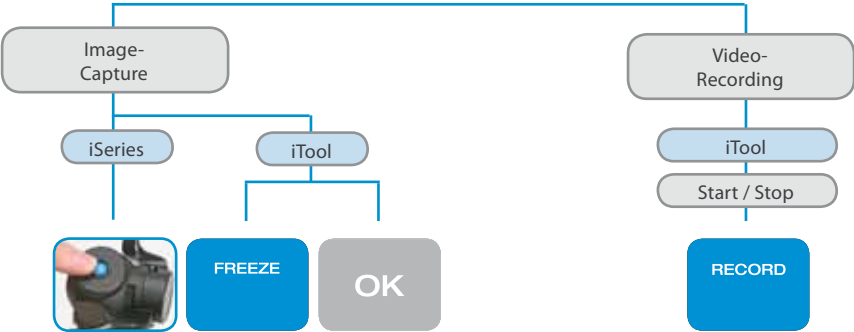
Image captures can be saved during
(proceeding as follows):

```
         iSeries


        [camera]        FREEZE      OK
```

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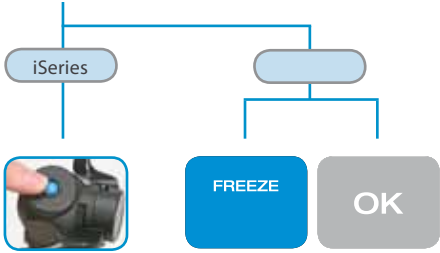
Creating and saving Image Captures
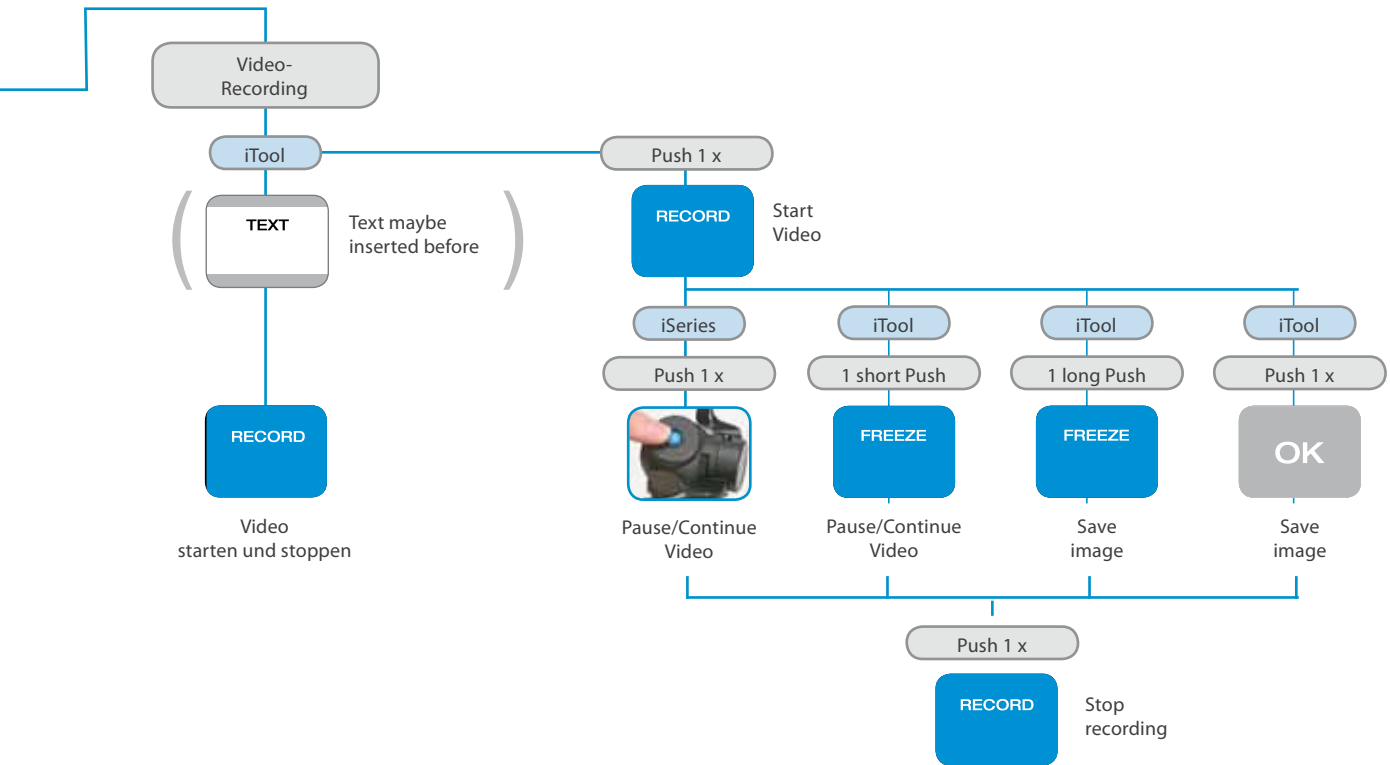
Standard Setting No. 2 - "Freeze Frame ON"

```
                          Image-
                          Capture

         iSeries                    iTool                    iTool

        Push 1 x                   Push 1 x                 Push 1 x

                                     OK                      FREEZE

  Image freeze, Frozen             Save            Image freeze, Frozen
  appears on the screen            Image           appears on the screen

  1 short Push    1 long Push       1 short Push    1 long Push

                                    FREEZE           FREEZE

  Back to         Save             Back to          Text input
  Live Mode       Image            Live Mode         possible
```

0123456789.,:!?
ABCDEFGHIJKLM
NOPQRSTUVWXYZ

arrows - move cursor
<OK> - add symbol
<RECORD> - close editor, save the changes
<MENU> - close editor, cancel the changes
<FREEZE> - delete last right symbol

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Video-Recording

Video-Recording → **iTool** → **Push 1 x**

(**TEXT**) Text maybe inserted before

RECORD — Start Video

RECORD — Video starten und stoppen

After Start Video:

iSeries	iTool	iTool	iTool
Push 1 x	1 short Push	1 long Push	Push 1 x
	FREEZE	FREEZE	OK
Pause/Continue Video	Pause/Continue Video	Save image	Save image

Push 1 x

RECORD — Stop recording

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Creating and saving Image Captures

Comparative Measuring and Calibrating with the iTool

The iTool provides the possibility of point-to-point measuring within the image. This can be used in the Live-Mode as well as in the Memory-Mode. Press CROSS 1/2 on the keypad. Two flags appear on the display. The distance in pixels is shown in the status indicator line. Before the Comparative Measuring you need to make a Calibration as follows: As for the Measuring press CROSS 1/2 (two flags appear on the display) – Now hold the distal end in your fixed Working Distance to an object of known size (e.g. ruler). Move the active flag (displayed in white) to one side of the geometry. Press OK to switch between the flags and lead the second flag to the end of the geometry. When both flags are on the desired positions, press CALIBRATION. The Calibration Window opens. Please insert the measure as value in front of the ":" and the unit (e.g. mm) behind of it. End Calibration by pressing RECORD. The inserted unit now appears in the display.

To save press RECORD again. You now are in Live-Mode with visible flags. Now you may save as usual (see pages 25-27). Your measuring value occurs in

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Playback of saved Images and Recordings

You have access to all data generated on the iTool

All images and video recordings will automatically be saved on the SD card inserted in the iTool as follows:

Image:

Format: bmp
Resolution: 640 x 480 pixel
Location: Folder Picture

Video:

Format: avi
Resolution: 800 x 600 pixel
Location: Folder HVR
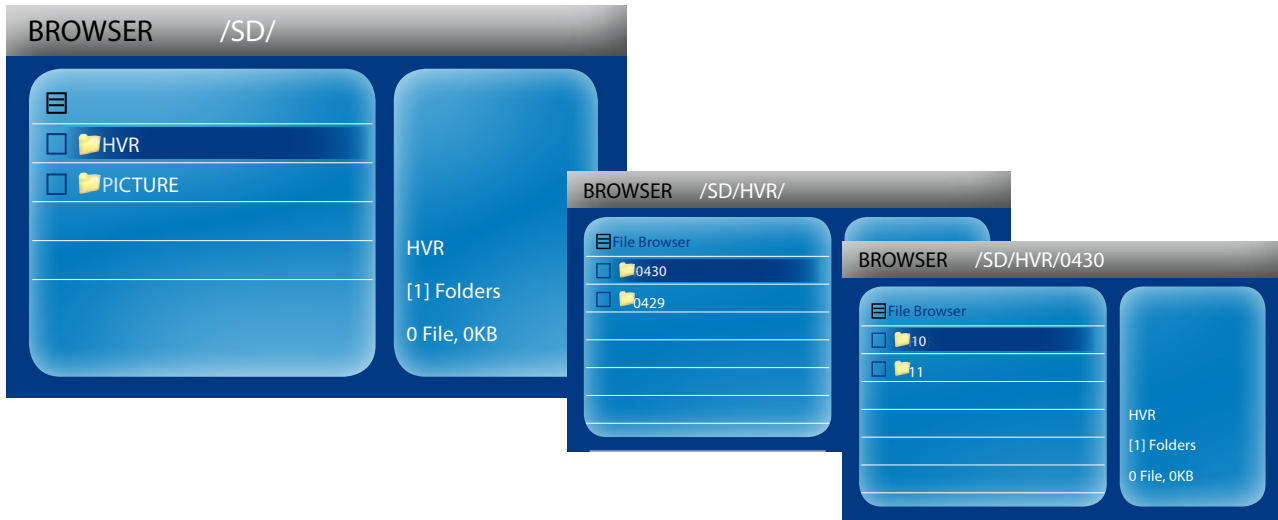   – Subfolder DAY
          – Unterordner HOUR

Name: All files (images as well as video recordings) are named by the system. Each image and video recording gets an automatically created name consisting of date and time.

4.000 MM   2011／04／05   10:25:45

IT CONCEPTS INSPEKTION

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Playback of saved Images and Recordings

Press MEMORY to the Browser-Mode. To get to the desired file navigate through the folder structure by using the arrow keys and the OK-button.

BROWSER   /SD/

- ☐ 📁 HVR
- ☐ 📁 PICTURE

HVR

[1] Folders

0 File, 0KB

BROWSER   /SD/HVR/

File Browser
- ☐ 📁 0430
- ☐ 📁 0429

BROWSER   /SD/HVR/0430

File Browser
- ☐ 📁 10
- ☐ 📁 11

HVR

[1] Folders

0 File, 0KB

Playback of saved Images and Recordings

Images After having selected the desired file you may control by means oft he arrow keys and the OK-button as follows:

"OK" = Open / flip an image

"Arrow keys" = leaf back and forward through images

"Cancel" = back to Browser

Video Recordings After having selected the desired file you may control by means oft he arrow keys and the OK-button as follows:
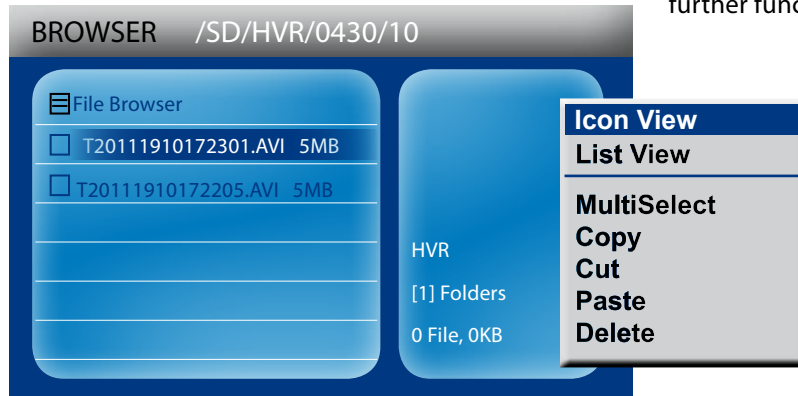
"OK" = Start / Stop / Pause a recording

"Left" = Rewind

"Right" = Fast-forward

"Cancel" = Quit

Additionally you have the possibility to choose further functions in the context menu.

BROWSER   /SD/HVR/0430/10

File Browser

☐ T20111910172301.AVI   5MB

☐ T20111910172205.AVI   5MB

HVR

[1] Folders

0 File, 0KB

Icon View
List View

MultiSelect
Copy
Cut
Paste
Delete

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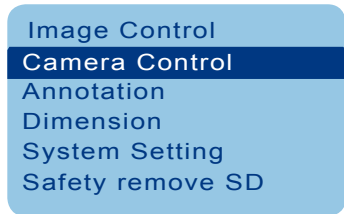
Optimising Camera Settings

Camera Setting
The Camera Settings help to optimal adjust the Videoscope or Camera to your application. Besides the Standard Setting the iTool provides three further Camera Settings:

SHORT INTEGRATION
LONG INTEGRATION
MANUAL INTEGRATION

Press MENU, choose the menu item Camera Control and press OK. Choose the desired Camera Setting by using the arrow keys.

Note! The above mentioned Camera Settings can as well be selected by using the irect action keys on the control panel.

Image Control
Camera Control
Annotation
Dimension
System Setting
Safety remove SD

Integration	:	Standard
Detector Type	:	Mean
Manual Shutter	‖‖‖‖‖‖‖‖··········	50%
Manual Gain	‖‖‖‖‖‖‖‖··········	50%
AGC Level	‖‖‖‖‖‖‖‖··········	50%
Gamma	‖‖‖‖···········	+2
White Balance	:	Press OK

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Optimising Camera Settings

Camera Setting STANDARD

The standard setting is approved for a variety of applications to get clear and expressive inspection images.
This setting produces an automatic optimizing of the Camera Ssettings.
In this setting you can influence two further parameters:

Integration	:	Standard	
Detector Type	:	Mean	
Manual Shutter		‖‖‖‖‖‖‖‖‖‖··········	50%
Manual Gain		‖‖‖‖‖‖‖‖‖‖··········	50%
AGC Level		‖‖‖‖‖‖‖‖‖‖··········	50%
Gamma		‖‖‖‖··················	+2
White Balance	:	Press OK	

White balance

The white balance can only be executed in the camera setting STANDARD.
How colours of images or videos are displayed is depending on the colour temperature of the light source. The exchange of the 24W Metal Halide Lamp or the use of an alternative light source affords to execute a white balance to have the colours optimal displayed.
1. For this hold the distal end of the videoscope in front of a white non-reflecting sheet of paper.
2. Switch on the light source.
3. Put the distal end in a position where no irradiations are visible in the picture.
4. Select the feature Whitebalance and confirm by pressing OK.
5. Now hold OK until the white balance is executed.

Gamma Correction

With the Gamma correcting the video signal can be optimized regarding brightness and contrast.

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Optimising Camera Settings

Camera Setting SHORT INTEGRATION

The camera setting Short Integration is particularly recommended for inspections with low (dark) lighting conditions.
This setting provides an optimal live image by means of a high signal gain and a long exposure time. This allows a particular well orientation in the hollow during inspections.
In this setting you can influence two further parameters:

Integration	:	Short integration	
Detector Type	:	Mean	
Manual Shutter		||||||||||||||··············	50%
Manual Gain		||||||||||||||··············	50%
AGC Level		||||||||||||||··············	50%
Gamma		|||||··················	+2
White Balance	:	Press OK	

Detector type

Here you have the choice between two modes.

Detector type MEAN: The camera control system detects the brightness of the whole image (multi-zone metering) and adjusts the signal brightness based on the measured brightness and the AGC level set.

Detector type PEAK: The camera control system adjusts the image brightness depending on the brightest line detected. Application: Better perceptibility of details in image areas with high brightness.

AGC level (Auto Gain Control): This feature adjusts the optimal image brightness with the brightness adjustment level being predefined by the AGC level (high value = high gain).

Gamma
With the Gamma correcting the video signal can be optimized regarding brightness and contrast.

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Optimising Camera Settings

Camera Setting LONG INTEGRATION

The camera setting Long Integration is particularly recommended for inspections with very low (dark) lighting conditions. With the distal end fixed this setting provides an optimal image capture. In this setting you can influence two further parameters:

Integration	:	Long integration	
Detector Type	:	Mean	
Manual Shutter		||||||||||||||··············	50%
Manual Gain		||||||||||||||··············	50%
AGC Level		||||||||||||||··············	50%
Gamma		|||||··········	+2
White Balance	:	Press OK	

Detector type

Here you have the choice between two modes.

Detector type MEAN: The camera control system detects the brightness of the whole image (multi-zone metering) and adjusts the signal brightness based on the measured brightness and the AGC level set.

Detector type PEAK: The camera control system adjusts the image brightness depending on the brightest line detected. Application: Better perceptibility of details in image areas with high brightness.

AGC level (Auto Gain Control): This feature adjusts the optimal image brightness with the brightness adjustment level being predefined by the AGC level (high value = high gain).

Gamma With the Gamma correcting the video signal can be optimized regarding brightness and contrast.

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Optimising Camera Settings

Camera Setting MANUAL

The camera setting Manual gives you the possibility to individually change the camera setting without the influence of the automatic camera control system.

```
Integration        :  Manual
Detector Type      :  Mean
Manual Shutter        |||||||||||||||·············  50%
Manual Gain           |||||||||||||||·············  50%
AGC Level             |||||||||||||||·············  50%
Gamma                 |||||·····················  +2
White Balance      :  Press OK
```

Manual shutter

Setting image brightness by adjusting the relative exposure time of the sensor. This allows image capture at poor lighting conditions.

Manual gain

Setting image brightness by adjusting the signal gain. But this will increase electric signal noise and reduce image quality.

Gamma

With the Gamma correcting the video signal can be optimized regarding brightness and contrast.
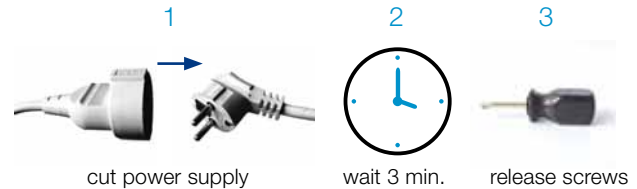
Maintenance

Replacement of the Metal Halide Lamp
Always use the original IT Concepts 24W Metal Halide Lamp (Art.Nr.: 900-01002-0004). Switch off the iTool and the light source (Switch to position 0).

I = ein
0 = aus

Before opening the light source always remove the power supply cable from the iTool – High Voltage! Wait at least 3 minutes until the lamp has cooled down. Open the cover on the front of the light source by releasing the two cross-drive screws.

1   2   3

cut power supply   wait 3 min.   release screws

Caution! Do not touch Reflection Surface of new Lamp

Pull out the cover of the lamp socket until the plug of the metal halide lamp is visible. Remove the plug from the defective metal halide lamp and move the lamp sideways off the socket. At this mind the nib on the ceramic ring.

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Maintenance

Insert the new lamp to the socket. Here again mind the nib on the ceramic ring. It has to slip into the recess in the lamp socket. Connect the plug to the metal halide lamp.
Put the cover back on the housing, place the crossdrive screws in the threads and tighten them.
After having replaced the 24W Metal Halide Lamp it is necessary to execute a white balance as described on page 40.

Cleaning the iTool
The iTool should be cleaned regularly.

For this always use:

- a soft an clean cloth or
- cotton swaps soaked with
- common dilution of water and
  neutral ph-solution, non-detergent

I = ein
0 = aus

1

2

tighten screws

cut power supply

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Spare Parts and Accessories

Accessories Set

900-00001-0001
- Power Supply 12V DC/5.5A
- Power Supply Cable
- Screwdriver
- Harness/Belt with clip system
- 4GB SD Memory Card
- 5pin Cable (Type I)
- Cinch Video Cable with BNC Adapter
- USB Memory Card Reader
- Operation Manual

Connector Cables and Supplies

900-05000-0026	- USB Memory Card Reader		
830-00001-0003	- 4 GB SD Memory Card		
930-00500-0003-P	- Video Cable Typ I0,3 5-Pin to 5-Pin	0,3m
930-00500-0019-P	- Video Cable Typ I1,0 5-Pin to 5-Pin	1,0m
930-00500-0001-P	- Video Cable Typ I1,8 5-Pin to 5-Pin	1,8m

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Spare Parts and Accessories

Connector cables and supplies (continuance)

930-00500-0017-P	-	Video Cable Typ I3,0	5-Pin to 5-Pin	3,0m
930-00500-0002-V	-	Video Cable Typ II1,8	5-Pin to 12V In & Video Out	1,8m
930-00500-0004-V	-	Video Cable Typ III1,5	Standard Cinch-Videokabel	1,5m

Replacment Lamp

900-01002-0004	-	24W Metal Halide Lamp

Power Supply

820-00001-0003-V	-	Power Supply 12V DC/5.5A
900-05000-0004	-	Car Battery Connector Cable
900-05000-0006	-	Cigarette Lighter Plug Connector Cable
900-06000-0030-V	-	powerBelt Battery Belt, incl. charger and connector cable

Carrying Solution

900-00002-0004	-	standardBelt with clip system
900-06000-0030-V	-	powerBelt Battery Belt, incl. charger and connector cable
900-00002-0012	-	maxhold lockable Inspection Arm for iTool and Endoscope

Transportation Cases

900-06000-0026	-	iCase Outdoor Trolley for iTool Systems
900-06000-0028	-	iCaseplus large Outdoor Trolley for iTool Systems

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Service

To help us to efficiently execute any maintenance or repair of the product, we ask you to contact us directly.

Thank you.

Contact

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Technische Daten

iTool Video Imaging Hub	
Article Number	900-03001-0002-G
Power In	
Voltage Input	12V DC
Power Consumption	2,4A (Light Source switched off)
Power Consumption	5,0A (Light Source switched on)
Power Options	
Standard	via AC Adapter 110V to 240V / 50Hz to 60Hz
Option 1	via powerBelt (900-05000-0006)
Option 2	via Car Battery Cable (900-05000-0004)
Option 3	via Cigarette Lighter Cable (900-06000-0030)
Physical	
Dimensions	290mm x 190mm x 70mm
Weight	2400g
Construction	
Hub Frame	Aluminium Chassis
Hub Housing	Durable PU
Display	
TFT Colour Display	6,8" (17cm)
Resolution	640 x 480 pixels
Operator Guidance	
Logic On Screen Menu	via Keyboard
Menu Navigation	via Keyboard (Arrow Keys and OK-Button)
Camera Control	automatic and manual mode
Image Mirror Function	horizontal and vertical
Textgenerator	integrated Overlay Textgenerator
Menu Languages	German, English, French, Spanish, Italian
Documentation	
Storage Card	SD (up to 32GB max.)
Video System	NTSC / PAL
Image Format	.bmp
Video	.avi

Video System - Image Format	
Single Image - NTSC / PAL - halfframe - .bmp	approx. 900 kb / 640 x 480 pixel
Video - NTSC / PAL - halfframe - .avi	varies / 800 x 600 pixel
Interface/Data Transfer	
Memory Card Slot	via SD (up to 32GB max.)
Video In	via Cinch
Video In	via S-Video IN
Video Out	via Cinch
Audio In	via 3,5mm plug (stereo)
Audio Out	via 3,5mm plug (stereo)
Videoscope In	via 5-Pin cable
Illumination	
Lamp Typ	24W Metal Halide (900-01002-0004)
Colour Temperature	5500K
Light Intensity	1500 Lumen
Intensity Control	Manual Shutter
Average Lamp Lifetime	500 h
Operation Enviroment	
Temperature	-20°C to +45°C
Relative Humidity	0% to 95% rh
Atmospheric Pressure	700hpa bis 1060hpa
Sorage Enviroment	
Temperature	-20°C bis +45°C
Relative Humidity	30% bis 75% rh
Atmospheric Pressure	700hpa bis 1060hpa

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CE Declaration of Confirmity

We declare of our own responsibility that the product (iTool Video Imaging Hub Art. N° 900-03001-0002) complies with the following directive or normative documents:EN61326-1 (2006) Emission and Immunity, according to directive 2004/108/EG Electromagnetic Compatibility

Lahnau, 2011-04-13

CE

Frank Schlagenhauf
Manager Product Development

ITConcepts
Inspection Technology Concepts

EC Konformitätserklärung
EC Declaration of Confirmity
iTool Video Imaging Hub

CE

The iTool Video Imaging Hub combines the 24W Metal Halide light source, the high resolution 6,8" TFT-Display, as well as the image capture and documentation hub.

Art. Nr. 900-030001-0002-G
Art. Nr. NIT-3000

Electromagnetic compatibility directive 2004/108/EC with reference to the harmonized standards EN61326-1 (2006) Emission and Immunity.

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